

A comparison of three systems of classifying presenting problems in general practice

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SUMMARY. Three internationally recognized systems have been devised for classifying presenting problems in general practice. They are: the Royal College of General Practitioners' (1963) classification, the US Ambulatory Medical Care Classification of Symptoms (NAMCS), and the World Organization of Colleges and Academies of General Practice/Family Medicine (WONCA, 1976) classification which is known as *An International Classification of Health Problems of Primary Care* (ICHPPC).

These three systems were compared in over 8,000 consultations conducted by 81 randomly selected British general practitioners in Nottinghamshire.

For all ages of patient, the NAMCS, which has only 197 categories, was the most specific, and the least specific was the classification of the Royal College of General Practitioners.

Introduction

THERE is increasing interest in the study of the presenting symptoms, signs, and complaints that motivate demand in primary medical care. This paper compares the results of using three different systems of classifying presenting problems in primary medical care. These systems are: the *International Classification of Health Problems in Primary Care* (ICHPPC) (WONCA, 1976); the US National Ambulatory Medical Care Survey Classification of Symptoms (NAMCS) (US Department of Health, Education and Welfare, 1974), and the classification of the Royal College of General Practitioners (CGP, 1963). An attempt was made to measure the capability of each classification to identify a problem with complete specificity; that is, to enable

the doctor to label uniquely any problem mentioned by the patient.

The natural history of many diseases is such that an accurate diagnosis (the label attached by the physician to the condition he believes to underlie the patient's complaint) can be made in only a small proportion of patients seeking primary care. This is especially true in the case of new consultations; in one study a correct diagnosis was made in no more than 58 per cent of patient/doctor contacts (Morrell and Gage, 1971). A figure of only 50 per cent was reported in England for all new and old episodes (College of General Practitioners, 1958), and in America a final definitive diagnosis was never reached in 25 per cent of ambulatory care visits (Westbury and Tarrant, 1969; McFarlane and Norman, 1973).

Epidemiologists have for a long time used records of symptoms and have studied the relationship between them and physical signs. Several surveys, particularly those concerned with chronic respiratory disease (Reid *et al.*, 1964; Colley *et al.*, 1973) and heart disease (Morris *et al.*, 1966; Pedoe *et al.*, 1975) have included them since, "The presenting symptom is the logical point at which to start prospective studies concerned with the natural history of illness" (Morrell and Gage, 1971).

Classification of problems has also been advocated for population studies, where the main concern has been the analysis of the use of medical care using encounter forms (Murnaghan, 1973).

Recording presenting problems has also been proposed by those concerned with the status of biomedical measures of morbidity and mortality in medical care evaluation (Martini *et al.*, 1977), and forms the basis of recent rapid developments in the use of sociomedical indicators (Elinson, 1976). The philosophy underlying this new interest in presenting problems is based on increased awareness of the importance of the patient's total bodily, mental, and social dysfunction, of which his pathophysiological condition is only one aspect.

There are other reasons for recording the presenting problems as well as the medical diagnosis. This information forms part of the logical sequence in which

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undifferentiated symptoms or groups of symptoms are analyzed by primary care physicians in coming to a decision on the steps to be taken even before the medical diagnosis is established. Problem identification and the underlying philosophy mentioned above are the basis of problem orientated medical records (Clark, 1974) now being adopted not just by some *avant-garde* university departments, but by a small but growing number of service general practitioners. There are now more than 20 practices keeping such records in England identified by a recent study (Metcalf, 1976). Since many of these practices are integrated in vocational training schemes, it is expected that the number will continue to grow as the trainees leave to become principals.

Presenting problems have a high prognostic value in clinical terms (Bain and Spaulding, 1967), and the relationship between these and diagnoses have been studied (McFarlane and O'Connell, 1969). They have been found to be correlated with the seriousness of the condition and the individual's perceptions of disease to such an extent that they could be used to predict behavioural patterns, with high precision in three cases out of four (Hulka *et al.*, 1972). This predictive power makes them of great use for studies of demand for medical care and in medical education to enhance medical students' skills in differential diagnoses. In postgraduate education the value of problem identification and problem lists has also been covered extensively by Weed (1968), and is one of the bases of his worldwide crusade for innovations in medical records.

Method

Systems for classifying symptoms and signs have been developed for specific studies, sometimes with the hope that they may be of more general use and eventually adopted internationally. A number of the above authors, and also Hurtado and Greenlick (1971), have developed systems of classification and reported on their use and validity. Only one of the three systems used in our study was prepared exclusively for the classification of problems, but enough emphasis was placed on them in the other two to warrant further analysis, especially as there has recently been much more extensive use of these three systems both in the UK and the US.

The first system, the *International Classification of Health Problems in Primary Care* (ICHPPC), was designed for (a) classifying morbidity information in a primary care setting for statistical purposes, and (b) for indexing outpatient medical records by diagnosis and problems, for data storage and retrieval. In this study, the trial version of September 1974 was used, since the final 1975 edition was not available to us at the time.

The second system of classification has been used by the US National Ambulatory Medical Care Survey (NAMCS, 1974). The coding scheme, prepared exclusively for use in that survey, is described as a

'Methodology for classifying patients' symptoms, complaints, problems and reasons for seeking ambulatory medical care'. It consists of 197 labels divided into 13 different groups.

Thirdly, the Royal College of General Practitioners' classification was designed for the purposes of research in general practice and forms the basis of the recording system inaugurated by the College. We used the modification of the 1963 version employed in the National Morbidity Survey 1970/71 (RCGP and OPCS, 1974).

Procedures in the practices

The data presented were selected from 13,487 patient/doctor contacts, made by 81 randomly selected family doctors in two health districts of Nottinghamshire. The data analyzed refer to the 8,002 contacts in which a presenting problem was mentioned. The doctors recorded information on all patients seen in one week of their own choice during the summer of 1974, and the information presented is part of a comprehensive study of primary care carried out by the Department of Community Health at the University of Nottingham.

Encounter forms were used for each patient/doctor contact, either in the surgery or at home. Presenting problems were defined as: 'Principal problem(s), complaint(s) or symptom(s), that have motivated *this* visit. If more than one, list in order of significance to you'. The doctors were not instructed to record the presenting problem in the patients' own words, but rather to translate, if necessary, the patients' reasons for the visit and list them in their own (the doctors') order of priority. In this we followed McFarlane and Norman (1973), who argue that this method reduces the many irrelevancies that may occur when the patients' complaints are used. We are aware, however, that distortions of information can happen with this approach.

Twenty-seven variables, including provisional diagnosis (also coded with the RCGP classification) and whether the problem presented was 'new' or 'old' to the doctor, were recorded for each patient seen at home or at the surgery. If the patients were referred to other sources of care, additional information was provided.

Coding

The variable, 'principal presenting problem', was then coded using the three classifications mentioned above. The coding was done at different periods by coding clerks specially trained in the use of the systems. All problems were coded first with the RCGP classification, then with the NAMCS, and finally with the ICHPCC. Random checks, one in three patient/doctor contacts, were done by medical practitioners on the coding, and during analysis computer checks were performed on some of the related variables such as provisional diagnosis and sex. All the information was then analyzed by computer and simple cross tabulations were prepared.

Each presenting problem (if there was more than one only the first was considered for this exercise) was classified as either "specific", "general specific", "general", or "other", using the following definitions:

a) *Specific*: If there was a proper label in the classifications for the statement written by the doctor in the encounter forms (for example, vomiting: 303 in the RCGP classification, 184 in the ICHPPC and 572 in the NAMCS).

b) *General specific*: If the presenting problem could be classified within a group of conditions but among the remainders only, for example, as part of the group including diseases of the circulatory system but only as "other symptoms, signs or incompletely diagnosed disease in this group". Two hundred and thirty-seven were recorded in the RCGP (Group 7), either 429 or 459 in the ICHPPC (Group 7), and 216 or 220 in the NAMCS (Group 4).

c) *General*: Presenting problems that could not be located within a group of conditions, but could be classified as "other signs, complaints or symptoms" in general (999 in the ICHPPC, 464 in the RCGP, and 990 in the NAMCS).

d) *Other*: For all statements not considered within the classification systems. None of the three classifications had more than 70 statements of a possible 8,002 (0.9 per cent) attributed to this group.

Results

The results of classifying all "new" and "old" patient/doctor contacts together are given in Table 1, but only the first problem recorded which was the most significant from the doctor's point of view has been taken into account. Tables 2 to 4 refer only to new patient/doctor contacts.

In Table 1, the NAMCS has a greater proportion of problems classified as specific (98.1 per cent) compared with 87 per cent in the ICHPPC and 60.8 per cent in the RCGP, the least specific classification. This last system also had a much greater proportion of problems classified as general (8.4 per cent), whilst in the other two classifications there was practically no need to use this label.

To study the possibility that specificity might change with the patient/doctor contact, 4,083 new patient/doctor contacts were examined. The NAMCS was still the most specific (98.2 per cent) and the RCGP (59.4 per cent) was the least specific classification.

Tables 2, 3, and 4 each deal with patients of different age groups and show which of the three systems was more appropriate for specific age groups. In all three tables the previous ranking is maintained, but the RCGP is the least specific for the age 15 to 64 (54.9 per cent), and the most specific for children (69.4 per cent), while the NAMCS and the ICHPPC both improve as patients' ages increase, and at age 65 and over are 99.1 and 89.1 per cent respectively.

Discussion

It is perhaps not entirely fair to compare a classification like the NAMCS, specifically prepared for the purpose of coding presenting problems, with two other systems whose stated objectives are the classification of morbidity in pathophysiological terms. However, these last two, ICHPPC and RCGP, are probably much more extensively used, especially for the routine collection of data, and it is hoped that the ICHPPC will become a truly international system. In the case of the RCGP classification, clearly the symptoms and signs section is only a compartment wherein to file all undiagnosed conditions, and was never really intended to provide an independent problem classification.

We are also aware of the many possible methodological fallacies of the approach used, not only in terms of interobserver variation and coding errors, but also in the breakdown of the classifications into more or less arbitrary "specific", "general specific", and "general" groups. However, no label was forced into any of these groups, and of course it was the identical statement, as written down by the doctor, that was coded at three different times, without the coding clerks having previous knowledge of the groupings into which the items would be segregated during the analysis. It was also noted that the coding clerks were much more satisfied with the NAMCS classification, which was easier to use (it had fewer labels) and was clearly more appropriate to presenting problems than either of the other two.

Table 1. Classification of presenting problems of new and old patient/doctor contacts (all ages).

Classification criteria	NAMCS		RCGP		ICHPPC	
	Number	%	Number	%	Number	%
Specific	7,847	98.1	4,865	60.8	6,958	87.0
General specific	106	1.3	2,393	29.9	989	12.4
General	3	0.04	674	8.4	—	—
Other	46	0.6	70	0.9	55	0.7
Total	8,002	100.0	8,002	100.0	8,002	100.0

Classification of Health Problems

Table 2. Classification of presenting problems of new patient/doctor contacts (14 years and under).

Classification criteria	NAMCS		RCGP		ICHPPC	
	Number	%	Number	%	Number	%
Specific	1,061	97.2	758	69.4	919	84.2
General specific	29	2.7	263	24.1	171	15.7
General	—	—	67	6.1	—	—
Other	2	0.2	4	0.4	2	0.2
Total	1,092	100.0	1,092	100.0	1,092	100.0

Table 3. Classification of presenting problems of new patient/doctor contacts (15 to 64 years).

Classification criteria	NAMCS		RCGP		ICHPPC	
	Number	%	Number	%	Number	%
Specific	2,486	98.5	1,386	54.9	2,137	84.6
General specific	23	0.9	897	35.5	367	14.5
General	3	0.1	216	8.6	—	—
Other	13	0.5	26	1.0	21	0.8
Total	2,525	100.0	2,525	100.0	2,525	100.0

Table 4. Classification of presenting problems of new patient/doctor contacts (65 years and over).

Classification criteria	NAMCS		RCGP		ICHPPC	
	Number	%	Number	%	Number	%
Specific	462	99.1	282	60.5	415	89.1
General specific	3	0.6	147	31.6	50	10.7
General	—	—	34	7.3	—	—
Other	1	0.2	3	0.6	1	0.2
Total	466	100.0	466	100.0	466	100.0

Even more than medical diagnoses, views expressed by patients as to what is wrong with them may be determined by cultural differences, making the application of an American classification in the UK more difficult, and the development of an international system more complicated. The patterns of medical care, the thresholds of perception of disease, and the expectations and behaviour of patients all change from setting to setting, and the fact that the NAMCS was of use in this country was a surprise to us. There are, in the classification, statements like "time-zone syndrome" or "hives", that clearly are not applicable without translation in the Nottinghamshire area. However, even without using these statements, 98 or 99 per cent of the presenting problems were classifiable with the NAMCS, which probably means that some of the labels could be

omitted, making this system even easier to use, without a significant loss of specificity.

Only the 1974 trial version of the ICHPPC was used, and results may be different with the 1975 final edition. An exploratory comparison, however, of both versions in terms only of Group 16, "physical signs, symptoms, and ill-defined conditions NOS or not yet diagnosed", did not show any appreciable differences.

It is also possible that the sequence of coding first with the RCGP, then at a later date with the NAMCS, and finally with the ICHPPC may have influenced the results, but the three systems, and especially the last two, are in our opinion sufficiently different to make this and the previously mentioned methodological fallacies relatively unimportant (but not necessarily less real).



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No judgement is made, needless to say, about the value of the RCGP classification and the ICHPPC in coding medical diagnosis, nor of the many other and different advantages both systems have. If, however, it is felt that the classification of presenting problems is an important issue, the RCGP system is clearly less than satisfactory and the ICHPPC would benefit from further development.

As a result of our findings we are of the opinion that a combination of the ICHPPC (which has many other advantages, especially for international use) and the NAMCS would probably provide the most valuable tool for further study in this field.

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