Sozial- und Präventivmedizin Médecine sociale et préventive 30, 80 – 87 (1985)

Results of the International Field Trial with the Reason for Encounter Classification

H. Lamberts[1]), S. Meads[2]), M. Wood[3])

1) Dept. of Family Practice, Univ. of Amsterdam, The Netherlands. 2) Nat. Center Health Stat., Washington U.S.A.
3) Dept. of Family Practice, M.C.V., Richmond U.S.A.

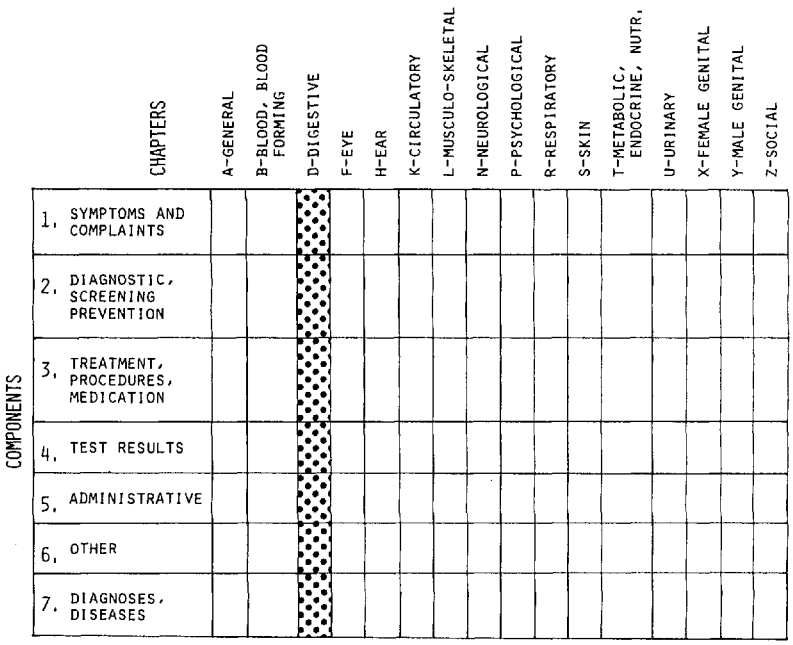
INTRODUCTION

At the 1978 Conference on Primary Health Care in Alma-Ata, adequate primary care was recognized as the key to the goal of "health for all by the year 2000". It was also recognized that the right information is vital to the reassessment of health care priorities and the building of an appropriate primary care system. At that time, no acceptable international classification was available to help provide the necessary data for primary health care. This deficiency prompted WHO to form a working party (list of members at the end of the article) of experts both in primary health care and in classification systems, which met in Geneva in 1978. After several years' work, they have produced a Reason for Encounter Classification (RFEC) in field test form (1,2).

Most classifications are designed to classify the interpretation, by the health care provider, of a patient's illness, disease, or injury. In contrast, the RFEC classifies the reasons for seeking health care from the perspective of the patient, i.e. it is patient-oriented rather than disease or provider-oriented. The reasons for the encounter are those given by the patient before the physician or other health worker makes any judgement as to their validity or accuracy, or before a diagnosis is made (3,4).

The health care provider, by questioning the patient, first elicits the stated reason for contact; only then, as more information is acquired, does he or she define the problem and take the appropriate therapeutic or other action.

Figure 1
The structure of the Reason for Encounter Classification: sixteen chapters with each seven components, illustrated with chapter D (digestive system).



SYMPTOMS AND COMPLAINTS

D10 SYMPT/COMPT, TEETH & GUMS
D11 SYMPT/COMPT, LIPS
D12 SYMPT/COMPT, MOUTH & TONGUE
D13 SYMPT/COMPT, OF SWALLOWING
D14 NAUSEA
D15 VOMITING (EXCL, BLOOD)
D16 HEARTBURN, INDIGESTION
D17 GEN, ABDOMINAL PAIN
D18 LOCALIZED ABD, PAIN
D19 INCR, APPETITE
D20 DECR, APPETITE
D21 GASTRO, INTEST, BLEEDING
D22 FEEDING PROB, INFANT
D23 FLATULENCE (EXCL, GAS PAIN, D18)
D24 CONSTIPATION
D25 DIARRHEA
D26 JAUNDICE
D27 CHANGED ABD, SIZE
D28 FEAR OF DIGEST, DISEASE
D29 OTHER SYMPT/COMPT, DIGEST,

DIAGNOSTIC SCREENING AND PREVENTIVE PROCEDURES

D30 SPEC, EXAM/ROUTINE PHYSICAL
D32 BLOOD TEST
D34 URINE TEST
D35 SENSITIZATION TEST
D36 FECES EXAM/TEST
D37 ENDOSCOPY,PROTO/SIGMOSCOPY
D39 BIOPSY
D40 RADIOLOGY, DIAGNOSTIC
D42 CYTOLOGY
D45 EXPOSURE, INFECT,DISEASE
D46 OTHER DIAGNOSTIC PROCEDURE
D48 OTHER SCREEN, PREV,PROC, HIGH RISK

TREATMENT, PROCEDURE AND MEDICATION

D50 MEDICATIONS
D51 VISIT: PREOPERATIVE
D52 VISIT: POSTOPERATIVE
D53 PHYSICAL MED/REHAB
D54 RADIATION THERAPY
D55 TUBE INSERT/REMOVAL
D56 SURGERY: MINOR
D57 EXT, PROSTHETIC/APPLY/ REMOVE
D58 COUNSELING, MEDICAL
D59 OTHER THERAPEUTIC PROC, NEC

TEST RESULTS

D60 RESULTS: BLOOD TEST
D61 RESULTS: URINE TEST
D62 RESULTS: CYTOLOGY TEST
D63 RESULTS: TISSUE EXAM
D64 RESULTS: RADIOLOGY TEST
D65 RESULTS: OTHER TEST/EXAM

ADMINISTRATIVE

D66 ADMINISTRATIVE

OTHER

D67 OTHER REASON FOR CONTACT,NEC

DIAGNOSES AND DISEASES

D71 INTEST,DIS,PRESUMED INFECTION
D72 HERPES SIMPLEX, MOUTH LIPS NOS
D73 MUMPS
D74 INFECTIOUS HEPATITIS
D75 OXYUR,PINWORMS, OTHER PARAS,
D76 MAL,NEOP,ESOPH,BOWEL,ANUS
D77 MAL,NEOP,OTH,UNSPEC,SITES
D78 BENIGN NEOPLASMS
D79 OTHER NEOPL, SPEC & NOS
D80 FOR,BODY THR,ORIFICE
D81 OTHER INJUR,& ADV,EFF,
D82 CONG,ANOMAL,DIGEST,
D83 DISEASE OF TEETH & GUMS
D84 DIS,MOUTH,TONGUE SALIV,GLAN,
D85 DIS,ESOPHAGUS
D86 DUODENAL ULCER
D87 OTH,PEPTIC ULCER
D88 GASTRITIS, DUODENITIS
D89 APPENDICITIS
D90 INGUINAL HERNIA
D91 HIATUS HERNIA (DIAPH,)
D92 OTHER ABD,HERNIAS
D93 DIVERT,DIS,INTESTINES
D94 IRRIT,BOWEL SYNDROME
D95 CHR,ENTERITIS,ULC,COLITIS
D96 ANAL FISS/PERINAL ABCCESS
D97 CIRRHOSIS/OTHER LIVER DISEASE

* Presented at the International Working Conference of IMIA, Ottowa, 26-28 September 1984.

Table 1
Some quantitative data on the nine field trials

	AUSTRALIA	BARBADOS	BRAZIL	HUNGARY	MALAYSIA	NETHERLANDS	NORWAY	US DOCTORS	US NURSES	TOTAL
TOTAL NUMBER OF ACCEPTED RFE's	10863	2109	16271	12654	9518	15070	11785	4041	8131	90497
NUMBER OF PARTICIPANTS	18	4	23	24	13	8	11	9	22	132
NUMBER OF RFE's PER ENCOUNTER AND STANDARD DEVIATION	1.47 (0.77)	-	1.70 (0.94)	1.50 (0.84)	1.48 (0.75)	1.69 (0.76)	1.61 (0.78)	1.16 (0.48)	1.09 (0.39)	1.36 (0.69)
ILLEGITIMATE CODES	13	1	17	29	17	125	5	6	16	229
NUMBER OF RECORDS TO BE CORRECTED	116	10	57	47	68	0	0	24	48	370

The RFEC is thus guided by three principles:

1) the reason for encounter should be understood and agreed upon between patient and health care provider, and it should be recognised by the patient as an acceptable decision;
2) the rubrics chosen should be as close as possible to the patient's statement of his or her reasons for seeking care - there should be as little interpretation by the provider as possible;
3) the reason for encounter must represent the starting point for action (or a decision not to act) by the health care provider.

THE DESIGN OF THE CLASSIFICATION

RFEC and its successor - ICPC - are designed along two axes: chapters and components (Fig.1). Most chapters cover the body systems; others are non-anatomical and are entitled "general", "psychological", and "social". Infectious diseases, neoplasms, injuries and congenital anomalies do not form separate chapters as they do in the International Classification of Diseases, 9th revision (ICD-9), but rather are represented in the diagnosis/disease component of each chapter (5). Every chapter carries a code-letter which is the first character of all rubrics belonging to it.

Each chapter is subdivided into the same seven components, each identified by a 2-digit numerical code which follows the code-letter for the chapter. There is thus a relatively simple 3-character biaxial classification with seven fixed components, of which five have similar 2-digit codes in all chapters. This is illustrated with chapter D (digestive system) in figure 1.

RELATION TO EXISTING CLASSIFICATIONS (Fig. 2)

The construction of the RFEC was influenced by those of existing major classifications. It provides space for incorporating future systems within its structure. The ICD-9 was the basis for component 7, diagnosis/disease; the ICHPPC-2, a version of the ICD-9 modified for primary health care, translates readily into this component. The category titles found within RFEC component 7 are the same as those in ICHPPC-2 (5,6).

Component 1, symptoms, drew on the existing NAMCS/RFV system that is being used successfully in the USA (7,8).

Components 2 and 3 (diagnostic, screening, prevention and treatment, procedures, medication) contain categories that correspond broadly with those of the ICD-9 Procedures in Medicine and the newly developed NAPCRG-1 Process Code for Primary Health Care (9,10,11).

The psychological and social problems listed in the WHO-sponsored triaxial classification are closely duplicated in RFEC as chapters P and Z (12).

RFEC - and consequently ICPC - is thus a member of the family of ICD-9 compatible classifications and recommended for use in primary care (13).

TESTING OF RFEC

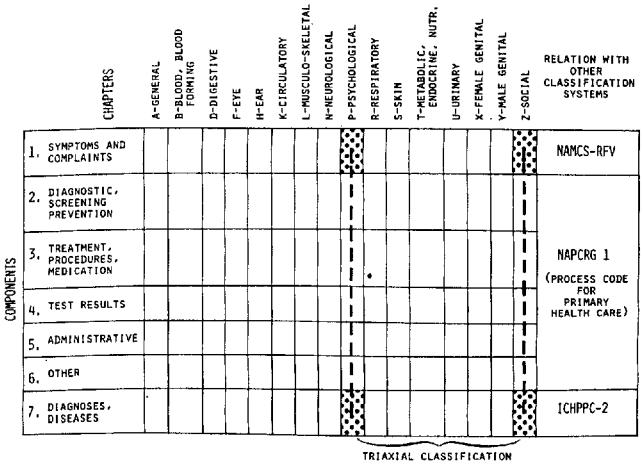
A pilot study was carried out in the Netherlands in 1981 (2). The results obtained prompted further feasibility testing in eight countries: Australia, Barbados, Brazil, Hungary, Malaysia, Netherlands, Norway and USA. This began in January 1983 and continued throughout the summer of 1983. Controlled field trials have been conducted which made it possible to analyse a total of 90497 coded and written reasons for encounter (Table 1) (14).

ICPC is the revised classification based on the analysis both of the codes and of the terms written down by the coding providers.

THE TEST SITES FOR THE INTERNATIONAL FIELD TRIAL

- Australia. Prof. Charles Bridges Webb organized the field trial in and around Sydney. The classification and registration were in English.
- Barbados. Prof. Maurice Wood and Dr. Mike Hoyos organized the field trial (English). It proved to be impossible to collect more than 2100 reasons for encounter.
- Brazil. Ms. Sue Meads and Dr. Ruy Laurenti organized the field trial in and around Sao Paolo in Portuguese. In addition to family physicians, nurses and community health workers participated.

Figure 2
Format of Reason for Encounter Classification. The Chapters and Components form two axes. Relations with other classification systems are indicated.



- Hungary. Dr. Marianne Szatmari and Prof. Henk Lamberts organized the field trial in Budapest. The classification and registration was in Hungarian, the terms were translated into English.
- Malaysia. Dr. Rajakumar organized the field trial in and around Kuala Lumpur. (English)
- Netherlands. Prof. Cees de Geus and Prof. Henk Lamberts organized the field trial in and around Maastricht. The classification was in English and the registration in Dutch.
- Norway. Prof. Bent Bensen organized the field trial in and around Trondheim in Norwegian.
- United States, family physicians. Prof. Maurice Wood organized the field trial in and around Richmond, Virginia. (English)
- United States, nurses. Ms. Sue Meads organized the field trial with nurses in several places in the United States. (English)

FINDINGS

The questions considered in this publication are simple and global:

- what is the distribution of the RFE's over the chapters and components;
- which differences and similarities in patients' RFE's exist between the participating test sites;
- which important clusters of RFE's can be found ?

Table 1 shows that the 132 participants on the nine test sites worked very accurately: only 229 codes were invalid, resulting in a total of 90497 coded RFE's. The nominal minimum of 10,000 observations per country was nearly always attained and the average number of observations per participant exceeded 500 in nearly all cases. There was little disparity in the mean number of RFE's per encounter; only in the US was this mean relatively low: evidently here most of the times only one RFE is classified per encounter.

The distribution over the chapters and components are illustrated with figures 3 and 4, and with table 2.

Table 2 shows that the importance of the RFE's classified in the form of a diagnosis is limited to less than 13 per cent. This component is of particular importance for the chapters B (blood and bloodforming system), F (eye), H (ear), S (skin), T (endocrine system), Y (male genital system) and especially K (circulatory system).

Figure 3
Distribution of 90497 RFE's over the chapters of the Reason for Encounter classification (absolute).

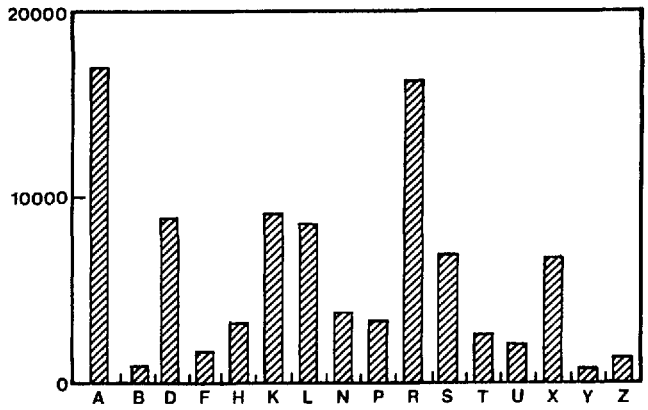


Figure 4
Distribution over the components (percentages).

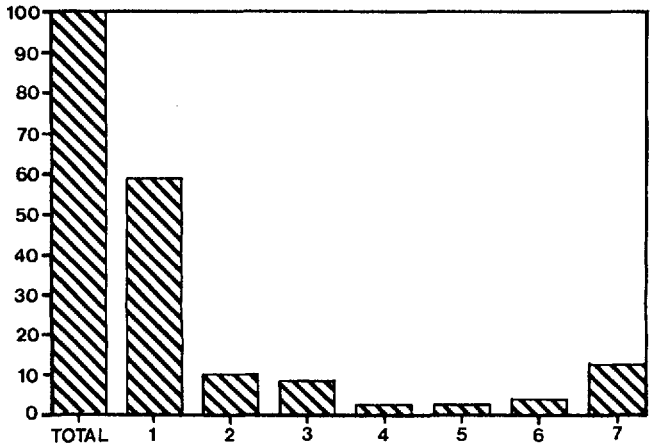


Table 2
Distribution of 90497 RFE's over the chapters and components (percentages per chapter).

COMPONENTS \ CHAPTERS	A-GENERAL	B-BLOOD,BLOOD FORMING	D-DIGESTIVE	F-EYE	H-EAR	K-CIRCULATION	L-MUSCULOSKELETAL	N-NEUROLOGICAL	P-PSYCHOLOGICAL	R-RESPIRATORY	S-SKIN	T-METABOLIC, ENDOCRINE,NUTR.	U-URINARY	X-FEMALE GENITAL	Y-MALE GENITAL	Z-SOCIAL	TOTAL NUMBER	COMPONENT AS PERCENTAGE OF TOTAL
1. SYMPTOMS AND COMPLAINTS	52.8	19.4	77.7	71.4	70.7	24.0	70.7	79.7	66.2	73.4	54.3	17.0	56.5	49.1	60.8	66.9	53376	59.0
2. DIAGNOSTIC, SCREENING, PREVENTION	22.8	17.0	2.7	2.0	6.1	11.7	1.8	1.6	0.9	5.0	1.2	14.4	9.2	32.2	5.4	6.6	9329	10.3
3. TREATMENT, PROCEDURES, MEDICATION	5.2	23.1	4.8	3.8	2.9	18.8	8.6	9.1	25.9	4.1	13.2	22.0	4.7	7.2	13.2	3.9	7938	8.8
4. TEST RESULTS	3.0	22.7	4.7	0.8	0.3	2.2	2.5	0.8	0.5	1.1	0.2	10.3	9.0	2.1	1.3	0.7	2356	2.6
5. ADMINISTRATIVE	8.9	0.7	0.6	4.4	0.5	1.0	2.4	1.3	1.7	0.4	0.7	1.7	0.4	0.8	0.8	9.5	2369	2.6
6. OTHER	4.6	2.0	1.5	1.6	2.3	12.7	2.2	1.4	2.6	2.3	1.9	5.0	4.3	4.5	1.3	12.5	3601	4.0
7. DIAGNOSES,DISEASES	2.7	15.2	8.0	16.1	17.2	29.7	11.8	6.1	2.2	13.6	28.6	29.6	15.9	4.1	17.2	-	11473	12.7
CHAPTER TOTAL (ABSOLUTE NUMBERS)	16805	908	8816	1593	3033	8935	8418	3595	3128	16023	1622	2403	1861	6516	615	1171		
CHAPTER AS PERCENTAGE OF TOTAL	18.6	10.7	9.7	1.8	3.4	9.9	9.3	4.0	3.5	17.7	7.3	2.7	2.1	7.2	0.7	1.3		100

Table 3
Influence of age, sex, place of encounter and provider type on the distribution of 90497 RFE's over the components (percentages per chapter).

COMPONENTS		AGE						SEX	PLACE					PROVIDERS					
	TOTAL	0 - 4	5 - 14	15 - 24	25 - 44	45 - 64	65+	FEMALES	PHYSICIAN'S OFFICE	HEALTH CENTRE	AMBUL. CARE FACILITY	HOME	HOSPITAL	GP/FP	OTHER PHYSICIAN	NURSE PRACTIT.	PHYSICIAN'S ASSISTANT	OTHER NURSE	COMMUNITY HEALTH WORKER
1. SYMPTOMS AND COMPLAINTS	59.0	68.1	70.4	60.6	61.6	52.9	46.2	58.4	59.3	57.3	43.8	59.5	79.0	61.9	53.3	44.2	58.6	26.3	11.2
2. DIAGNOSTIC, SCREENING, PREVENTION	10.3	14.0	7.6	14.0	11.1	7.2	7.9	66.7	7.5	18.0	25.9	5.2	1.8	7.0	5.6	23.8	17.8	46.3	43.2
3. TREATMENT, PROCEDURES, MEDICATION	8.8	1.1	3.2	6.4	7.9	13.7	16.4	60.9	10.8	3.4	6.5	13.9	1.8	9.3	13.9	12.6	2.1	2.8	1.5
4. TEST RESULTS	2.6	2.4	2.5	1.7	2.5	3.2	3.0	59.3	2.5	4.1	2.9	0.9	0.6	2.4	9.0	1.4	7.4	0.2	0.6
5. ADMINISTRATIVE	2.6	0.7	1.3	4.1	3.4	3.0	2.5	52.6	2.9	1.7	5.3	1.1	1.2	2.5	2.9	5.2	2.6	0.3	9.1
6. OTHER	4.0	4.3	1.5	2.4	3.0	5.3	6.1	59.6	3.5	3.8	4.7	6.3	5.8	3.8	5.9	2.5	4.7	2.3	31.9
7. DIAGNOSES, DISEASES	12.7	9.5	13.6	10.7	10.5	14.6	18.0	54.2	13.5	11.7	10.8	13.2	9.8	13.1	9.3	10.3	6.9	21.7	2.5
TOTAL	100	16.4	8.7	12.3	26.2	19.8	16.7	58.9	62.3	18.5	6.5	6.4	5.8	82.6	0.5	5.6	6.3	3.4	0.9

Patients with these health problems evidently complain relatively often in the form of a diagnosis.

Most RFE's take the form of a symptom or complaint (component 1). This is most prominent in chapters D (digestive system), F and H (sense organs), N (nervous system), 1 (musculoskeletal system) and R (respiratory system). Most psychological and social problems (P and Z) are likewise expressed in component 1.

In at least 10 per cent of all cases, patients request a diagnostic of preventive intervention (component 2). This component encompasses especially the general chapter (inoculations) and the female genital system (smears and pregnancy check-ups). In nearly 9 per cent of all cases, patients require a prescription or therapy (component 3). Chapters B (blood), K (circulatory system), P (psychological) and T (endocrine system) are most prominent here.

Apparently people experience health problems such as anaemia, hypertension, insomnia and diabetes often as problems for which they want a prescription.

Table 3 provides information on the influence of age, sex, place of encounter and type of provider on the distribution of the RFE's over the component. Older people present relatively often a diagnosis and they frequently request a prescription. Women have relatively often a reason for encounter with regard to a diagnostic, screening or preventive procedure. Physicians see most of the reasons for encounter in the first and seventh component, other providers relatively often take care of reasons for encounter in component 2.

The differences between countries are illustrated with table 4 which gives an indication of the relative significance of the different RFE's in the participating test sites. It lists the 20 most common RFE's (jointly responsible for 35 per cent of the total information) and also indicates the rank order of the twenty most common RFE's for each test site separately. Cough, fever and a sore throat unmistakably rank first. They are followed by various aspects of hypertension: diagnosis, therapy, repeat encounters for hypertension and "blood pressure problems".

The various preventive and administrative aspects of primary health care rank third, and in countries such as Brazil and Malaysia complaints about the digestive tract rank fairly high. Lower on the list of the 20 most frequent RFE's the picture is more diversified.

CLUSTERS

A cluster is defined as a group of reasons for encounter which is systematically coded at the same time. In order to judge the extent of clustering, Students' t-test was applied. This value is calculated comparing the distribution of RFE's per encounter for a certain RFE with that of all the other RFE's together. A t-value of 2.6 or more indicates a significant difference between the two distributions (p 0.01). For a certain RFE with a high t-value, clustering is considered to exist when one or more other RFE's concur in at least 10 per cent of the encounters. In table 5, clusters found for the most common RFE's in six test sites are presented.

Table 4
The twenty most common RFE's (absolute numbers); the 20 most common RFE's per test site (rank numbers).

Reasons for encounter	Total (abs)	Australia	Barbados	Brazil	Hungary	Malaysia	Netherlands	Norway	US-doctors	US-nurses
1 R17 Cough	4434	2	1	2	6	1	1	1	3	
2 A18 Fever	3633	17	16	1	5	2	3	2	7	
3 R21 S/C throat	2206	3	11	7	7	4	5		2	3
4 K83 Uncompl. hypertension	1834	18	2			15	2	16	4	2
5 A30 Examination	1749		6	3					1	6
6 A66 Administrative	1497		3	14	3			5		5
7 K50 Medication	1391	1			2	8				
8 D16 Diarrhea	1312	13		6	18	3				
9 A45 Preventive immunization/med.	1279	8	8	9						1
10 H10 Earpain, earache	1268	5	17	11			9	7	6	7
11 R15 Head cold nos	1228			4	19			11	11	
12 N10 Headache	1196		14	10		11	8	9	10	
13 N17 Vertigo/dizziness	1124		10		9	7		12	15	
14 K67 Follow up encounter unspec.	1104				1					
15 D11 Localized abdominal pain	1090		15	13		6	10			
16 D15 Vomiting	1087			5		12				
17 K13 Bloodpressure problems	1043		9		4					11
18 A19 General weakness, tiredness	1030		19		10	16	15	6	13	
19 S13 Rash skin nos	1009	7	4			13	7	20	8	19
20 D10 Generalized abdom. pain	836	15				14	13		12	

Table 5
Clustering of RFE's for six test sites. (Barbados is left out because of the small number of RFE's, the US because of the low number of RFE's per encounter)

		Australia	Brazil	Hungary	Malaysia	Netherlands	Norway
1	R17 Cough		A18,R15,	A18	A18	A18	A18
2	A18 Fever		D15,R15,R17	R17,R21	R17	R17	R17,R22
3	R21 S/C Throat		A18	A18,R17	A18,R17	R17	
4	K83 Uncompl. hypertension	K50			T90	K50	K50
5	A30 Examination						
6	A66 Administrative						
7	K50 Medication	K30		K67			K83
8	D16 Diarrhea	D15	A18,D15	A18,D15	A18	D10,D15	
9	A45 Preventive immunization/Med.		A30,A67,Z68				
10	H10 Earpain, Earache		A18,R17				A18
11	R15 Head cold nos		A18,R14,R17	A18,R17		R17	A18,R17
12	N10 Headache		A18,N17	K67,N17	A18,R17		
13	N17 Vertigo/Dizzyness		N10	N10			N10
14	K67 Follow up encounter, unspec.						
15	D11 Localized abdominal pain						
16	D15 Vomiting		A18,D16,R17		A18,D16,R17		
17	K13 Bloodpressure problems		N10		K50		
18	A19 General weakness, Tiredness				A50		
19	S13 Rash skin nos						
20	D10 Generalized abdom. pain		A18		D16		

Thus major clusters were revealed in three problem areas: hypertension, acute respiratory infections and acute gastro-intestinal infections. Cough and fever are often associated with a sore throat and rhinorrhoea. Diarrhoea and vomiting correlate and are often accompanied by fever, and sometimes by coughing. Hypertension, a prescription and measuring blood pressure are likewise associated. Only a few other important clusters could be demonstrated, its interest mostly limited to a single test site. Apparently, clustering is an important phenomenon but its practical implications for the use of RFEC are limited.

DISCUSSION

On the basis of the suggestions of the participants in the field trials and on the basis of the analysis both of the codes and the terms, a final version of the classification, now renamed ICPC, has been completed. The new tool has been developed, but the scope of its use, however, has to be explored in more detail. For this reason, several relevance studies with ICPC are envisaged. ICPC can be used not only to classify reasons for encounter, but also to classify ICHPPC-2-Defined diagnoses, because all the defined rubrics of ICHPPC-2 are incorporated in ICPC.

ICHPPC-2 is a well established diagnostic classification system, not only in its own right, but also when used in conjunction with other classifications. A disease classification differs from one which is based on the patients' reason for encounter. An analysis of the simultaneous use of the reason for encounter and the diagnosis by the doctor with ICHPPC-2 is therefore of interest. During a pilot study in the Netherlands, 6178 RFEC-ICHPPC-2 associations have been analysed in order to describe apparent discrepancies between both (2).

Table 6
Discrepancies between RFEC and ICHPPC-2 (Percentages per component).

Discrepancy	Components						
	1	2	3	4	5-6	7	Total
1. ICHPPC-2 in other chapter than RFEC	8.9	2.0	2.0	3.9	2.2	1.7	6.1
2. ICHPPC-2 implies problem behaviour and RFEC illness behaviour	4.7	1.2	1.4	2.2	6.0	0.6	3.3
3. ICHPPC-2 without intelligible relation with RFEC	0.9	0.5	0.4	0.7	1.5	0.2	0.7
Total (1+2+3)	14.5	3.7	3.8	6.8	9.7	2.5	10.1
All RFEC-ICHPPC-2 associations	3573	591	692	279	133	907	6178

In table 6, three discrepancies are presented:

1) The diagnosis (ICHPPC-2) by the doctor is located in a chapter which evidently differs from the RFEC chapter as indicated by the patient.
2) A specific discrepancy - not included in 1) - exists when the reason for encounter is a somatic one while the physician diagnoses a psychological or a social problem. (problem behaviour)
3) Sometimes no intelligible relation exists between the RFEC and the ICHPPC-2 code (misclassifications ?)

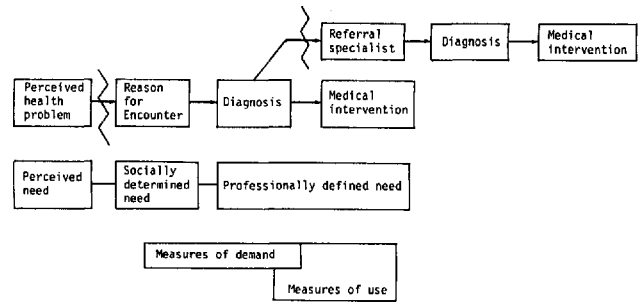
A discrepancy exists for 10.1 per cent of all RFEC-ICHPPC-2 associations; the discrepancy by chapter is the larger one: 9.4 per cent, of which 6.1 per cent is accounted for by "somatic" chapters. The symptoms and the complaints component is the main origin; 14.5 per cent discrepancies. It is remarkable that once the patient describes his reason for encounter with the name of a disease or diagnosis, the percentage of discrepancies is very limited: 2.5 per cent.

Process in primary care is best analysed and interpreted when the diagnosis, which forms the starting point for medical interventions is available (15).

It is very plausible that the availability of the reason for encounter will also enhance a better understanding both of utilization and morbidity data. ICPC can be used not only to classify reasons for encounter and diagnoses but also the main features of process in primary care. Thus it will be possible to use the ICPC to classify three or four elements of problem-oriented registration: (16)

- S: subjective or reason for encounter (RFEC)
- A: assessment or diagnosis (ICHPPC-2-Defined)
- P: plan of interventions in primary care (Process code).

Figure 5
Transition model.



The use of one and the same classification, first to identify patient demand and then to classify the results of the health care providers' interpretation and intervention, could significantly improve the quality of information available concerning the use - and appropriateness - of health care services at the primary level. If this classification is shown to correspond satisfactorily with the frame of reference of specialists, it will also become possible to use it for research into patient care as a whole, from entry into the system up to exit after care at the primary, secondary or tertiary level. Health data correlations that have hitherto not been feasible are now within reach.

A transition model (figure 5) has been developed for this pupose.

Transition is defined as the passage of the patient's health problem throughout time and throughout the different aspects of health care, including all the changes in the state of that problem. ICPC will be used

in a relevance study of this kind, classifying the different stages in the transition from the patient's reason for encounter into a diagnosis and subsequent aspects of process. The nature of the mechanisms determining transition have to be considered with the help of additional information on the patients, the encounter and the provider. To this end, the potential of ICPC to also classify the perceived health problems as recorded in household surveys is to be evaluated.

The application of health status indicators in conjunction with the classification of the several aspects of patients' health problems is of major importance in this context.

Members of the WHO working party of experts

Prof. Maurice Wood (USA), Chairman

Prof. Bent Bensen (Norway)
Prof. Charles Bridges Webb (Australia)
Dr. Karel Kupka (WHO, Geneva)
Prof. Henk Lamberts (Netherlands)
Ms. Sue Meads (NCHS/DHHS), USA
Dr. M.K. Rajakumar (Malaysia)

SUMMARY

The Reason for Encounter Classification (RFEC) was designed by a WHO Working Party to classify the reasons why patients seek care at the primary care level.

It is designed along two axes: Chapters and Components. Each chapter carries an alpha-code which is the first character of the basic 3-character alphanumeric code. Each chapter is subdivided into seven "components" carrying 2-digit numeric codes.

The field trial was undertaken by family physicians and nurses in: Australia, Barbados, Brazil, Hungary, Malaysia, the Netherlands, Norway and the US. 90497 RFE's were analysed. Their distribution over the chapters and components characterize the content of international primary care. Listings with the most common RFE's in the participating countries reflect the cultural differences.

It is concluded that the RFEC is not only feasible to classify reasons why patients seek care but also to classify the diagnosis and the process of primary care. As a result of this, the International Classification of Primary Care (ICPC) succeeds the RFEC.

ZUSAMMENFASSUNG

ERGEBNISSE DER INTERNATIONALEN FELDSTUDIE MIT DER KLASSIFIKATION "GRUENDE FUER DEN ARZTBESUCH"

Das Klassifikationssystem "Gründe für den Arztbesuch" wurde von einer WHO Arbeitsgruppe entwickelt. Es enthält Kapitel und deren Untergruppen (jeweils sieben). Eine Feldstudie wurde in Australien, Barbados, Brasilien, Ungarn, Malaysien und Holland durchgeführt. Auf Grund einer Analyse von 90'497 Arztbesuchsgründen wird der Inhalt der Primärversorgung charakterisiert.

Dieses Klassifikationssystem leistet nicht nur eine Erfassung der Arztbesuchsgründe, sondern auch der Vorgehen und Diagnosen in der Primärversorgung. Es wird deshalb in der Zukunft die "internationale Klassifikation der Primärversorgung (Int. Classification of Primary Care ICPC)" genannt.

RESUME

RESULTATS D'UNE ETUDE INTERNATIONALE SUR LES RAISONS DE RECOURS AUX SOINS DE SANTE

La classification "Reason for Encounter Classification - RFEC" a été développée par un groupe de travail de l'OMS afin de classifier les raisons pour lesquelles les patients ont recours aux soins de santé primaires.

La classification se fait sur deux bases : chapitres et sous-groupes. Chaque chapitre comporte un code alphabétique formé du 1er caractère du code de base (3 caractères alphanumériques). En outre, il est divisé en 7 sous-groupes qui sont identifiés par un code composé de 2 chiffres.

L'étude a été réalisée par des médecins et des infirmières dans les régions suivantes : Australie, Barbados, Brésil, Hongrie, Malaisie, Pays-Bas, Norvège et Etats-Unis. 90'497 RFEC ont été analysés. Leur distribution caractérise le contenu des soins de santé primaires.

On a pu démontrer que cette classification permet non seulement de classer les raisons de recours aux soins de santé primaires, mais aussi les procédures et diagnostics en soins de santé primaires. Par conséquent, dans le futur, cette classification se nommera "Classification Internationale des Soins de Santé Primaires (International Classification of primary Care ICPC)".

REFERENCES

1. Reasons for contact with primary health care services: a model classification. Geneva, 12 September 1980 (unpublished WHO document).
2. Lamberts H, Meads S and Wood M. The Reason for Encounter Classification for use in primary care. A pilot study in the Netherlands. In: Bemmel JH van, Ball MJ and Wigertz O, Eds. Medinfo 83. Proceedings of the Fourth World Conference on Medical Informatics. Amsterdam: North Holland Publishing Company, 1983.
3. Wood M. Family medicine classification systems in evolution. J Fam Pract, 1981,12:199-200.
4. Meads S. The WHO Reason for Encounter Classification. WHO Chronicle, 1983,37:159-62.
5. International Classification of Diseases, 9th Revision. Geneva: World Health Organization, 1977.
6. ICHPPC-2-Defined. Inclusion criteria for the use of the rubrics of the International Classification of Health Problems in Primary Care. Oxford: Oxford University Press, 1983.
7. A Reason for visit classification for ambulatory care. Hyattsville, MD: US Public Health Service, National Center for Health Statistics, 1979 (DHEW Publication No. 79-1352).
8. Patients' reasons for visiting physicians: National Ambulatory Medical Care Services, United States, 1977-78. Data from the National Health Survey. Hyattsville, MD: Series 13, No. 56, 1981 (DHHS Publications NO. 82-1717).
9. International classification of procedures in medicine. Geneva: World Health Organization, 1978.
10. A Process Code for Primary Care (NAPGRC-1). International field trial version. Richmond, VA: North American Primary Care Research Group, 1981.

11. Tindall HL et al. The NAPGRC process classification for primary care. J Fam Pract, 1981,12: 309-318.

12. Wood M. Systematic review of psychological and social factors affecting health. In: Lipkin M Jr and Kupka K, Eds. Psychological factors affecting health. New York: Praeger, 1982: 118-138.

13. Kupka K. International Classification of Diseases: Ninth Revision. WHO Chronicle, 1978,32:219-225.

14. Lamberts H, Meads S and Wood M. Waarom gaat iemand naar de huisarts ? Een internationale studie met de RFEC. Huisarts en Wetenschap, 1984,27:234-244.

15. Lamberts H. Morbidity in general practice. Diagnosis related information from the Monitoring project. Utrecht: Huisartsenpers, 1984.

16. Weed L. Medical Records, Medical Education and Patient Care. The Problem-Oriented Record as a Basic Tool. Cleveland, OH: The Press of Case Western Reserve University, 1969.

APPENDIX

CLASSIFICATION SYSTEMS (other than ICD) FOR CODING HEALTH PROBLEMS

A Reason for Visit Classification for Ambulatory Care (RVC)

This was developed by the American Medical Records Association under the auspices of the National Center for Health Statistics for use in the National Ambulatory Medical Care Survey.

The aim of the classification is to code reasons for visit as perceived by the patient. The physician is requested to record the "Patient's principal problem(s), complaint(s) or symptom(s) this visit in the patient's own words."

The coding system is alphanumeric (one alpha, four numeric), containing seven modules:

symptom
disease
diagnostic, screening and preventive
treatment
injuries and adverse affects
test results
administrative.

The diagnostic, screening and preventive module and the administrative module perform essentially the same function as the ICD-9 V code and the injuries and adverse effects module is similar in concept to the injury and poisoning section of ICD-9.

The treatment module contains procedures and reasons for visit without treatment such as counselling, progress visits and pre-operative and post-operative cases which ICD-9 includes in the V code.

Systematized Nomenclature of Medicine (SNOMED)
College of American Pathologists, 1979.

A multi-axial classification. Six of these axes are relevant to primary care: topography; morphology; etiology; function; disease; and procedures.

There are three separate indexes, morphology, etiology, function and disease which are combined. The other two relate to topography and features.

Many of the items of relevance to primary care are contained in the classification, though frequently more than one code is required to classify quite common terms adequately, e.g.:

Nosebleed = Haemorrhage nose = M 37000, T 21000

Tonsillitis = inflammation tonsil = M 40000, T 61100

Such a system is more complex than a single variable axis classification and it is only with great difficulty that data thus coded may be grouped and displayed according to traditional concepts. The fact that SNOMED is deficient in the classification of certain aspects of well-care and reasons for administrative visits make it unsuitable as a tool in the majority of primary health care settings.

CANDO médical et pharmaceutique (2nd edition)

Classification Alpha-numérique de la Documentation (An Alpha-numeric classification of documentation) by J. Chevalier.

A comprehensive, complex, and highly-sophisticated multi-axial, alphanumeric classification for the storage and retrieval of medical documents.

CANDO classifies a vast range of medically related items in addition to conditions that might be reasons for care. As with all multi-axial classifications, it does not lend itself to presentation of primary health care data.

The John Hopkins Ambulatory Coding Scheme (JHACS)

A coding system or provider recorded problem/diagnostic data. The scheme aims to provide a minimal data set and serve the needs of management, clinicians and health services researchers.

Used in two pre-paid group practice programs and two hospital out-patient departments, the JHACS is based on an encounter form completed by the provider for all patient visits. In addition to normal administrative details and identifying particulars, the form elicits the provider's written statement specifying the patient's conditions addressed at the visit.

There is also provision for the patient's statements of the reason for the visit, though this has only been collected in special studies.

The coding scheme is divided into four major sections:

diagnoses
symptoms
well-person care
therapeutic procedures.

The diagnosis section is divided into 17 organ and disease symptoms, paralleling ICDA. For mental disorders however, the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association was adopted.

Well-person care includes supplementary classifications which divide it into fourteen sub-system categories specifying the type of well-care (including surgical after care). Therapeutic procedures are divided into seventeen organ-specific categories. In all, there are twenty system categories, seventeen for diagnoses and symptoms, well-care, and therapeutic procedures. There are two supplementary categories for uncodable entries and entries that are not coded because they occur too infrequently. The version reviewed contains 984 distinct codes. The scheme seems highly suited to the environment in which it is used and has incorporated what was required from the most suitable classifications available.

Lay Reporting of Health Information
World Health Organization, Geneva, 1978

A detailed list of symptom associations for use by lay and paramedical personnel. For certain symptom associations a possible diagnosis is suggested. Lay reporting was designed for use in estimating causes of unattended

death and would not be suitable for general use in the coding of primary care data.

International Classification of Health Problems in Primary Care - ICHPPC-2

Prepared by the World Health Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA).

An adaptation of the International Classification of Diseases (9th Revision) intended for use in General Medicine and subtitled ICD-9-GM.

This classification is a selection of specific ICD 3-digit categories and 4-digit subcategories that the compilers consider to be of a particular quantitative or qualitative importance in primary health care.

Based on wide practical experience from many countries, the original version was extensively field tested. The amendments and additions contained in the 1979 version were mainly necessitated by the 9th Revision of ICD.

The publication is easily portable and concise with a clear column presentation.

Current Procedural Terminology (CPT)
Published and maintained by the American Medical Association

CPT-4 descriptive terms and identifying codes are currently used widely for reporting reimbursable services. The terminology expresses procedures and services performed by physicians. The axis of the classification tends toward detailed description of the complexity, time and skill involved to perform the service which becomes a basis for remuneration. At the present time, statistical information is not tabulated from CPT-4 data.

The main body of the material is listed in five sections: MEDICINE, ANESTHESIOLOGY, SURGERY, RADIOLOGY (including Nuclear Medicine and Diagnostic Ultrasound), and PATHOLOGY AND LABORATORY. Within each section are subsections with anatomic, procedural, condition, or descriptor subheadings. The procedures and services with their identifying codes are presented in numeric order with one exception - the entire MEDICINE section (90000 series) has been placed at the beginning of the listed procedures. These items are used by most physicians in reporting a significant portion of their services.

For the user's information the section numbers and their sequence are as follows:

MEDICINE (except Anesthesiology)	90000 to 99999
ANESTHESIOLOGY 00100 to 01999,	99100 to 99140
SURGERY	10000 to 69999
RADIOLOGY (including NUCLEAR MEDICINE and DIAGNOSTIC ULTRASOUND)	70000 to 79999
PATHOLOGY AND LABORATORY	80000 to 89999

For example:

> Comprehensive examination or evaluation for an established patient will be found in the MEDICINE section, under the heading Office Medical Services with the code "90080".

For example:

> Closed manipulative treatment of a clavicular fracture will be found in the SURGERY section, under the subsection Musculoskeletal, anatomic heading Shoulder and the subheading "Fracture and/or Dislocation" with the code "23505".

The first and last code numbers and the subsequent name of the items appears at the top of each page (e.g. "20000 - 20250 Musculoskeletal"). The continuous pagination of CPT-4 is found on the lower, outer margin of each page along with the section name.

International Classification of Impairments, Disabilities and Handicaps published for trial purposes by the World Health Organization

The present manual, published under authority of the 29th World Health Assembly, represents a considerable recasting of the detailed proposals submitted to the Ninth Revision Conference. The hierarchical arrangement of the impairment classification has been radically altered so as to allow for taxonomic spaces more closely related to importance and frequency of occurrence; a completely new disability classification has been introduced, resembling in structure the impairment classification; and the handicap classification has been augmented.

Scope and structure of the manual

The manual contains three distinct and independent classifications, each relating to a different plane of experience consequent upon disease.

a) Impairments (I code), concerned with abnormalities of body structure and appearance and with organ or system function, resulting from any cause; in principle, impairments represent disturbances at the organ level.

b) Disabilities (D code), reflecting the consequences of impairment in terms of functional performance and activity by the individual; disabilities thus represent disturbances at the level of the person.

c) Handicaps (H code), concerned with the disadvantages experienced by the individual as a result of impairments and disabilities; handicaps thus reflect interaction with and adaptation to the individual's surroundings.

This classification is being used as a supplement to the basic ICD-9.