entry and the date of the erasure is added.

Once such a register has been completed it is easy to keep up to date and a census of the practice can be worked out in an hour or so.

PROSPECTIVE STUDIES

I

" DISEASE LABELS "

Where a clinical situation is described by a disease label there are two distinct aspects of the description which can be measured. There is first the current knowledge of the aetiology, pathology, and morphology of the disease process or syndrome described or implied by the label. Secondly there is the accuracy with which this label with all its aetiological, pathological, and morphological implications is applied in any given clinical situation. This paper is concerned with an estimate of the current knowledge of the aetiology, pathology, and morphology implied by disease labels in common use.

Method

Members of the Records Unit Working Party of the Research Committee of the College of General Practitioners and others who were known to be interested in the measurement of morbidity were invited to complete a questionnaire carrying a revised Classification of Disease. This is a short list of the *International Classification of Disease* (1957). They were asked to estimate the currently accepted knowledge of the aetiology, pathology, and morphology of each of the disease processes in the College Classification of Disease using the following rating scale. Aetiology, pathology, and morphology are scored separately.

0 = No knowledge of the appropriate aetiology, pathology or morphology;

2 = So far as one can tell in the present state of knowledge, the appropriate aetiology, pathology or morphology is fully or nearly fully established and is implied in the label.

1 = A state somewhere between 0 and 2.

The examples in table I illustrate the application of this rating.

Results

In the analysis the above ratings have been given the arbitrary

values 0, 2 and 1 respectively.

The findings are based on 16 completed questionnaires.

For any disease or group of diseases the higher the average score under column 2 and the lower the average score under column 1 or 0 made by the 16 recorders, the greater is the estimated assessment of the accuracy of the labels in terms of implied aetiology, pathology, or morphology.

The greater the differences between average scores for any assessment (2, 1 or 0) and either of the other two for any disease or groups of diseases, the greater is the indicated agreement among the recorders in their assessments (for example, table II, aetiology and pathology for accidents, poisoning, and violence). Small differences on the other hand indicate the maximum of disagreement among observers (for example, aetiology, diseases of the skin and cellular tissues).

TABLE I

EXAMPLES OF ACCURACY RATINGS BY ONE OBSERVER FOR CERTAIN DISEASES

ICD No.	Disease label	Rating 0, 1 or 2		
		Aetiology	Pathology	Morphology (including site)
420—1	Coronary thrombosis	1	1	2
162	Carcinoma of lung ..	1	2	2
085	Measles	2	2	2

Aetiology and pathology

These are considered separately from morphology for a label will tend to be used either because it is meaningful in terms of aetiology and/or pathology or because it is a good descriptive term for a syndrome where knowledge of aetiology and pathology is deficient.

Table II gives the averages of the ratings of the 16 recorders for aetiology and pathology for all diseases in each of the 17 main sections of the earlier classification excluding section 16 (symptoms senility and ill-defined conditions). Diseases of eyes and ears are kept separate from the diseases classified under central nervous system. Categories which describe a symptom (e.g., pyrexia) rather than a disease entity and " other " categories which are composed of diseases not specifically designated in the revised classification, are omitted.

Most of the main sections or disease groupings of the classification

TABLE II

AVERAGE RATINGS FOR ACCURACY OF IMPLIED AETIOLOGY AND PATHOLOGY
FOR ALL DISEASES IN EACH OF THE 17 MAIN SECTIONS OF THE INTERNATIONAL
CLASSIFICATION OF DISEASE AS ASSESSED BY 16 OBSERVERS

Sections of International Classification of Disease	Rating 0, 1 or 2					
	Aetiology			Pathology		
	0	1	2	0	1	2
1. Communicable diseases ..	1·0	2·7	11·8	0·5	3·4	11·6
2. Neoplasms	6·3	7·7	2·0	0·1	2·0	13·9
3. Disease of allergic origin, metabolic, nutritional and endocrine diseases ..	2·5	8·8	5·1	1·6	6·6	8·3
4. Disease of blood and blood-forming organs ..	2·8	4·0	9·5	1·3	2·0	13·0
5. Mental, psychoneurotic and personality disorders..	8·4	4·8	1·8	9·6	4·8	0·6
6. Diseases of the nervous system and sense organs ..	6·6	7·5	2·0	3·9	7·6	4·6
6. Diseases of the eyes ..	2·2	7·9	4·9	1·1	5·4	9·1
6. Diseases of the ears ..	3·7	7·2	5·1	0·7	5·0	10·0
7. Diseases of the circulatory system	4·3	8·6	2·7	2·3	5·8	7·4
8. Diseases of the respiratory system	1·5	8·5	5·9	0·1	4·8	10·9
9. Diseases of the digestive system	3·3	7·3	1·8	1·3	3·8	7·2
10. Diseases of the genito-urinary system	4·4	7·8	3·5	1·7	5·8	8·1
11. Deliveries and complications of pregnancy, childbirth and the puerperium..	3·6	4·8	5·9	1·2	3·2	9·9
12. Diseases of skin and cellular tissue	4·1	5·3	4·6	1·9	4·3	7·8
13. Diseases of the bones and organs of movement ..	4·8	7·1	3·6	2·2	4·5	8·8
14. Congenital malformations	8·0	6·6	0.4	1·9	2·3	10·9
15. Certain diseases of early infancy	3·9	6·2	4·6	2·0	5·0	7·7
17. Accidents, poisonings, violence	0·8	1·7	13·5	0·5	1·4	14·2

are arranged by anatomical site or system. Two sections, communicable diseases and accidents, poisoning and violence, are separated out for aetiological reasons and it is not surprising therefore that the average accuracy ratings for aetiology and pathology in these two sections are high. Similarly, neoplasms are separated out for pathological reasons and have a high accuracy rating for pathology. The ratings of accuracy for aetiology and pathology for diseases of blood and blood forming organs are moderately high.

The accuracy ratings for pathology alone were moderately high for diseases of the ears, respiratory system, pregnancy and its complications, and congenital abnormalities.

The accuracy ratings for all other main sections indicate no great confidence in the accuracy with which the labels imply aetiology or pathology. The lowest accuracy ratings of all were for mental, psychoneurotic, and personality disorders followed closely by diseases of the central nervous system.

The disease groupings with the highest or lowest values for implied accuracy were also those with maximum agreement of assessment by the 16 participants.

The disease groupings for which there was the greatest inter-observer disagreement in the assessments of accuracy for implied aetiology were pregnancy and its complications, diseases of the skin and cellular structures, bones and organs of movements, and certain diseases of early infancy.

Morphology

If a disease label has little or no implied aetiology or pathology, then it should have strong morphological characteristics to justify its use. By and large this is true but the conditions given the highest accuracy ratings under this heading include communicable diseases, neoplasms, and accidents, poisoning and violence which also had the highest ratings for aetiology and pathology.

Individual categories with unexpectedly low ratings for the accuracy with which they reflect morphology with little variations between observers include, allergic dermatitis, gout, migraine, malignant hypertension, aneurysm, disorders of gastric function, toxaemia of pregnancy, seborrhoeic and occupational dermatitis.

Other categories with low ratings but much disagreement between observers include psychoses and psychoneuroses, sciatica and brachial neuritis and Ménière's disease.

Categories with surprisingly high ratings for morphological accuracy include respiratory diseases, cholecystitis and some skin diseases.

TABLE IH

HEADINGS IN WHICH NO VALUATION RECEIVED OVER 40 PER CENT OF VOTE
(AETIOLOGY)

Heading	Valuation			Not scored
	0	1	2	
Infectious mononucleosis	5	5	5	1
" Other " specified anaemias	4	4	5	4
Organic psychoses	3	6	6	1
Otosclerosis	6	6	4	0
" Other " diseases of ear	4	4	2	6
Phlebitis and thrombophlebitis	5	6	5	0
Pulmonary embolism and infarct	4	5	6	1
Spontaneous pneumothorax	4	6	5	1
Sputum (infected)	5	4	4	3
Hernia of abdominal cavity*	4	4	5	3
" Other " acute urinary infection	5	5	3	3
Salpingitis and oophoritis	5	6	5	0
Placenta praevia ..	5	5	5	1
Ectopic pregnancy	5	6	4	1
Delivery with placenta praevia	4	5	4	3
Seborrhoeic dermatitis ..	5	6	5	0
Pemphigus	4	6	5	1
Flat foot ..	5	6	4	1
Senility	5	5	5	1

*Except femoral and inguinal

Variations in observer assessment

When individual disease categories are considered irrespective of their disease groupings an even more gloomy picture emerges of the meaningfulness of currently used medical nomenclature in terms of implied aetiology and pathology.

In 130 categories (28.3 per cent of the total) none of the three possible valuations (0, 1 or 2) received more than 50 per cent of the votes. In 84 categories (18.3 per cent of the total) all three valuations had less than 50 per cent of the votes and in 19 categories (4.1 per cent of the total) no valuation received more than 40 per cent of the votes (table III).

On the other hand, only 15 per cent of all categories received more than 75 per cent of the votes for any one of the possible valuations of accuracy of implied aetiology, and over half of these categories were communicable diseases or accidents, poisonings or violence. The comparable proportion of the total categories receiving 90 per cent or more of the votes in any one category was 4.8 per cent. All but one of these categories was a communicable disease or accident, poisoning, or violence.

The corresponding proportions for the assessment of the accuracy of implied pathology are similar though 100 per cent of the possible votes were given to one valuation in 4.2 per cent of all categories (table IV). All but one of these were communicable diseases, accidents, poisonings, or violence. Only these labels imply high accuracy of aetiology and pathology.

TABLE IV

HEADINGS IN WHICH 100 PER CENT OF VOTES WERE GIVEN TO ONE VALUATION
(FOR PATHOLOGY)

Section 1	*Section* 17

Whooping cough
Tuberculosis of respiratory
    system
Syphilis infections and
    sequelae
Erysipelas
 	
Femoral and inguinal hernia
	Burns, first degree
	  ,, second degree
	  ,, third degree
	Fracture of skull
	    ,, ,, ribs
	    ,, ,, pelvis
	    ,, ,, clavicle
	    ,, ,, femur
	    ,, ,, lower tibia and/or fibula
	    ,, ,, carpal and tarsal bones
	    ,, ,, phalanges
	Colles fracture
	Dislocation of jaw
	Dislocation of shoulder

Discussion

The above findings should not be unexpected for it has been established that only 55.5 per cent of all illnesses treated by general practitioners can be accurately diagnosed (Records Unit Working Party, C.G.P. 1958). This means that many illnesses must be designated by labels which are little more than symptom-sign complexes, for instance, " headache " or " dyspepsia ". In addition, many terms in the International and the College Classifications of Disease are no more than descriptions, " bronchitis ", " rheumatism ", " hypertension ", " neuralgia ", being examples. Any classification used by general practitioners must contain a large proportion of such terms if only to avoid the spurious accuracy which would result if recorders were restricted to the use of terms which imply an accuracy in terms of aetiology and pathology which the clinical situation they describe will not support. This may be because there is no known aetiology and/or pathology for the disease process being described or if it is known it may be clinically unnecessary or inappropriate to establish the true diagnosis. For instance, to establish the adenovirus causing a severe cold when the patient only needs a certificate for absence from work. As Cohen has said (1943) diagnoses are provisional formulae designed for action.

Summary

An assessment of the current knowledge of the aetiology, pathology, and morphology implied by disease labels from the *International Classification of Disease (I.C.D.)* in common use has been made by 16 recorders.

Aetiology and pathology. Two of the 17 main sections of the *I.C.D.*, communicable diseases and accidents, poisoning and violence classified for aetiological reasons have, not unexpectedly, high average ratings for accuracy of implied aetiology. Similarly neoplasms classified on pathological grounds have high average accuracy ratings for implied pathology. The ratings of accuracy for aetiology and pathology for diseases of blood and blood forming organs are moderately high.

The average ratings for all other main sections indicate no great confidence in the accuracy with which the labels imply aetiology or pathology. The lowest accuracy ratings of all were for mental, psychoneurotic, and personality disorders followed closely by diseases of the central nervous sytem.

The disease groupings with the highest or lowest values for implied accuracy were also those with maximum agreement of assessment by the 16 participants.

Morphology. If a disease label has little or no implied aetiology

or pathology, then it should have strong morphological character-
istics to justify its use. By and large this is true but the conditions
given the highest ratings for implied accuracy under this heading
include communicable diseases, neoplasms, and accidents, poisoning
and violence which also had the highest ratings of implied accuracy
for aetiology and pathology.

Variations in observer assessment. When the individual disease
categories are considered irrespective of their disease groupings
an even more gloomy picture emerges of the meaningfulness of
currently used medical nomenclature in terms of implied aetiology
and pathology.

A duplicated copy of the complete consolidated ratings from the
16 observers for all disease categories can be obtained on application
to the Director, College Records Unit.

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II

A CLASSIFICATION OF DISEASE

In 1959 the Research Committee published a Classification of
Disease designed for use by the Records and Statistical Unit but
suitable also for any type of general-practice morbidity recording.
This was a hierarchical classification in four levels, the fourth
being the full *International Classification of Disease (I.C.D.)*, and
all levels devised so that they would be relatable to the *I.C.D.* The
full benefits of the hierarchical system were only obtained by using
a special numbering system and although relatable to the *I.C.D.* this
has received criticism on the grounds of the complexity of this
process.

The inclusion of a diagnostic term in the previous classification
was based on various factors; firstly and most important the relative