ACCURACY OF SCOTTISH HOSPITAL MORBIDITY DATA

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Since 1961 the Scottish Home and Health Department has collected and processed morbidity information relating to all non-obstetric and non-psychiatric discharges from National Health Service hospitals in Scotland. The information is used for planning, administrative, and epidemiological purposes and it is therefore essential that its reliability is assessed. The present study was carried out to obtain factual information relating to the accuracy of the data collected, no previous studies having been undertaken in Scotland to evaluate the national hospital morbidity information.

Morbidity information concerning each hospital discharge is recorded on the form S.M.R.1, usually by hospital medical records staff. This basic data collection sheet, the checking and elimination of errors, and the uses to which the data are put have been fully described by Heasman (1968). These data are the basis of the Scottish Hospital In-patient Statistics published annually, the unpublished tabulations sent to all hospitals and to regional hospital boards, the individual hospital diagnostic and operation indexes, and the recently introduced Scottish Consultants Review of In-patient Statistics.

Each form received in the central department is scanned for obvious errors and omissions and is then subjected to a computer data vetting and feasibility check. These checks attempt to ensure that as many inconsistencies as possible are detected, and enable any necessary corrections to be made before final acceptance. It is, however, possible for errors to remain undetected if the information, although inaccurate, is neither infeasible nor inadmissible.

The present paper reports on the accuracy of the information received for processing in the year 1969. Errors in transcription and coding of the information recorded in the patient's medical case record are described, and an attempt is made to assess the relative importance of the levels of error found.

METHOD

In deriving the sample, it was necessary to restrict the survey to hospitals of one hundred or more beds in order to obtain for each individual hospital a sample

sufficiently large to justify a visit. The latest available figures (for 1968) suggest that these hospitals account for 85% of the total discharges in Scotland.

From the 90 hospitals of 100 or more beds in Scotland a simple random sample of 38 hospitals was drawn and permission to carry out the survey was obtained from each. The total number of forms examined represented 0.5% of the expected discharges in Scotland during 1969, the sample size in each hospital being a uniform sampling fraction of the total forms.

For each individual hospital a systematic sample of forms was taken, representative of all specialties within the hospital and covering a period of not less than three months in the year.

The information recorded on each form S.M.R.1 was compared with that recorded in the patient's medical case record. The identifying and administrative information relating to each patient was checked by a departmental clerk from the Scottish Home and Health Department; the clinical information was checked by the author.

In addition to the present report, individual reports have been issued to each hospital participating in the study. It is hoped that these may be of value in further reducing individual hospital errors.

RESULTS

A total of 2,515 forms were checked in the 38 hospitals in the survey. Each form should have contained a minimum of 16 items of information for checking, and a possible maximum of 22 items. Of the 2,515 forms, 1,341 (55.3%) were considered entirely correct, 1,055 (42.0%) contained one or more errors, and 119 (4.7%) contained some item of information that could not be checked from the clinical record. The number of forms in error is of much less significance than the nature of the errors, and the types of error will be discussed according to whether they occurred in the identifying, administrative, or clinical information.

IDENTIFYING INFORMATION AND PERSONAL DATA RELATING TO PATIENT

Table I shows for each item in this section the number and percentage of entries correct, in error, omitted from the form S.M.R.1 or ambiguous. The term ambiguous is used if the item recorded on the S.M.R.1 was not recorded in the patient's

TABLE I
IDENTIFYING INFORMATION AND PERSONAL DATA RELATING TO PATIENT

Item	Transcription Correct		Transcription Incorrect		Item Wholly or Partially Omitted from S.M.R.1		Ambiguous	
	No.	%	No.	%	No.	%	No.	%
Hospital code no.	2,514	99.96	1	0.04	0	0.00	0	0.00
Case reference no.	2,508	99.72	5	0.20	2	0.08	0	0.00
Surname	2,504	99.56	11	0.44	0	0.00	0	0.00
Initials	2,490	99.01	23	0.91	2	0.08	0	0.00
Date of birth	2,421	96.26	69	2.74	25	1.00	0	0.00
Sex	2,499	99.36	16	0.64	0	0.00	0	0.00
Marital status	2,461	97.85	46	1.83	8	0.32	0	0.00
Occupation	2,103	83.62	112	4.45	257	10.22	43	1.71
Area of residence	2,384	94.79	131	5.21	0	0.00	0	0.00
Total	21,884	96.68	414	1.83	294	1.30	43	0.19

notes or could not be verified from other available sources. The total number for each item in this section was 2,515, the same as the number of forms examined.

There was a total of 22,635 items capable of being recorded in the forms S.M.R.1 of which 21,884 (96.7%) were correct, 414 (1.8%) were incorrect, 294 (1.3%) were omitted, and 43 (0.2%) could not be checked. The majority of the errors and omissions were in the recording of the patient's occupation and in area of residence coding. The error level for the separate items in this section is discussed below, and the possible effects on the published and unpublished statistics are also examined.

NAME, DATE OF BIRTH, AND SEX. Errors in these items were few in number. The errors are important at present only in *ad hoc* studies requiring case listing but will assume greater importance when used for medical record linkage purposes, which will be introduced in the near future.

There were 16 (0.6%) errors in recording sex, three females being coded as males and 13 males coded as females. These errors would have been detected by computer verification only if the recorded diagnosis was inadmissible for the sex. In 2,421 (96.3%) forms the date of birth recorded was correct, 69 (2.7%) were incorrectly transcribed, and the date of birth was omitted from the form in 25 (1.0%). The 25 omissions of date of birth included five where it was omitted entirely and 20 where either the day or month of birth was missing.

For the purposes of relating errors in year of birth to published and unpublished statistics, the important errors are those of omission and transcription of the year of birth, data being processed into seven major age groups. The five total omissions of the year of birth would cause the form to be rejected by the computer and the hospital to be asked to state as accurately as possible the age of the patient.

There were 29 errors in transcription of the year of birth, all of which might have been acceptable providing the diagnosis was not infeasible for the age group; the remaining errors related only to the day or month. The resulting maximum number of errors in the published and unpublished statistics would then have been 29 (1.2%). These errors were randomly distributed throughout the age groups.

MARITAL STATUS. There were 54 (2.1%) errors and omissions of marital status. Of these, 46 (1.8%) were coding errors and eight (0.3%) omissions. The latter group included seven in which the marital status was unknown and one in which it was not recorded on the S.M.R.1. Although the items omitted would be rejected by the computer, the 46 errors in marital status would probably not be detected. Distributed according to marital status these 46 errors resulted in an error rate of 1.3% for single persons (12 errors in 953 persons), 1.7% for married persons (22 errors in 1,292 persons), and 4.6% (12 errors in 252 persons) for widowed, divorced, and separated persons.

OCCUPATION. There were 257 (10.2%) forms in which no occupation was recorded and on 112 (4.5%) forms the occupation entered was incorrect. Occupational information is required primarily in order to allocate the patient to his correct social class (General Register Office, 1966). For this purpose the appropriate occupation in the case of a married woman, a widow, or a separated woman is that of the husband. In the case of a child the appropriate occupation is that of the male parent or guardian.

The 112 errors in recording the occupation included 25 coding errors, the appropriate occupation having been correctly transcribed on to the form. Most of these coding errors were made in the central department, only three of the hospitals in the survey undertaking coding of occupation infor-

mation abstracted on to the form. The remaining 87 errors involved the recording of an occupation, which was not the patient's current occupation, or more usually was inappropriate for social class purposes.

One difficulty encountered in the study was that a child did not seem to be adequately defined. The age of majority is now 18 years, and all persons below this age for the purposes of the study were considered to be children. The occupation required for employed persons in this group should then be that of the parent or guardian for social class purposes. A clear directive is needed for the hospitals as to which occupation should be recorded for employed persons aged 15 to 18 years.

Table II shows for each civil state the number of errors and omissions in the recording of information relating to occupation. The term ambiguous is used to denote that the information recorded on the form S.M.R.1 could not be checked, being unrecorded in the medical case record. It can be seen from the table that whereas the overall percentage of errors and omissions was 14.7%, it was less than the average for males and single females, being very low for employed males. The rates for children and married women were above the average, and a very high rate was observed for widows and divorced and separated women.

As the appropriate occupation was recorded entirely correctly in 2,103 (83.6%) forms, the social class would be correct in the same number, social class being derived automatically by the computer from the occupation code. In the 112 forms where the occupation was incorrect, 90 (3.6%) of the errors affected the social class, the remaining 22 errors causing no social class displacement. No social class would have been allocated in the 257 omissions of the occupation, and in the remaining 43 it was not possible to check the social class assigned.

The present study shows that the recording of appropriate occupation (and hence the correct social class) was closely related to both the sex and

the patient's civil state. A previous study by Carstairs and Patterson (1966) showed that the omission of social class was a function of both the age and sex of the patient. The present study gives a similar result, the proportion of omissions for adults increasing with age; the percentage of omissions in the age group 0-14 years was 12.7%, 15-44 years 8.2%, 45-64 years 8.9%, 65-74 years 17.8%, and over 75 years 24.4%.

AREA OF RESIDENCE. There were 131 (5.2%) errors in recording the area of residence; 12 (0.5%) were errors in coding the city or borough, 3 (0.1%) occurred in coding residence within or without the city boundary, and 116 (4.6%) were errors in the municipal ward or rural parish.

None of these errors would be detected by the computer, but only errors in the city or borough would be likely to affect published or unpublished statistics. Errors in the ward or parish would affect only those *ad hoc* studies relating to area of residence.

Difficulties in coding the area of residence have been fully described by Gruer (1970). The present system of coding involves the use of a census book of place names in Scotland (General Register Office, 1967) for coding rural parishes, and the use of a postal directory for coding municipal wards, in addition to the instructions issued by the department. In the present survey the proportion of errors identified for rural parishes and municipal wards was 4.6%. This was considerably less than that found by Gruer when studying a single hospital admitting patients from both a city and a surrounding rural area. That study used a much more elaborate means of checking the rural parishes and municipal wards, including the use of one-inch ordnance survey maps and county and valuation rolls. The error levels found by Gruer were 27% for rural parishes and 19% for municipal wards.

The present system of recording the area of residence is recognized to be cumbersome and suffers

TABLE II
ERRORS AND OMISSIONS IN OCCUPATION INFORMATION ACCORDING TO CIVIL STATE

Social Status	Correct		Incorrect		Omitted S.M.R.1		Ambiguous		Total No. in Sample
	No.	%	No.	%	No.	%	No.	%	
Employed male	731	96.8	8	1.1	15	2.0	1	0.1	755
Retired male	180	85.3	3	1.4	25	11.8	3	1.4	211
Child	458	79.7	41	7.1	67	11.6	9	1.6	575
Single female	158	90.8	3	1.7	13	7.5	0	0.0	174
Married female	479	76.3	37	5.9	88	14.0	24	3.8	628
Widow/divorced/separated female	97	57.4	20	11.8	47	27.8	5	3.0	169
Social status unknown	0	—	0	—	2	—	1	—	3
Total	2,103	83.6	112	4.5	257	10.2	43	1.7	2,515

TABLE III
ADMINISTRATIVE INFORMATION

Item	No. of Items	Correct		Incorrect		Omitted S.M.R.1		Ambiguous	
		No.	%	No.	%	No.	%	No.	%
Date on waiting list	1,074	915	85.20	20	1.86	20	1.86	119	11.08
Date of admission	2,515	2,473	98.33	41	1.63	0	0.00	1	0.04
Source of admission	2,515	2,439	96.98	76	3.02	0	0.00	0	0.00
Date of discharge	2,515	2,425	96.42	90	3.58	0	0.00	0	0.00
Discharge code	2,515	2,500	99.40	15	0.60	0	0.00	0	0.00
Specialty on discharge	2,515	2,482	98.69	33	1.31	0	0.00	0	0.00
Consultant on discharge	2,515	2,285	90.85	161	6.40	0	0.00	69	2.74
Date of operation	1,295	1,198	92.51	36	2.78	61	4.71	0	0.00
Total	17,459	16,717	95.75	472	2.70	81	0.46	189	1.08

from several defects, but there is at present no acceptable alternative. It is likely that the new General Post Office postal code system will provide an effective substitute when it has been applied to the whole country.

ADMINISTRATIVE INFORMATION

Table III shows the items of information included under this heading and indicates the number and percentage of errors for each item. In this section, the total number of items capable of being recorded on the forms was 17,459, of which 16,717 (95.8%) were correct, 472 (2.7%) were incorrect, 81 (0.5%) were omitted, and 189 (1.1%) could not be checked.

DATE ON WAITING LIST. There were 1,074 patients admitted from the waiting list, and in 20 of these the waiting list date recorded on the form S.M.R.1 was incorrectly transcribed. There were 20 omissions of the waiting list date, usually occurring in conjunction with a mistake in the source of admission. In this section 119 (11.1%) of the waiting list dates stated on the form could not be checked, the commonest reason for this being that a separate waiting list was kept and was destroyed once the patient had been admitted to hospital. Computer verification would be unlikely to pick out these errors, and the omissions would be found only if the source of admission stated was infeasible for the particular diagnosis of the patient.

Twelve of the 20 errors were of less than one week and all tended to be self-cancelling, so that it is unlikely that published and unpublished tabulations relating to the length of time on the waiting list would be in any way affected.

DATE OF ADMISSION AND DATE OF DISCHARGE. There were 41 (1.6%) errors in the date of admission and 90 (3.6%) in the date of discharge. However, 38 of the errors in the date of admission and 87 errors in the date of discharge were less than one week out.

As with the other items so far discussed, these would be subject to computer verification, but many of the errors, being less than one week wrong, would probably escape detection unless other dates, for example that of operation, made either unacceptable. The errors tended to be self-cancelling, and it is unlikely that national tables dealing with the mean duration of stay derived from these items would be affected to any appreciable extent.

SOURCE OF ADMISSION. There were 76 (3.0%) errors in the source of admission. Distributed according to the nine sources of admission the percentage error in each was as follows:

Emergency—road traffic accident	0% (49 forms)
Emergency—home accident	0% (22 forms)
Emergency—self-inflicted injury or poisoning	6.5% (2 errors in 31 forms)
Emergency—other poisoning	11.1% (1 error in 9 forms)
Emergency—not injury or poisoning	2.4% (24 errors in 1,000 forms)
Admission from waiting list or booked case	3.7% (41 errors in 1,118 forms)
Transfer within the same hospital	2.9% (1 error in 34 forms)
Transfer of baby from maternity nursery	12.5% (2 errors in 16 forms)
Transfer from other hospitals	5% (5 errors in 101 forms)

Most of the errors would be undetected by computer verification as only a small proportion would have a source of admission infeasible with the diagnosis.

SPECIALTY ON DISCHARGE. There were 33 (1.3%) errors in the recording of the specialty on discharge. The specialty is important, as several of the published and unpublished tables list diagnosis information by

specialty. The errors were in general distributed randomly throughout the 34 specialties with the exception of dental surgery which had 21 forms in the sample, five of which were incorrectly ascribed. This was generally due to the fact that many consultant dental surgeons do not have designated beds, the specialty recorded being that normally using the beds in which the patients were treated.

CONSULTANT ON DISCHARGE. Of the consultant codes recorded 161 (6.4%) were incorrect according to the rules laid down by the Scottish Home and Health Department (1967). The Department has asked that the code number of the consultant in charge of the case be recorded. This allows each consultant to receive information relating to his own patients in the Scottish Consultant Review of In-patients Statistics but does not preclude amalgamation of these data into unit or divisional results. Several units were found to use the code number of only one of the consultants, which means that data could never be supplied to an individual consultant should he desire this for any particular purpose.

In 69 (2.7%) forms the consultant code recorded could not be checked as there was no mention in the clinical notes of the consultant in charge of the case.

The errors in the consultant code would not be detected by the computer unless the consultant code recorded was unallocated. The errors in recording the consultant code in no way affect published and unpublished tables but affect the hospital disease indexes and individual consultant data.

DATE OF FIRST OPERATION. There were 36 (2.8%) errors and 61 (4.7%) omissions in the date of operation; the latter occurred in association with the omission of the operation and so would be undetected. The majority of the errors were small, 23 of the 36 errors being errors of only one day, and they would be unlikely to be detected by computer verification unless other dates, for example the date of admission or discharge, made them infeasible.

DIAGNOSIS AND OPERATION INFORMATION

The form S.M.R.1 allows for up to three diagnoses and two operations for each discharge, the principal diagnosis and operation being entered in the first position, and it is from this that the statistical tables are produced.

Diagnoses are coded using the four-digit I.C.D. number (W.H.O., 1967), and operations are coded using a three-digit G.R.O. number (General Register Office, 1956). For published and most unpublished tables these are amalgamated into a short

TABLE IV
ERRORS AND OMISSIONS IN PRINCIPAL DIAGNOSIS

	No.	%
Principal diagnosis correct	2,358	93.76
Principal diagnosis incorrect		
Coding error	44	1.75
Misplacement	38	1.51
Omission	75	2.98
Total	2,515	100.00

list of 100 diagnostic groups and 88 operation groups. The hospital diagnostic indexes and *ad hoc* requests are, however, produced by I.C.D. number and operation indexes by G.R.O. number. It is therefore, necessary to examine the effect of errors both by short list, I.C.D., and G.R.O. groupings.

PRINCIPAL DIAGNOSIS. Table IV lists the number of errors and omissions in the principal diagnosis. In 2,358 (93.8%) the principal diagnosis was considered to have been transcribed and coded correctly. There were 44 (1.8%) forms in which transcription was correct but the principal diagnosis had been wrongly coded. In 38 (1.5%) the principal diagnosis had not been entered in the first position and had been relegated either to the second or third position. In 74 forms (2.9%) the principal diagnosis was entirely omitted, and in one no diagnosis was entered on the form. There was no form in which both misplacement and a coding error occurred together.

Omitting the one form in which no diagnosis was recorded (this record would have been rejected by the computer), there were 156 forms in which the diagnosis code entered in the first position was incorrect. These incorrect entries would have affected published and unpublished tables produced by the short list category on 148 occasions (5.9%). In the remaining eight, although the diagnosis code recorded in the first position was incorrect, it belonged to the same short list category as the true diagnosis. The errors in allocation of the principal diagnosis to the correct category were randomly distributed throughout each category, and showed no marked association with any particular specialty, age group, or sex.

Hospital disease indexes, the national disease index, and occasional *ad hoc* requests are all produced by fourth digit I.C.D. code; the error and omission level in these data would then be 6.2% (156 errors and omissions in 2,515 forms).

SECOND AND THIRD POSITION DIAGNOSES. In 616 of the total forms it was considered that second diagnosis should have been entered. Of these, 408 (66.2%) were correctly transcribed and

TABLE V
ERRORS AND OMISSIONS IN SECOND AND THIRD
POSITION DIAGNOSES

	Second Diagnosis		Third Diagnosis	
	No.	%	No.	%
Diagnosis correct	408	66.23	90	61.22
Diagnosis incorrect				
Coding error	1	0.16	1	0.68
Misplacement (to position 1)	35	5.68	3	2.04
Omission	164	26.62	48	32.66
Inappropriate entry	8	1.31	5	3.40
Total	616	100.00	147	100.00

coded, 208 (33.9%) being incorrect. Table V shows the numbers and types of error in the second diagnosis. The eight forms containing an inappropriate diagnosis were forms in which, although a second diagnosis was required, the recorded diagnosis was not that which should have been recorded. In addition to these errors, and not shown in the table, there were six entries in the second position which were considered to be superfluous entries. These superfluous entries, together with the eight inappropriate entries, almost invariably represented the provisional admission diagnosis, being recorded in addition to the true discharge diagnosis.

Table V also shows the number of errors in the third position diagnosis. It was considered that three diagnoses should have been recorded on 147 forms. These were correctly transcribed and coded in 90 (61.2%) and were incorrect in 57 (38.8%).

Most of the errors, 48 (32.7%), were again due to the omission of the third diagnosis. There were no additional entries in the third position. As published, unpublished, and individual consultant tables are based on the principal diagnosis only, they would not have been affected by errors in this section. Second and third diagnoses are recorded for the purpose of producing diagnostic indexes and to allow *ad hoc* study of, for instance, associated conditions. There were 156 errors and omissions in the first diagnosis, 208 in the second diagnosis, and 57 in the third diagnosis. The total number of diagnoses which should have been recorded was 3,378. The maximum level of errors and omissions in the diagnostic indexes would then be 12.1%.

It has been suggested to the central department that for *ad hoc* study purposes allowance for more than three diagnoses is necessary. In the present study, however, only 21 of the 2,515 medical records examined listed more than three diagnoses.

PRINCIPAL OPERATION. There were 1,294 forms in which it was considered that at least one operation should have been entered. The principal operation

TABLE VI
ERRORS AND OMISSIONS IN OPERATION INFORMATION

	Principal Operation		Second Position Operation	
	No.	%	No.	%
Operation correct	1,161	89.72	196	75.10
Operation incorrect				
Coding error	13	1.01	2	0.77
Misplacement	36	2.78	36	13.79
Omission	74	5.72	27	10.34
Inappropriate entry	10	0.77	0	0.00
Total	1,294	100.00	261	100.00

was correctly transcribed and coded on 1,161 (89.7%). There were 13 (1.0%) forms in which the principal operation had been incorrectly coded, and in 36 (2.8%) it was relegated to the second position. The most frequent fault, which occurred 74 (5.7%) times, was omission of the principal operation. There were 10 forms containing an inappropriate entry; in these, although an operation was required, the recorded operation was not that which should have been entered. These results are summarized in Table VI. In addition to the errors shown in the table there was one instance of a superfluous entry on the form, the operation quoted referring to an earlier admission to hospital.

The 74 omissions of the principal operation would remain undetected by the computer and so be lost to published and unpublished statistics. Examination of the omissions by specialty shows that the percentage of omissions of the principal operation varied within the specialties. For general surgery it was 2.4% (15 omissions in 630 operations). In urology the omission rate was 11.1% (8 omissions in 72 operations), in orthopaedic surgery 6.9% (15 omissions in 218 operations), and in dermatology 10.7% (3 omissions in 28 operations). Most of the omissions for urology were due to the omission of cystoscopies when the patient had been admitted for this procedure only. The most frequent omission in orthopaedic surgery was manipulation of a fracture, and in dermatology it was skin biopsy.

The 59 errors due to coding, misplacement, and recording of an inappropriate operation would have affected the published and unpublished tables on 45 occasions. In 14 there was no displacement of the true principal operation from its correct short list group, although the operation code recorded as the principal was incorrect. The errors were randomly distributed throughout the various short list groups and showed no association with any particular specialty, age group, or sex. The overall error and omission level for the principal

operation produced by short list group was 9.2% (45 errors plus 74 omissions).

For the operation indexes and *ad hoc* requests produced by G.R.O. number the overall level of errors and omissions was 10.3% (59 errors plus 74 omissions).

SECOND POSITION OPERATION. In 261 of the total forms it was considered that a second operation should have been entered. Of these, 196 (75.1%) were correctly transcribed and coded and 65 (24.9%) were incorrect. Table VI shows the numbers and types of error in the second operation, the majority being either omissions or misplacements. There were no inappropriate operations entered in the second position and no additional entries.

As the published and unpublished tables are based only on the principal operation, they would not have been affected by errors in this section. The second position operation is recorded in the operation indexes and these would be affected by the errors. It has been shown that there were 133 errors and omissions in the principal operation and 65 in the second operation. The total number of operations that should have been recorded was 1,555. The overall level of errors and omissions in the operation indexes was found to be 12.7%. Of the 2,515 medical records examined, there were only 13 in which more than two operations were recorded.

DISCUSSION

The study has attempted to assess the likely maximum level of errors and omissions in hospital morbidity data due to errors in transcription and coding of information contained in patients' medical case records. It has, therefore, described only one of the possible sources of error, no attempt being made to check that the information in the case records was itself entirely correct. In some instances where the information relating to the diagnoses and operations was not clearly recorded it was necessary for the author to allocate a diagnosis or symptom complex using such information as was available. This in general did not present any great difficulty, but the same may not necessarily be true for the medical records staff, who at the best have only limited medical knowledge. It was because of this that the Committee on Hospital Medical Records in Scotland (Scottish Home and Health Department, 1967) recommended that the consultant in administrative charge should be responsible for ensuring the accuracy and completeness of the Hospital Inpatient Record Summary Sheet (form S.M.R.1).

The error and omission level in identification and administrative information due to transcription

faults has been shown to be small with the exception of information relating to social class. National data relating to the principal diagnosis have been shown to be correctly transcribed from 94% of the records examined, and data relating to the principal operation were approximately 90% accurate. Information about subsidiary diagnoses and operations was found to be much less accurate due largely to omissions in the information, and there is little doubt that this was due mainly to medical records clerks being unable to pick out the salient facts in those records which were poorly structured. Where the information necessary was available to the medical records clerk it was transcribed and coded well, most of the errors and omissions in the clinical data being due to the clerk not knowing what information she should be recording.

SUMMARY

A study into the accuracy of transcription of hospital morbidity data was undertaken in 36 hospitals throughout Scotland. Information contained in 2,515 morbidity returns was compared with the information recorded in the hospital medical case records. Errors and omissions in the transcription and coding of the hospital case reference number and the patient's name and sex, were each less than 1%, but errors and omissions in the date of birth were 3.7%, and in occupation 14.7%. Items of administrative importance relating to duration of stay and time spent on the waiting list were shown to contain errors of only minor significance despite errors and omission levels of up to 3% for individual items. Data relating to the principal diagnosis were correctly transcribed and coded in 94% of the forms examined, and information relating to the principal operation was correct in 90%. The greatest error and omission levels were found for information relating to subsidiary diagnoses, which were shown to be recorded accurately in only two-thirds of relevant cases, and a second operation was transcribed correctly for only 75% of relevant cases.

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