

QUALITY OF CODING OF DISEASES AND MEDICAL PROCEDURES AT KENYATTA NATIONAL HOSPITAL, NAIROBI COUNTY, KENYA

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Abstract

Objective: To find out the quality of coding of diseases and medical procedures at Kenyatta National Hospital (KNH), Nairobi, Kenya.

Design: Cross-sectional descriptive study.

Setting: Kenyatta National Hospital, Nairobi, Kenya.

Subjects: One hundred eighty four respondents.

Results: The study set to determine the quality of coding of diseases and medical procedures at KNH. A sample of 184 files was studied. The files were from all specialties in the hospital. 150 (82%) files were from patients who were discharged from the hospital and 34(18% files were from deceased. The disease coding was performed accurately in 89 % of the files. Most of the miscoding arose as a result of misinterpretation of the medical abbreviations. The disease reporting was accurate in 91% of the cases. Non of the coders had training contrary to the World Health Organization (WHO) recommendations.

Conclusion

The KNH has the responsibility to ensure that all the coders are trained as per WHO guidelines. The disease coding and reporting should be accurate for planning and for the resources allocation purposes. This should be done in all healthcare institutions as coding transforms medical diagnosis and procedures into universal medical code diagnosis.

Introduction

Medical data classification is a system of coding diseases and procedures hence a method of reporting of mortality and morbidity data. Disease classification, or medical coding, is the process of transforming descriptions of medical diagnoses and procedures into universal medical code numbers. The diagnoses and procedures are usually taken from a variety of sources within the health care record, such as the transcription of the physician's notes, laboratory results, radiological results, and other sources (1,3).

Diagnosis codes are used to track diseases and other health conditions, whether they are chronic diseases such as diabetes mellitus and heart disease, to contagious diseases such as norvirus, flu, and athlete's foot (2,4). These diagnosis and procedure codes are used by government health programs, private health insurance companies, workers' compensation carriers and international health agencies as WHO (5).

Medical data classification is done using guidelines as contained in the world health organizations (WHO) publications-International Statistical Classification of Diseases and Related Health Problems (ICD-10) and the International Classification of Procedures in Medicine (ICPM) (WHO, 1992) (6,7,15).

International statistical Classification of Diseases and Related Health Problems (ICD-10) was endorsed by the Forty-third World Health Assembly in May 1990 and came into use in WHO Member States as from 1994 (8,14). The classification is the latest in a series which has its origins in the 1850s. The first edition, known as the International List of Causes of Death, was adopted by the International Statistical Institute in 1893. WHO took over the responsibility for the ICD at its creation in 1948 when the Sixth Revision, which included causes of morbidity for the first time; was published. The World Health Assembly adopted in 1967 the WHO Nomenclature Regulations that stipulate use of ICD in its most current revision for mortality and morbidity statistics by all Member States (9,10,14,15).

The ICD is the international standard diagnostic classification for all general epidemiological, many health management purposes and clinical use. These include the analysis of the general health situation of population groups and monitoring of the incidence and prevalence of diseases and other health problems in relation to other variables such as the characteristics and circumstances of the individuals affected, reimbursement, resource allocation, quality and guidelines (11,12,13).

It is used to classify diseases and other health problems recorded on many types of health and vital records including death certificates and health records. In addition to enabling the storage and retrieval of diagnostic information for clinical, epidemiological and quality purposes, these records also provide the basis for the compilation of national mortality and morbidity statistics by WHO Member States (16,17).

Medical data classification commonly referred to as coding of diseases and medical procedures in medicine was started in 1978 at Kenyatta National Hospital KNH Newsletter (2008).

MATERIALS AND METHODS

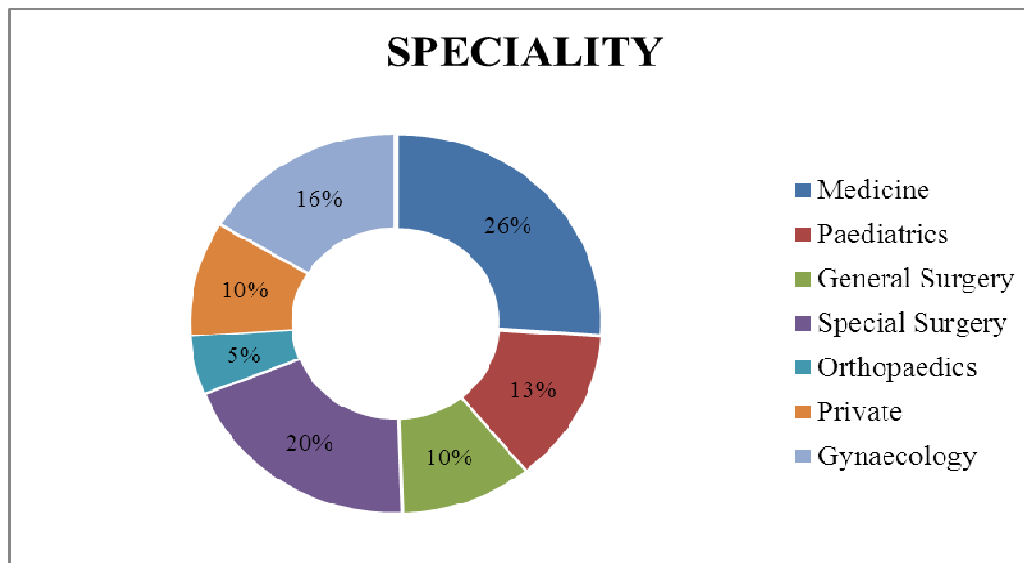
The study was carried at Kenyatta National Hospital (KNH) in Nairobi. KNH is the biggest referral hospital in Kenya. The sample size was 184 out of total population of 3000 files received over a period of 1 month and was randomly selected from all wards of the hospital. Data was collected using a checklist and a self-administered questionnaire containing both closed and open-ended questions for the level of training for the coders. The research adopted both quantitative and qualitative techniques using questionnaires, focus group discussions and in-depth individual discussions for key informants. Data was analyzed using descriptive statistics. The chi-square test of independence was used to test for association between dependent variable: Quality coding and independent variables: age, training on clinical coding. Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 16.2 and Microsoft office excel.

Results

ANALYSIS OF FINDINGS ACCORDING TO THE SPECIALTIES

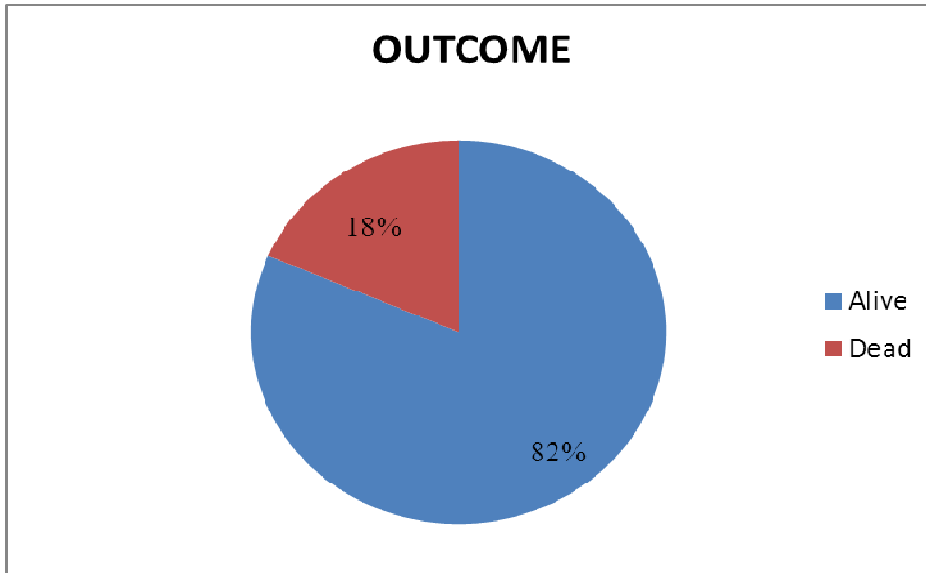
Table 1: Files studied according to speciality

Speciality	No. of files studied	Percentage
Medicine	48	26
Paediatrics	24	13
General Surgery	19	10
Special Surgery	36	20
Orthopaedics	9	5
Private	18	10
Gynaecology	30	16
Total	184	100



The 184 files studied were of different specialities as displayed above. Majority of them were from medicine 48(26%) and the lowest was 9(5%) from orthopaedics.

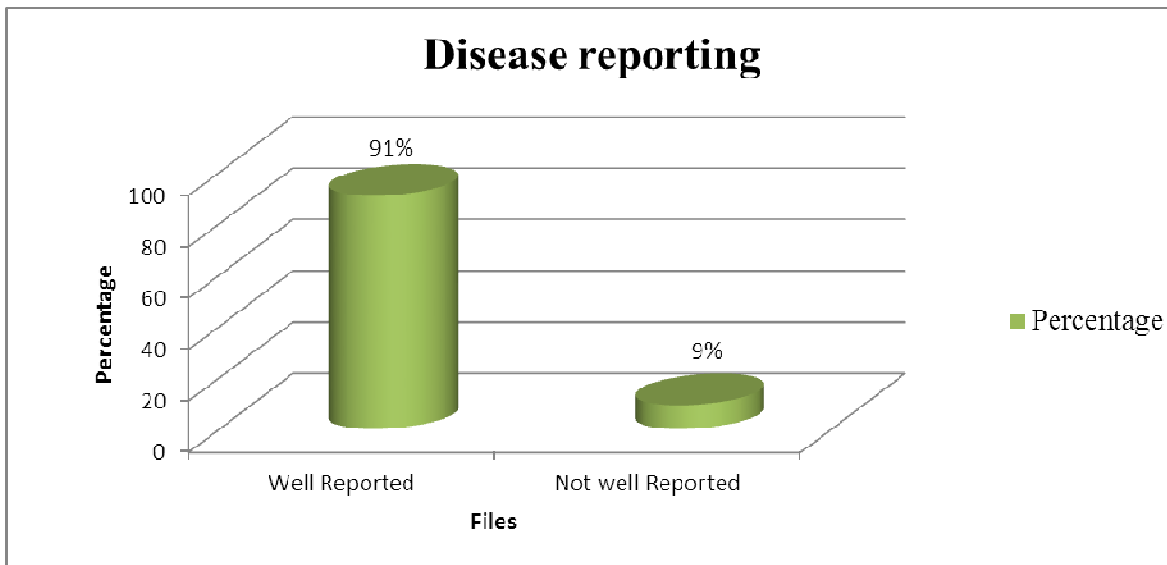
MOBILITY AND MORTALITY ANALYSIS



Outcome of files studied (alive/dead).

Of the 184 files studied 150(82%) were alive patients and 34(18%) were for deceased patients as shown in figure 1 below.

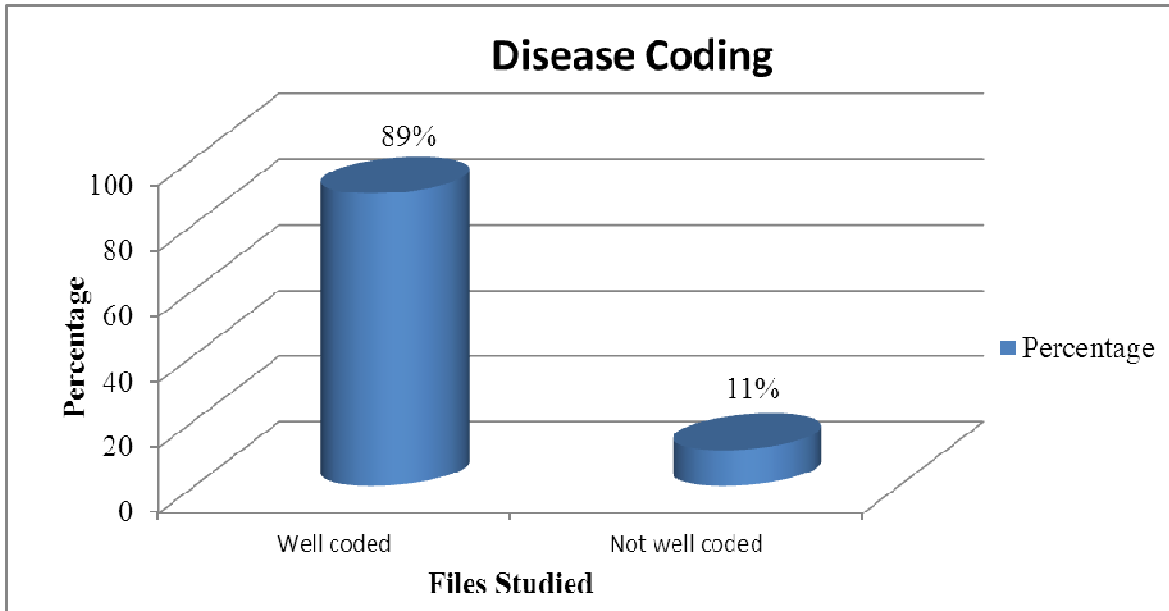
REPORTING OF DISEASES FOR CODING PURPOSES



Disease reporting

Among the 184 files studied, 167(91%) were well reported whereas 67(9%) were not well reported

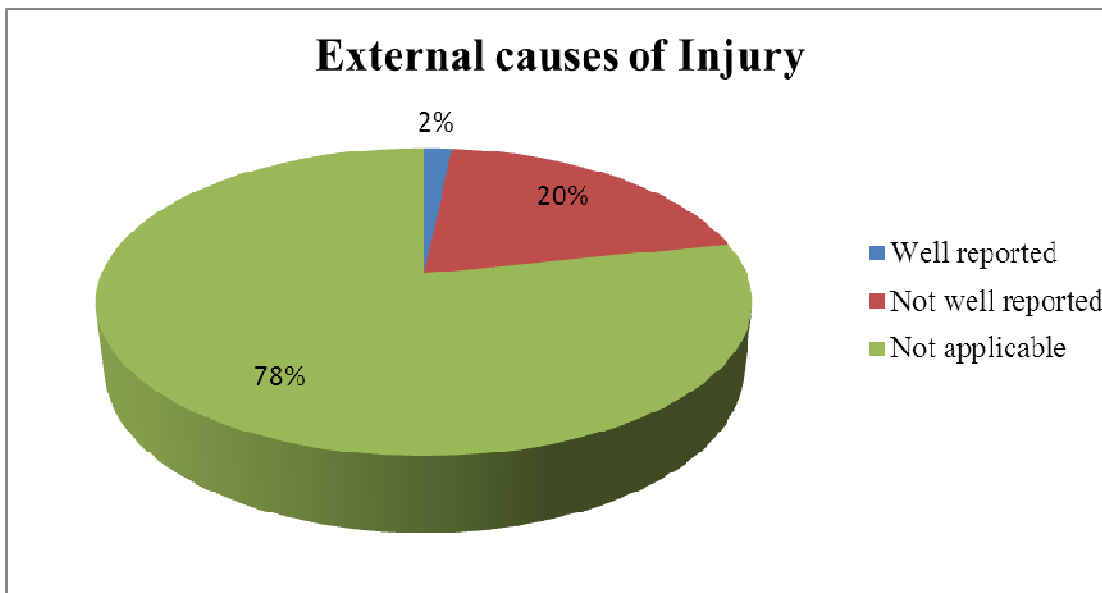
DISEASE CODING



Disease coding

Of all the files studied, 164(89%) were well coded and 20(11%) were wrongly coded.

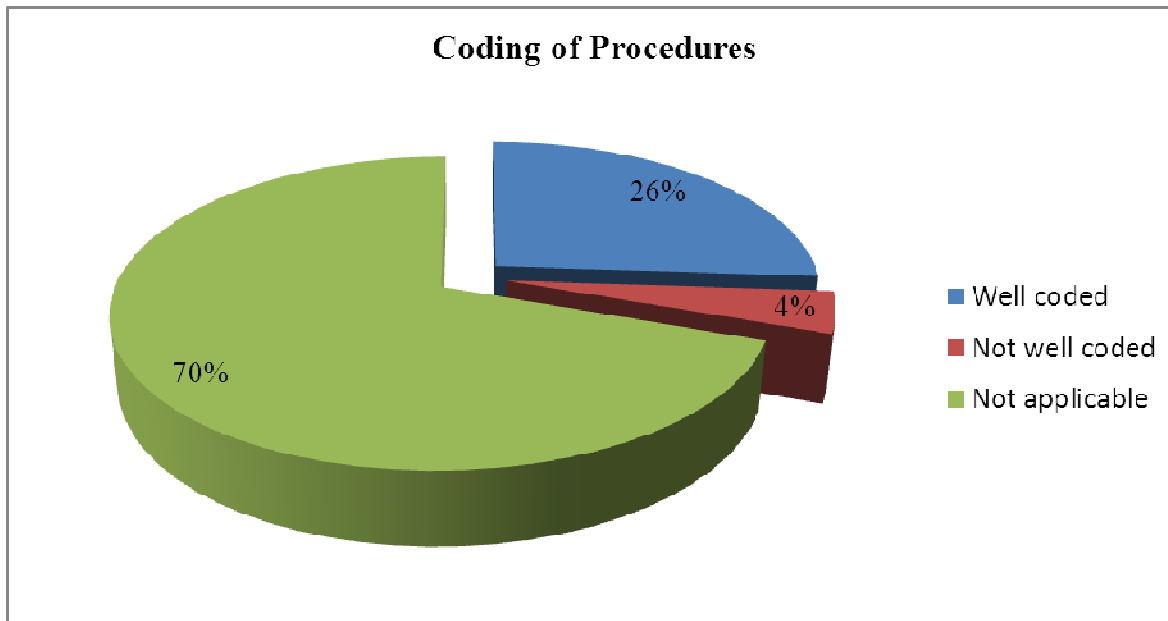
EXTERNAL CAUSES OF INJURY



External causes of injury

Of the 184 files studied, 144(78%) did not warrant an external cause of injury, 40(22%) were as a result of an injury. Out of the forty files 3(2%) were correctly coded whereas 37(20%) were incorrectly coded.

CODING OF PROCEDURES IN MEDICINE



Coding of Procedures in medicine

Of the 184 files studied, 128(70%) did not undergo an operation, 56(30%) underwent operation. Out of the fifty six files 48(26%) were correctly coded whereas 8(4%) were incorrectly coded.

4.8 LEVEL OF COMPETENCE OF CODERS AT KNH

Table 1: Level of competence of coders at KNH

CODER	DESIGNATION	LEVEL OF TRAINING	CODING YEARS	SPECIAL TRAINING ON CODING
1	MRO 1	Diploma	7	None
2	MRO 1	Diploma	7	None
3	MRO 1	Diploma	1	None
4	MRO 2	Diploma	5	None
5	SMRA	Certificate	5	None

There are five coders at KNH as shown in the above table

Discussion

Files were studied and analyzed according to the different specialties. Most of the misreporting arose from writing discharge/case summaries with no diagnosis. The reporting clinician would enter the details such as date of admission, date of discharge and name of the consultant on the summary but fail to indicate the diagnosis. Another cause of misreporting was illegible copies of the summaries.

Figure 3 displays the accuracy of coding of diseases. 164(89%) files were correctly coded and 20(11%) were wrongly coded. Most of the miscoding arose as a result of misinterpreting abbreviations e.g. CVA was often

coded as Cardio-Vascular Arrest while on perusing a patient's record it could have been "Cerebral-vascular Accident". PID- was mostly coded as "Pelvic Inflammatory Disease" while in some cases it should have been Prolapsed Intervertebral Disc."

Another common source of disease miscoding was in cases of multiple diagnoses i.e. more than one diagnosis you would find out only one diagnosis was coded while the rest were left out.

Figure 4 shows reporting and coding of external causes of injury. Of the 184 files, 40(22%) were injuries hence warranted an external cause of injury, of these 3(2%) were correctly coded and 32(20%) were incorrectly coded. ICD-10 dictates that for every injury coded an additional code of cause of injury should be coded. Coding of external causes of injury is done by the use of volume 3(alphabetical) index of the ICD-10, section 2 which lists all external causes of injury. The main problem in the coding of external causes of injury is the failure to record clearly the circumstances under which an injury occurred and where it occurred. The recording is normally done by the nursing staff or the clinician in the course of history taking. It is a desire of WHO to have the place of occurrence of an injury indicated by a fourth digit e.g. a fall is W19_? Example occurring at home should be W19.0, Residential institution W19.1, School W19.2, Sports and athletics W19.3, Streets and highway W19.4, Unspecified place W19.9. One would find that in the history taking the place of occurrence is normally not indicated. This forces the coder to indicate .9 for unspecified place which is not appropriate.

In the coding of medical procedures at KNH of the 184 studied 128(78%) were not operated and 56(30%) were operated. Of those who were operated on, 48(26%) were correctly coded and 8(4%) incorrectly coded. This problem mainly was on the coders who left many operations uncoded. This is due to failure by the coder to peruse through the patients files to determine whether an operation as done.

The other problem was a conflict between the surgeon and the clinician writing the discharge summary e.g. a surgeon would do an appendectomy and indicate so in the operation notes but the clinician writing the discharge summary would report it as a laparotomy.

In the analysis on the competency of coders in regard to their experience and level of training, it was found out that; There are 5 coders currently at KNH, 4 of them are diploma holders, while one of them is a certificate holder. 4 of the coders have an experience of between 5 to 7 years and 1 coder has been there for a year. None of the coders have any formal training on clinical coding. This is contrary to the requirements by WHO that coders should be trained and hold a certificate in clinical coding. The coded files do not give an indication on which particular coder did the coding; hence it was not possible to relate any coding problem to the experience or level of training the coders. The study set to determine the quality of coding of diseases and medical procedures at KNH. A sample of 184 files was studied. The files were from all specialties in the hospital. 150 (82%) files were from patients who were discharged from the hospital and 34(18% files were from deceased.

Conclusion

Following analysis and discussion of findings, the reporting and coding of diseases and procedures in medicine at KNH is not satisfactorily done as per the WHO guidelines in their publication ICD-10. The main problem was identified as lack of training for the coders and lack of proper reporting by the nurses and clinicians working in the wards. Morbidity and mortality data is not reported nor collected from the outpatient's clinics of KNH. This is a major omission as many patients in KNH are outpatients

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