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## An Exploration of the Effect of Nosology on Clinical Coding in Nigeria

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# **An Exploration of the Effect of Nosology on Clinical Coding in Nigeria**

## **Introduction**

Clinical coding as defined by World Health Organisation (WHO) as the translation of medical terminology written by the clinician to describe a patient's complaint, problems, diagnosis, operation procedure, treatment and or reason for seeking medical attention into a coded format, which is nationally and internationally recognised. Clinical coding according to WHO (2010) entails a sound knowledge of medical terminology, anatomy and physiology, which is basically acquainted with clinical procedures and illustration, diseases, injuries and other conditions, clinical documentation, legal and ethical aspects of health information, among others.

Clinical coding is one of main duties of health information professional who analyses clinical reports and allots standard codes using a classification system. The data produced are an integral part of health information management, and are used by local and national governments, private healthcare organizations and international agencies for various purposes, including medical and health services research, epidemiological studies, health resource allocation, case mix management, public health programming, medical billing, and public education.

Nosology deals with the cataloguing, arrangement, description and classification of disease in form of actual known ailment or syndrome. Accurate clinical coding yields quality data through allocation of numeric and alpha-numeric code numbers to diseases and operation procedures. Most of the changes made to progress standard and quality throughout the hospital services are grouped principally, based on data provided by the health information management (HIM) department. It can also be said that Clinical coding is vital in decision making process that affects health services management at all levels of health care delivery system in Nigeria.

Nosology is the process of dividing diseases or syndromes into logical hierarchical classes, subclasses and sub-subclasses based on the characteristics they have in common and those that distinguish them. It is a process of grouping which involves putting together like disease entities and separating unlike disease entities. The characteristics of disease entities are used as a basis for determining the similarities or otherwise. Therefore, Nosology involves the grouping of similar disease entities together as determined by their

characteristics, which facilitates assigning a class to them through allocation of code numbers.

Poor implementation of clinical coding services by the health information managers usually results from improper attention to the concept of Nosology; which use to have negative consequences on the efficient implementation of clinical coding services nationwide. The problem therefore is that the extent to which health information managers pay attention to the concept of Nosology for effective clinical coding services is not clear. It is in the light of this that the study explored the roles of Nosology in clinical coding services in Nigeria.

The aim of this study is to explore the relationship between Nosology and Clinical Coding in Nigeria. The specific objectives of this study are to;

1. examine the Concept of Nosology in Nigeria
2. find out the relationship between Nosology and Clinical Coding in Nigeria
3. identify the challenges of Clinical Coding in Nigeria

### **Importance of Clinical Coding**

The universal purpose of clinical coding is to provide the platform for processing health care data as a means of subsequent statistical data analysis, retrieval, and report generation for management and other users of health care data. Clinical coding enables health services researchers to study cross-sectional, risk-adjusted, and sequential dissimilarities in access, quality, costs and efficiency of care. Clinical coding aid in teaching, education, and research into aetiological factors of diseases: Assist in Statistical classification of diseases and related health problems in an organised manner.

Researchers from the fields of Medical and health services commonly use clinical codes as inclusion and exclusion benchmarks to describe sampling frames, to identify and register patient co-morbidities, incidence of complications, trail the rate of utilization, and define rates of case fatality and morbidity: Serves as Mortality and morbidity data to show the occurrence and prevalence of diseases in the community.

Coding and indexing obliges the coder to picking correct and appropriate underlying cause of death when issuing certificate of death: Support reimbursement, administration, epidemiology, and health services research. Health care facilities use ICD codes for workload and length-of-stay tracking as well as to assess quality of care: Helps clinical epidemiologists in studying patterns of disease, patterns of care, and outcomes of disease.

Health care institution is data focussed and propelling, therefore, every resources must be deployed to ensure adequate, relevant, precise, concise, accurate and timely data for

proper managerial efficiency and effectiveness at diverse stages. This indicates the essence of clinical coding because it is the genuine and authentic foundation for data generation, storage, analysis, interpretation and retrieval for management of categorise of healthcare data users. According to AHIMA (2017) successful high level of accuracy in clinical coding needs an excellent attention to detail, team work, good communication skills and interest in health care, diseases and procedures.

The major challenges of clinical coding as reported by Snider (2003) are; inadequate personnel, administrative bottleneck, and uncooperative attitude of the physicians.

**Inadequate Personnel:** Inadequate number of coders in the health care institutions is a prominent problem associated with clinical coding. Health Information Officers available in various hospitals lack commitment for coding while some have developed phobia for the exercise. In many Health Information departments, coding materials are absent; discharges and death cases are left uncoded.

**Administrative Bottleneck:** there is generally non-existence of willingness on the side of the Management of the hospitals to establish coding unit simply because they do not attach much importance to clinical coding. The management hardly use unpretentious data in clinical decision making in the hospital.

**Uncooperative Attitude of the Physicians:** Most of the doctors in health care institution do not right discharge summary of cases they have attended to. This affects effective clinical coding as the coder many times peruse medical record (casenote) before picking the diagnosis for coding. The main issue with this however, is the illegible handwriting of doctors.

Nosology is the division of therapeutic discipline that deals with the cataloguing, arrangement, description and classification of disease in form of actual known ailment or syndrome. Several authors including Jean, Gregor, Jemec and James (undated) and Smolik (1991) defined nosology as classification of diseases, while Hoenig (1981) observes that “The discipline of nosology uses scientific methods to arrive at a classification of psychiatric disorders and is concerned with the validity of its entities”. Quora, (2016) says “The term nosology refers to the classification of disease”. Bynum and Roy, (2013) claimed that nosology is “the branch of medicine concerned with the classification of diseases”. Nosology, in concordance with the aforementioned authors is a completed categorized list of identified diseases. Furthermore, Nosology is a discourse or documented grouping of diseases, the study of illnesses and the organized exploration or classification of diseases or simply put the characteristics or scientific understanding of diseases.

The origin and etymology of nosology according to Merriam-Webster dictionary (2017) could be traced New Latin *nosologia*, from Greek *nosos* disease + New Latin *-logia* -logy. Nosology group diseases by cause, pathogenesis, symptoms, syndromes, damages caused and by the organ of the body involved though this becomes problematic when more than one organ are affected. More emphasis is laid on sorting of diseases by their causes and characteristics when detailed information is available. In public health, nosology is used comprehensively in wide range of issues that has to do with studies in epidemiology. The knowledge of nosological coding is applied in analysis of death certificates to ascertain causes of death. In addition to these, nosological classifications are used in homoeopathic management such as filing of insurance claims, patient health information among others. Nosology segregated medical condition into syndromes, disorders, lesions and injuries, and diseases.

**Syndrome:** A syndrome is the concurrent occurrence of several medical signs, symptoms and other characteristics which often manifest together. A syndrome may have unknown cause, a single cause such as Down syndrome and multiple causes such as Parkinson syndrome. When a syndrome name becomes familiar, such name remains in use even after the underlying caused has been ascertained or when primary causes are multiple. An example of this is AIDS which is still in use after HIV has been known as the underlying causes.

**Disorder:** In medical practice, a disorder is considered to be a defect or disruption in efficient and effective functions. Medical disorders can be grouped into mental, physical, genetic, emotional, behavioural, and functional disorders.

**Disease:** Disease widely refers to any condition that weakens the standard, traditional and customary operational of the body or any its parts. Simply put, disease is a term used for dysfunction in any of the body's usual and regular homeostatic procedure. According to Smith (2002), the term disease describe illness or sickness caused by the presence of pathological microbial agents such as bacterial, virus, protozoa among others.

**Injury and lesions:** Injury is destruction to the body as a result of external causes which may include; accidents, falls, hits, weapons, and other causes. Lesion is any abnormality in the tissue of an organism, usually caused by disease or trauma.

### **Nosology in clinical coding**

Clinical coding involves conversion of information from a patient's medical record into alphanumeric codes according to health classification system (nosology). This entails assigning code numbers to diseases and condition according to established criteria. Diseases are classified according to axes of classification which include classification by anatomy,

alphabet, epidemiology, aetiology and morphology. The most commonly used nosologies, according to Kimberly, Karon, Matt D Price, Kimberly, John, and Ashton (2005), include International Classification of Diseases (ICD), the American Medical Association's Current Procedural Terminology, 4th Edition (CPT-4); the Health Care Financing Administration (HCFA, now known as the Centers for Medicare and Medicaid Services) Health Care Common Procedural Coding System (HCPCS); the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, 4th Revision (DSM-IV); Europe's Classification of Surgical Operations and Procedures, 4th Revision (OPCS-4); and the Agency for Healthcare Research and Quality's Clinical Classification Software (CCS). The most widely used among the clinical coders is the International Classification of Diseases (ICD). The nosology (ICD) which began in 1900 has evolved from 179 diseases to around 155,000 codes in ICD 10<sup>th</sup> edition.

Nosology enables clinical coding by providing codes to classified diseases and a variety of signs, symptoms, abnormal findings, complaints, social circumstances and external causes of injury of diseases. ICD is all inclusive as every health condition is assigned to a require category and given a code up to six characters long. Moreover, nosology being a system developed in collaboration with some other ten international centres unifies clinical coding among member nations by adopting common medical terms and reporting format by physicians, medical examiners, and coroners on death certificate. This fosters similar grouping for statistical purposes that will eventually encourage global comparability in the collection, classification, processing and presentation of mortality and morbidity statistics.

It is worth note that Nosology assists clinical coding immensely by restraining statistical classification in to a limited number of mutually exclusive groupings which are able to incorporate the entire variety of morbid conditions. Equally. This highly facilitates the statistical study of disease occurrences. Nosology assists coders to swiftly resolve coding complications using a knowledge base that insures comprehensive coding from a clinical point, focuses on far more than safeguarding suitable reimbursement. Nosology provides clinical coders with a sophisticated, easy-to-learn tool for accurate, complete and compliant coding and grouping of diseases.

Nosology provides clinical coders with necessary elastic and timely upkeep with difficult associated with ever-changing rules and regulations of health care. These involves understanding clinical conditions, classification guidelines, and payment methodologies and then applying them consistently over a vast range of patient encounters and other variables are formidable challenges

Moreover, Nosology especially ICD 10th revised edition generates extended general procedure to clinical coding and indexing by separating previous editions into 3 volumes. These volumes are:

Volume 1: Tabular List, which contains alphanumerically arranged code numbers of diseases.

Volume 2: Instruction Manual, which give a good deal of new background, instruction matters and guidance on the use of volume1.

Volume 3: Alphabetical index, which contains the index itself with an introduction and expanded instruction on its use.

This study is a desk top study. The method used for this study is literature review and theoretical analysis. Inferences were drawn from existing literatures to establish relationship between Nosology and Clinical Coding in Nigeria.

The Study found that, Nosology determines how classification of morbidity and mortality and the case-mixed are reinforced to enhance effective Clinical coding in Nigeria.

Findings revealed that, relationship exists between Nosology and Clinical Coding in Nigeria. Findings identified inadequate personnel, administrative bottleneck and uncooperative attitude of the physicians as the major challenges of clinical coding in Nigeria

### **Conclusion**

Clinical coding exists and is being practised based on the concept of Nosology which is produced after decision have been made on classification related subjects and consensus reached nationally and internationally by experts who can not only code, but also design, deliver education and assist in the development of the classification and the rules of usage.

### **Recommendations**

1. This study recommends the need for government at all levels to procure appropriate Classification Schemes and improve capacity buildings of health information managers on Nosology in order to facilitate an improved Clinical Coding Service in Nigeria.
2. The study also recommends the need for World Health Organization (WHO) to ensure the use of a uniform method of classification worldwide, in order to ensure accurate comparison of morbidity and mortality data specified for various diseases and causes of death