ASPECTS OF CLINICAL CODING

Clinical coding is the process by which some clinical information about the patient is transformed into codes, to enable grouping of medical activities in a limited number of categories, that are easy to process, store and analyzed. The essential element in making a correct clinical coding is the allocation of each diagnosis or procedure in the group category to which it belongs, underpinning the general concept for the quality in clinical coding.

Modernization of health care involves the continuous guidance towards quality standards of both medical act itself and adjacent activities. Clinical coding is one of the key components of the coordination process for all stakeholders and has a major impact on health service monitoring, but also on morbidity assessment and estimates regarding the need for health services.

Good clinical coding is one of the essential elements for quality care therefore providing resources for this and implementing a clinical coding system will have a positive impact on the process in Romanian health system.

Keywords: clinical coding, quality in clinical coding, DRG, health care financing.

The key element in achieving good clinical coding is represented by the compliance with the rules and criteria for allocation of each diagnosis or procedure to a category group in which it belongs. All these conditions shall be incorporated into the general concept of clinical coding quality.

The allocation process into groups or categories can be done either by the attending physician or by a person trained in clinical coding. For both categories of staff education and training in clinical coding is essential to be able to say that the coding is correct.

Due to insufficient understanding of coding rules on one hand and on the other hand to the limitation that medical information is difficult to be summarized in codes, the process may be subject to large variations in practice.

HISTORY AND DEVELOPMENT

The developing of medical coding is correlated with human interest to discover the factors that cause illness and to structure the causes of death. The study of the determinants of health or factors causing the disease is carried out today by epidemiology in its various forms. The first recordings aiming to link the causes of death and the factors that determine the disease belongs to Hippocrates, who stated in writing for the first time that external factors such as air, water and soil, have an influence on the diseases that are treated by doctors.

In the Middle Ages, when the great plague of 1327 reduced the population of Europe by one third, for the first time people recognized the importance of measures to prevent disease transmission by isolating those infected and avoiding contact with them or with their environment. After the great plague, several small outbreaks have existed throughout the continent, keeping alive people's fear of the disease. To meet the need of tracking any disease outbreaks in London were for the first time put in place, centralized registers for causes of death. These occurred in 1629 and were released once a week to inform people about the number of people and...
areas affected. Records of mortality in London consisted of 60 categories of death. [1]

During the eighteenth century several additional classifications were made by Linnaeus, Bossier de Lacroix and Cullen. Around 1825, English physician William Farr, restructured the classification made by Cullen, which take into account the classification of primary diseases and not its complications. Additionally, data regarding the occupation of the person and how it influences the disease were introduced.

With the outbreak of cholera in the mid nineteenth century, Farr, first performed studies on the transmission of the disease, basing his observations on the correlation between the number of cases and their concentration in certain parts of London. Although initially Farr believed that cholera is transmitted by air, then he concluded that the disease is transmitted through water.

The need to standardize the classification of disease was first recognized in the International Congress of Statistics in Brussels in 1853. In this context, it was decided that Farr have to conduct a comprehensive redefinition of the disease until 1855 when it was going to be organize the next statistics congress. The first classification takes account of anatomical regions and had 138 entries.

In 1900 was adopted a more complex classification perfected by Bertillon (chief statistician of Paris). Advantages of causes of death classification were assessed on the American continent and were adapted as such. In 1920 it was conducted a review of this classification. After disappearance of Bertillon, in 1922, was considered to take account not only the classification of the causes of death but also causes of morbidity.

In 1949, in Paris, the World Health Organization approved a complete list of rules for the selection of causes of death and morbidity, the document is known as the "Manual of Classification of Diseases, Accidents and Causes of Death" bearing the generic name of ICD (International Classification of Diseases). From this moment on, this list has been adapted and improved periodically.

Over time, successive changes (about every 10 years) to the list tried to balance on one hand the need to detail the medical acts and morbidities that were performed by health service providers involving an increasingly large groups of categories, and on the other hand the reserve to development of this list from another part of the users.

A major change in the evolution of coding was performed with the transition from ICD - 9 to ICD - 10 which aims to be more detailed than its predecessor. In version ICD - 10 there are about 8,000 codes for causes of death compared to 4000 in ICD - 9. The classification of ICD - 10 uses alphanumeric codes of 4 or 6 characters, while ICD - 9 uses 4 digit codes.

In practice, clinical coding is the process of translation of medical care actions provided to a patient (usually diagnoses and procedures) into international codes (ICD 10, ICD 10 AM, etc.) and recorded in the hospital database.

Currently, each country has opted for ICD - 9 or ICD - 10 with local adaptations. In the U.S., for example, hospitalized morbidity is coded using ICD - 9 with clinical modification (ICD - 9 CM) and for mortality the coding is made using ICD - 10. In Australia the whole medical system is using ICD - 10 AM (Australian Modification) classification.

The literature shows that a shift from a type of coding to another can have major impact on mortality data, as has happened in the U.S. when they switched from ICD coding - 9 to ICD - 10 for mortality coding and therefore, changing the coding system is looked upon with skepticism. [2]

**Clinical Coding and Health System Interactions**

Modernization of health systems requires their continued orientation towards quality standards of the medical act itself and the adjacent activities such as clinical coding.

Clinical coding is one of the key components of the process for coordination of all health system actors that are involved in providing or financing health services, has a major impact on health care providers monitoring activity and also in the assessment and estimates of the need for health services. To achieve a high level of data quality that represents a solid support for decision making at institutional, local or national level, the coding process must be of high quality. The orientation towards quality must be present in collection, processing and interpretation.

The data collected, validated and tested have a high degree of confidence for decision makers in comparison with data that do not pass through this process and can be subject to errors with consequences more or less important at the patient level or system level.

For Romanian health system, where most hospital funding is based on case-mix, the impact of clinical data quality is significant. In this context, the relationship between care provider and financier must be trustworthy regarding the essential step of clinical coding. Coding quality review process should be an essential step in validating the quality of clinical data.

**Why Quality in Clinical Coding is Important?**

A correct clinical coding is an essential element for quality care and has several implications including:

- Present or future episodes of hospitalization benefits from data that must reflect reality. This implication is particularly valid in terms of internationally current trends vision towards integrated databases. A side issue is the regulations imposed by the Council of Europe through “Directive on cross-border healthcare” [3] which states the implementation of e-Prescription in each Member State that requires among other obligations a coordinated and coherent system with integration of information on patients level, including clinical data.
Quality coding allows different actors in the health system to have access to complex information that can be presented in a consistent and universally accepted form for each institution that have access to patient data.

Continuity in the system ensures an increased quality and safety of care. To make this possible it is essential to ensure correct coding of information about the patient.

High standard clinical coding ensures using high standards medical information for other purposes such as:

- Clinical Research carried out by doctors that have an interest in a specific field. If data coding is performed correctly, extracting information for research can be done much easier without extract information from "hard copy" sheets.
- Planning of health systems and the resources allocated must take into account the real problems of patients that address a health provider, producing an image on the type of morbidity and the need for resources that can be allocated.
- Improving clinical processes can be directly influenced by increasing the quality of coding like general indicators (length of hospital stay, waiting times, etc.) or specific indicators (side effects, complications, episode of hospitalization, iatrogenic diseases, etc.)
- Quality records accurately reflect hospital work, and such information may be an indicator that influences financing of that unit.

Why Quality Coding is Important in Romania?

Lack of medical personnel specialized in clinical coding leaves room for errors that result in distortions of medical records quality, but the review process of coding can alleviate this deficiency. [4].

Theoretically, in Romania, the attending physician is responsible for allocating diagnostic and procedures codes for each patient (OMSP / CNAS: 1782/576 of 2006, as amended and supplemented), but in practice due to heavy work load and understaffing compared with the real needs, clinical coding remains in other persons responsibility.

Some people that make clinical coding have not done any training courses in clinical coding and "inherit" coding models of their predecessors, even if they do not correspond to reality, which leads to the perpetuation of systematic errors in data recording.

Given the above, a pertinent question which concerns both hospital managers and funders of the health system is:

"How much and in what way clinical coding quality influence the funding DRG process?"

Accepting the importance that clinical coding quality is essential and providing the necessary resources for its implementation will have a positive impact on the Romanian health system processes. Beside the support of official institution (Ministry of Health, National Health Insur-

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