



Difficulties in Application of the International Statistical Classification of Diseases and Related Health Problems (ICD) and Distribution Rates for Urogenital Diseases

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Abstract

Background: The ICD-10 coding system is commonly used in organizations providing health services in many countries. This coding system used for diagnosis of diseases is standardized for national and international diagnoses with the aim of determining incidence rates for diseases and acting as a guide for determination of health policies.

Aim: To determine the amount of ICD-10 diagnosis codes used for all patients attending our hospital in a 1-year period, the rates of ICD-10 related to urogenital system diseases and the distribution of urogenital system diseases.

Materials and methods: From 15/04/2018 to 15/04/2019, a total of 3,764,124 ICD-10 codes were recorded for diagnosis and treatment in all units of Kanuni Sultan Süleyman Education and Research Hospital. Of these, 174,448 (5%) were ICD-10 codes for the urogenital system and urogenital diseases and unused codes were recorded.

Results: Of the 196 ICD-10 codes related to urogenital diseases, 43 (22%) were not used, with 5% of total codes within a 1-year period related to urogenital system diseases and of these 50% were related to infectious diseases.

Conclusion: Regulation of the ICD-10 coding use certification programs standardized by the WHO will contribute to providing accurate national and international data. Our data shows that urogenital system infections have an important place in health spending. Informing the public about infectious diseases will contribute to reducing possible health spending and development of antibiotic resistance.

Keywords: ICD-10 code; urogenital system diseases; WHO; epidemiology

Introduction

The International Classification of Disease (ICD) system was developed for accurate follow-up of diseases in a population. Studies about coding related to diseases extend back to 1763 [1]. In 1948, the World Health Organization (WHO) gained responsibility for an international coding system for diseases [1,2]. Historically updated, the developed ICD coding system was published as ICD-10 in 1992 [2]. This coding system used for diagnosis of diseases aimed to standardize national and international disease diagnoses. Additionally, this system aimed to add convenience to many areas like clinical research, financial analysis, statistics, risk management and health policies [1,2]. ICD-10 has an alpha-numeric code structure. The ICD-10 classification structure has five levels. Each level is a detailed form of the level above.

The aim was to determine the total ICD-10 code amounts used in all units of İstanbul Kanuni Sultan Süleyman Education and Research hospital during a 1-year period, the amount of ICD-10 codes related to urogenital system diseases and the distribution of urogenital diseases to determine the usability of the ICD-10 coding system for urogenital system diseases.

Material-Method

From 15/04/2018 to 15/04/2019, a total of 3,764,124 ICD-10 codes were recorded for diagnosis and treatment in all units of Kanuni Sultan Süleyman Education and Research Hospital. There were 174,448 (5%) ICD-10 codes for the urogenital system and urogenital diseases and unused codes were recorded.

Result

Within a 1-year period, 174,448 (5%) ICD-10 codes were used for urogenital system diseases. The distribution of urologic diseases according to ICD-10 is shown in Figure 1. Of the 196 ICD-10 codes related to urogenital diseases, 43 (22%) were not used. The unused ICD-10 codes are shown in Figure 2. There were 87,077 ICD-10 codes (50%) used for urogenital infections and the

distribution is shown in Figure 3. For stone disease related to the urogenital system, 30,733 (18%) ICD-10 codes were used and the distribution is shown in Figure 4. There was a total of 13,790 ICD-10 codes (8%) used for benign tumors of the urogenital system, with the distribution shown in Figure 5. A total of 1115 ICD-10 codes (1%) were used for urogenital system malignant tumors, with the distribution shown in Figures 6 & 7.

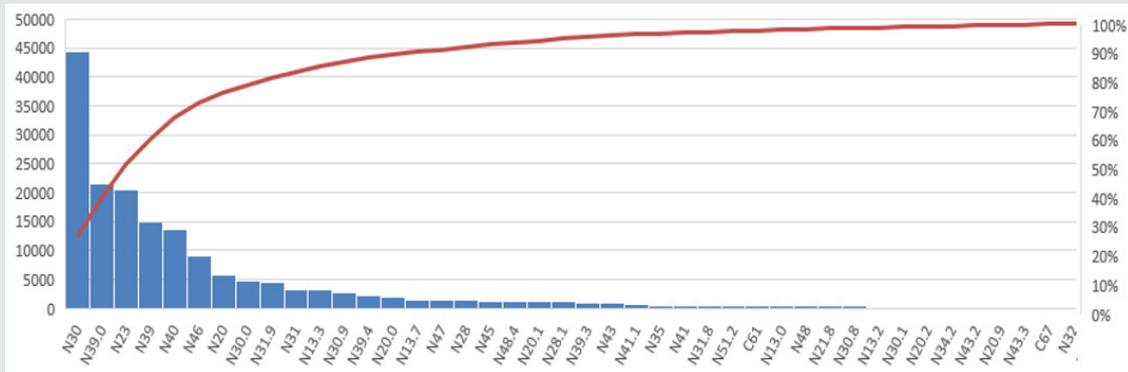


Figure 1: ICD-10 codes and rates used for urogenital system diseases.

C60.1 C60.2 C60.8 C60.9 C62.0 C63 C63.0 C63.2 C63.7 C63.8 C63.9 C65 C67.3 C67.5 C67.6 C67.7 C67.8
 C68.0 C68.1 C68.8 C68.0 C68.1 C68.8 D29.4 D29.7 D30.0 D30.4 D30.7 D30.9 N22.0 N30.3 N35.1 N36.3
 N41.2 N41.9 N42.1 N42.2 N48.0 N48.5 N49.0 N49.9 N50.1 N51.8

Figure 2: ICD-10 codes for the urogenital system that are not used.

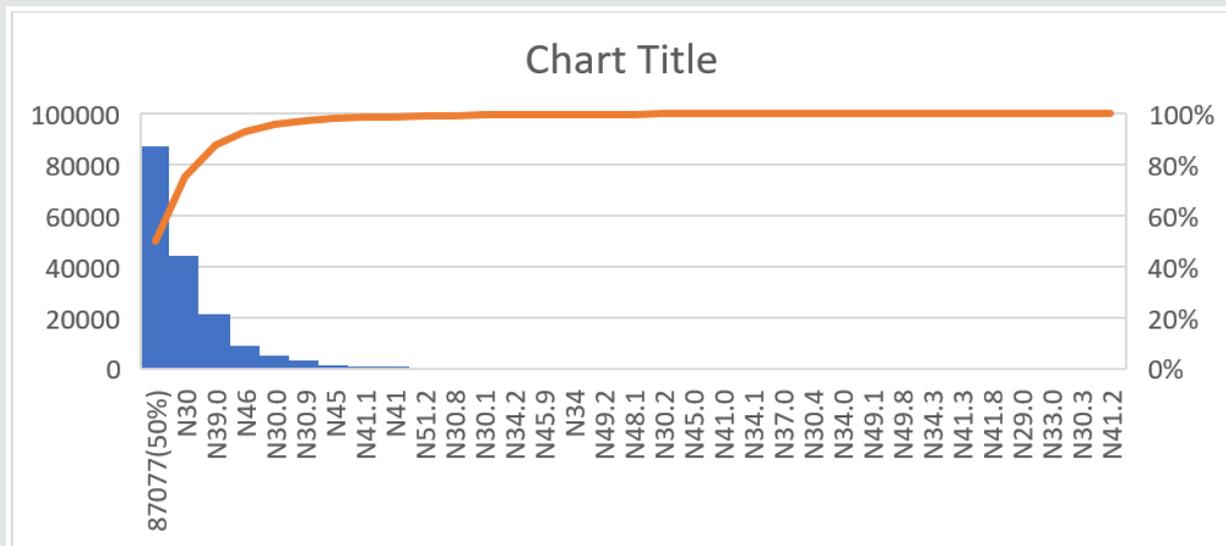


Figure 3: ICD-10 codes and distribution related to urogenital system infections.

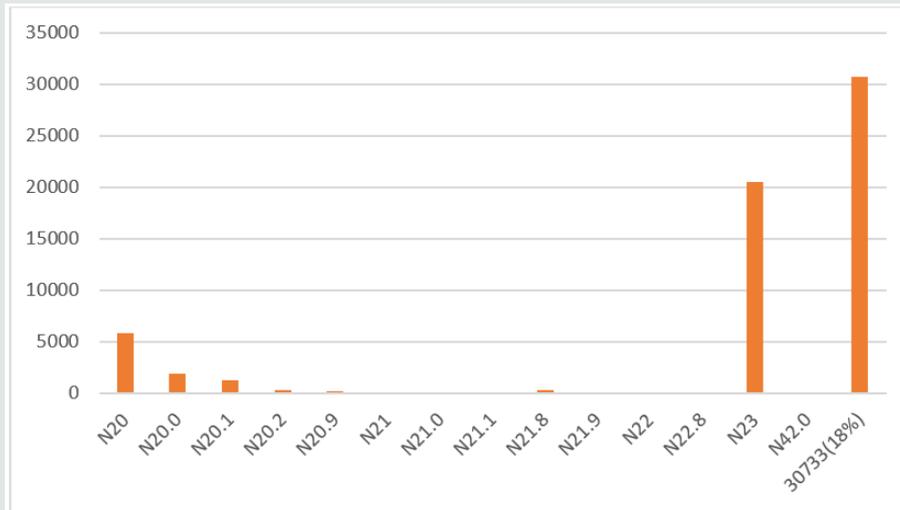


Figure 4: ICD-10 codes and distribution related to urogenital system stones.

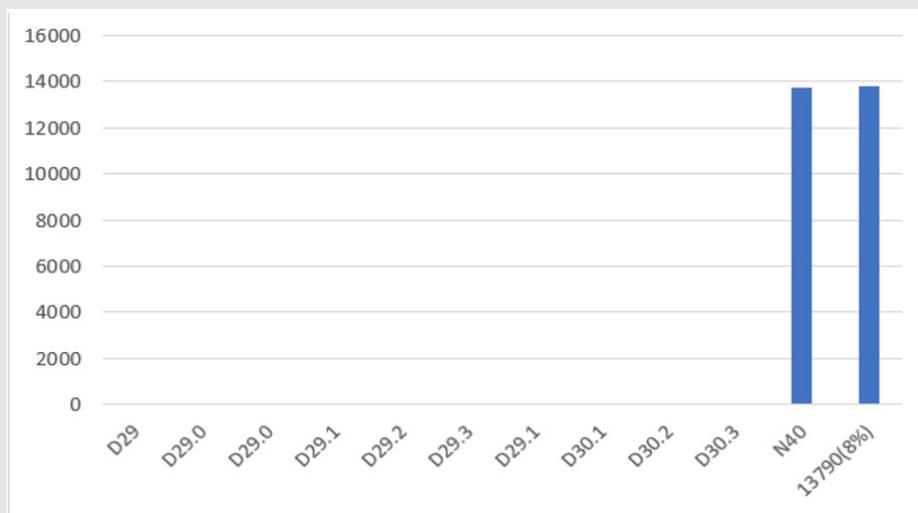


Figure 5: ICD-10 codes and distribution related to urogenital system benign tumors.

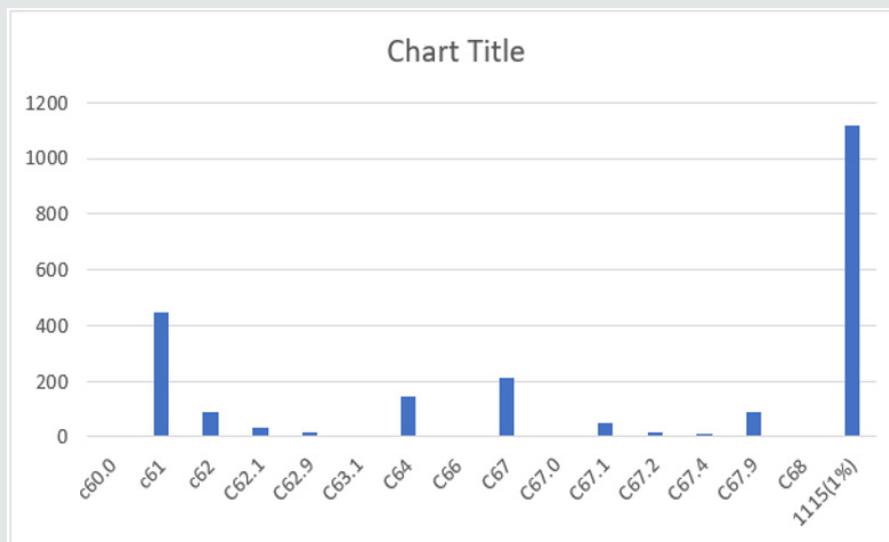


Figure 6: ICD-10 codes and distribution related to urogenital system malignant tumors.

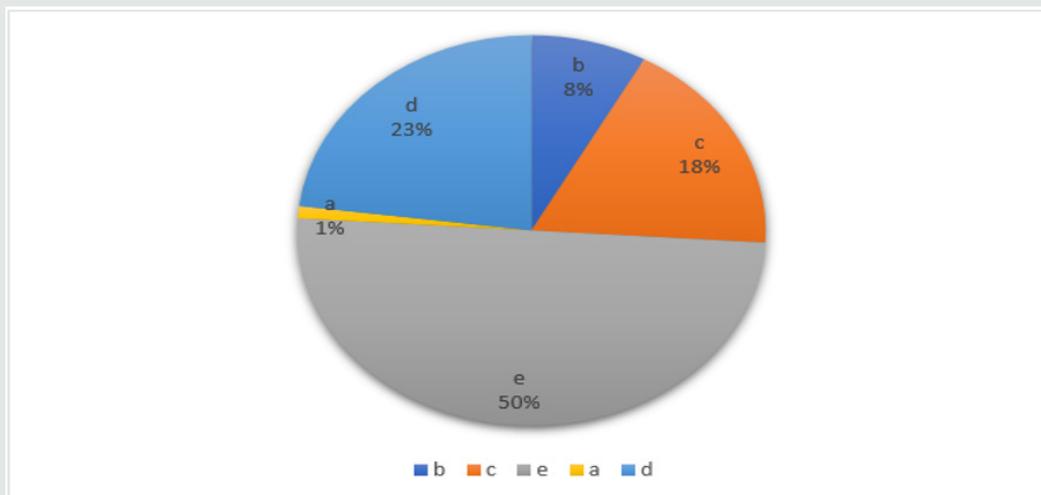


Figure 7: a urogenital system malignant tumors b urogenital system benign tumors c diseases related to urogenital system stone disease d other urogenital system diseases e urogenital system infections.

Discussion

The aim of the universally accepted ICD coding system, including internationally accepted revisions and updates, is to ease comparability of international morbidity data, to allow more efficient use of international resources and to create a coding system with reduced omissions and errors [2,3]. The ICD-10 revision presents a 21st century classification [3]. In recent years, many countries commonly use this coding system for research and surveillance [4]. In Turkey, health organizations have commonly used the ICD coding system for the last 20 years. One of the basic problems with this coding system is that due to the excess of thousands of disease code numbers, it appears codes are written for a broader disease group instead of the real code for the disease. Another problem with this coding system is that use is made more difficult as it requires definition according to all criteria of a disease [3]. This study focused on the main diagnosis codes for disease coding supporting the problems defined for the ICD coding system.

A study by Jetté et al. found 92.4% correct use of the diagnostic coding in the International Classification of Disease (9th edition) for male infertility [5]. A study of the emergency service found the ICD-10 coding system used for epilepsy had 100% positive predictive value (PPV), with 75% PPV found for epilepsy subtypes [6]. Our data focused on main diagnostic codes and a reduction in this rate was observed for disease coding subtypes.

A study by Tollefson et al. assessed International Classification of Disease (9th edition) data for functional outcomes like urine leakage and erectile dysfunction after radical prostatectomy and found weak correlation with confirmed survey data [7].

Additionally, another problem related to coding is that many countries modify the ICD codes independent of the WHO which appears to be a significant obstacle to comparison of international data [4].

The World Health Organization updates and revises the ICD coding system. Based on present problems, updating and planning

training programs will increase the success rates for use of ICD coding.

Conclusion

Regulation of standardized ICD-10 code use certification programs for health professionals by WHO will contribute to ensuring accurate national and international data. Our data show urogenital system infections have an important place in health spending. Informing the public about infections will contribute to reducing health spending and development of antibiotic resistance.

Ethics Committee Permission

Permission was granted by the Clinical Research Ethics Committee of Health Sciences University İstanbul Education and Research Hospital. Decision no: 1843, date 24/05/2019.

Conflict of Interest

The author reports no conflicts of interest. The author alone is responsible for the content and writing of the paper.

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