A survey on Current Procedural Terminology (CPT) by Iranian Urological Association

Farzad Allameh[1] MD-MPH, Abbas Basiri[2] MD, Amir Reza Abedi[3] MD, Seyyed Mohammad Ghahestani[4] MD, Saeed Montazeri[5*] MD, Vahid Fakhar[6] MD

1: Men's Health and Reproductive Health Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

2: Iranian Urological Association (President), Urology and Nephrology Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

3: Laser Application in Medical Sciences Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

4: Iranian Urological Association (Board of Directors), Tehran University of Medical Sciences, Tehran, Iran.

5: Department of Urology, Shohada-e-Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

6: Hasheminejad Kidney Center (HKC), Iran University of Medical Sceiences (IUMS), Tehran, Iran.

*: corresponding author, Email: saeed.montazeri89@gmail.com , Fax: +982122736386

Department of Urology, Shohada-e-Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Running Title: A survey on Current Procedural Terminology (CPT) by Iranian Urological Association

Abstract

Purpose: The purpose of Current Procedural Terminology (CPT) is to offer a universal language to describe medical services. The elaborate systems designed by high-income countries are not fully applicable in ones with limited resources. Therefore, in the current study we aimed to ask urologists' opinion about deploying relative value units in valuation of medical services in Islamic republic of Iran.

Materials and Methods: A group of appointed urologists first selected 15 urological surgeries as exemplar urological procedures. Next, urologists around the country were asked to fill out an online questionnaire comparing these procedures with standard one (varicocelectomy). Then, mean scores of four categories (Difficulty, duration, adverse events and legal issues) were determined separately for each of the 15 procedures. Subsequently, mean score for each surgery was measured using the calculated mean scores of the four aforementioned categories.

Results: 273 urologists completed an online questionnaire. All of the calculated codes were higher compared to the current codes. Urethroplasty showed the least increment with 25.22 equivalent to 51.69% while extracorporeal shock wave lithotripsy showed the most increment of 63.59 equivalent to 114.37%.

Conclusion: Although CPT is an important tool in valuation of medical services, making modifications to it, especially in low-to-middle-income countries seems necessary. In this survey, we aimed to evaluate current surgical codes for urological procedures based on urologists' opinion. All of the calculated codes were higher compared with current codes. This, indicated the necessity of making changes in relative value units of urological procedures.

Keywords:

Current Procedural Terminology; Economy; Relative Value Units; Surgery; Urology

Introduction:

Surgical conditions represent 28% to 32% of the global burden of disease (1). Access to timely, safe, and cost-effective surgical care has been considered as an “indivisible and- indispensable part of health care” worldwide (2).

CPT attempts to offer a universal language for describing diagnostic, medical, and surgical services and therefore, considered to be an effective tool of communication between physicians and other health care providers, patients, and third parties (3).

American Medical Association first developed CPT in 1966, which mostly included surgical procedures. The code book of CPT are being updated every few years and expanded to include therapeutic and diagnostic and also internal medicine procedures.

CPT was accepted as a part of Centers for Medicare & Medicaid Services in 1983. Today, CPT is the primary way of communication between providers and payers for reimbursement.

Many developed countries have developed their own unique systems for classification of procedures (4), including the United States (CPT and International Classification of Diseases, 9th Revision, Clinical Modification), United Kingdom (Office of Population Censuses and Surveys Classification of Surgical Operations and Procedures, 4th Revision), and Canada (Canadian Classification of Health Interventions).

The elaborate systems designed by high-income countries are not fully applicable in ones with limited resources, where minimally invasive surgical procedures are rarely performed. Even if applicable, these systems would be expensive and hard to implement.

Hence, physicians seek a revised or even new CPT code system in Iran especially due of recent inflation experienced in this country which consequently caused the loss in Iranian currency 's value.

Materials and Methods:

In the course of two months (from December of 2019 to January of 2020) under supervision of research committee of Iranian urological association, a selected group of urologists including general urologists, endo-urologists, pediatric urologists, onco-urologists as well as a urology residents' representative started evaluating different appraisal approaches to determine CPT.

They decided to choose an essentially simple and common surgical procedure without any significant side effects to serve as a standard procedure: Varicocelectomy (Code: 18) appointed for this purpose. In the next step, 15 urological procedures chosen in February 2020, urologists around the country were asked to fill out an online questionnaire comparing these procedures with standard one based on the differences in four categories, including: Difficulty, duration, adverse events, and legal issues. Data collection lasted almost three weeks during which announcements

were made particularly from Iranian urological association through various methods to encourage urologists to partake in the poll. The 15 selected procedures were as follows: open prostatectomy, transurethral resection of the prostate, percutaneous nephrolithotomy, transureteral lithotripsy, radical nephrectomy, radical prostatectomy, hypospadias repair, female incontinence sling surgery, pyeloplasty, inguinal herniorrhaphy, ureteroneocystostomy, urethroplasty, orchiopexy for undescended testis, urodynamic study and extracorporeal shock wave lithotripsy.

The rationale for selecting these procedures was that they were amongst the most common surgeries and interventions serving as exemplar urological procedures.

273 urologists completed the questionnaire. Simple mean scores of the four categories were determined separately for each of the 15 procedures. Subsequently, simple mean score for each surgery was measured using the calculated mean scores of the four aforementioned categories. Even though calculating the weighted mean of these four categories by considering some categories to have more weight in final mean were feasible, however, it was ignored due to lack of consensus.

Results:

60% of participants were general urologists and others included endo-urologists, onco-urologists kidney transplant fellowships, pediatric urologists, female urologists, reconstructive urologists, and andrologists.

Active urologists both in public and private medical practice participated in the polling. Urology residents were also amongst the participants. Also, urologists from almost all provinces partook in the poll.

All of the calculated codes were higher compared with current codes. Urethroplasty showed the least increment with 25.22 equivalent to 51.69%, whilst extracorporeal shock wave lithotripsy showed the most increment of 63.59 equivalent to 114.37%.

Table 1 shows the current codes, calculated codes, and their differences and percentage of these differences in each 15 procedures.

Table 1: Comparison of current and calculated procedures codes.

Discussion:

Various administrations around the world have developed different coding systems to address clinical terminologies and nomenclatures (5). In the United states, for example, the CPT Editorial Panel consisting of independent group of experts appointed by the American Medical Association Board of Trustees, is responsible for CPT code set maintaining and updating. They represent various parts of the health care industry and their task is to guarantee the evidence-based review of the code changes (6).

In Iran, medical and healthcare procedures have been described as relative value units (RVU) based on CPT coding system (7), which is currently in its third edition. Early investigations by the National Institute of Health Research showed some degrees of satisfaction regarding RVUs amongst the patients whereas some researchers reported less satisfaction amongst healthcare professionals based on their technical and methodological concerns about the new RVUs (8).

In the current study, we aimed to compare the calculated codes based on urologists' point of view. 15 urological procedures were appointed as exemplar urological procedures for investigating their values. All of the calculated codes were higher compared with current codes.

In the United States, CPT Editorial Panel meets three times each year in which hospitals, medical specialty societies, individual physicians, and third-party payers can submit their request for changes in CPT to be considered by the editorial panel (9). To make changes in CPT in low-to-middle-income countries such as Islamic Republic of Iran seem even more necessary, specially due to economic turbulences. There is also evidence suggesting that such discrepancies between the current codes and so-called "should be codes" can lead to more informal payments even in more developed countries (10).

Even though the results of this study focused solely on urologists and other involved parties' opinion are not investigated but still, it can be considered as urologists' standpoint in future changes of CPT codes. Therefore, appropriate evaluation and monitoring programs should exist to adapt the RVUs to any policy circumstances as well as environmental and systemic changes, with the aim of generating sustainable solutions for the whole health system survival.

Conclusion:

Although CPT is an important tool in valuation of medical services, making modifications to it, especially in low-to-middle-income countries seems required. In this survey, we aimed to evaluate the current surgical codes for urological procedures based on urologists' opinion. All of the calculated codes were higher compared with the current codes, indicating the necessity for changes in relative value units of urological procedures.

Acknowledgment:

The authors wish to express their gratitude to all of the urologists participated in the poll and thank to Dr. Masoud Choopani for his great contribution.

Conflict of interest:

The authors have no conflict of interest to declare.

References:

1) Meara JG, Leather AJ, Hagander L, Alkire BC, Alonso N, Ameh EA, Bickler SW, Conteh L, Dare AJ, Davies J, Mérisier ED. Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development. The Lancet. 2015 Aug 8;386(9993):569-624.
2) Bath M, Bashford T, Fitzgerald JE. What is 'global surgery'? Defining the multidisciplinary interface between surgery, anaesthesia and public health. BMJ global health. 2019 Oct 1;4(5).
3) Ducatman BS. Cytology-Diagnostic Principles and Clinical Correlates. Elsevier-Health Sciences Division; 2014.
4) Mathauer I, Wittenbecher F. Hospital payment systems based on diagnosis-related groups: experiences in low-and middle-income countries. Bulletin of the World Health Organization. 2013 Aug 6;91:746-56A.
5) Peden AH. An overview of coding and its relationship to standardized clinical terminology. Topics in health information management. 2000 Nov 1;21(2):1-9.
6) AMA: American medical association; 2019 Available from: https://www.ama-assn.org/practice-management/cpt/cpt-overview-and-code-approval [Access date: 2020]
7) Olyaeemanesh A, Manavi A, Monazzam K. Documentation and studies conducted at the Department of Health Economics. Department of Health, Ministry of Health and Medical Education, Iran. 2004.
8) Moradi-Lakeh M, Vosoogh-Moghaddam A. Health sector evolution plan in Iran; equity and sustainability concerns. International journal of health policy and management. 2015 Oct;4(10):637.

9) AMA: American medical association; 2019 Available from: https://www.ama-assn.org/about/cpt-editorial-panel/cpt-code-process [Access date: 2020]

10) Johnson SE, Newton WP. Resource-based relative value units: a primer for academic family physicians. FAMILY MEDICINE-KANSAS CITY-. 2002 Mar 1;34(3):172-6.

Table 1: Comparison of current and calculated procedures codes

Procedure	Current code	Calculated code	Difference	percent
Open Prostatectomy	42.00	97.38	55.38	131.86
TURP	55.00	101.41	46.41	84.38
PCNL	68.00	116.02	48.02	70.62
TUL	45.00	90.00	45.00	100.00
Radical Nephrectomy	62.50	113.83	51.33	82.13
Radical Prostatectomy	84.00	139.96	55.96	66.62
Hypospadias	49.00	112.59	63.59	129.78
Female incontinence Sling	40.00	90.32	50.32	125.80
Pyeloplasty	57.00	103.46	46.46	81.51
Inguianl herniorrhaphy	28.50	67.87	39.37	138.14
Reimplantation	61.00	108.00	47.00	77.05
Urethroplasty	80.00	121.35	41.35	51.69
Orchiopexy for UDT	35.00	81.10	46.10	131.71
UDS	25.00	50.22	25.22	100.88
ESWL	15.00	66.51	51.51	343.40

TURP: Tranurethral resection of the prostate, PCNL: Percutaneous nephrolithotomy, TUL: Tranurethral lithotripsy, UDT: Undescended testis, UDS: Urodynamic study, ESWL: Extracorporial shockwave lithotripsy