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Review Article

**A REVIEW ON MEDICAL CODING COURSE****Harini Uppada\***, Sireesha Bammidi, Vinitha Konathala, Tanusree Muvvala.Pharmaceutical Analysis Department, Raghu College of Pharmacy, Dakamarri,  
Visakhapatnam, Andhra Pradesh, India.**Abstract:**

*This review article on medical coding courses outlines the medical coding procedure, the codes used by medical coders such as ICD (International Classification of Diseases), CPT (Current Procedure Terminology), HAPSC (Health Care Procedural Coding System). It details the benefits for the future aspirants in medical coding field, about the consequences of medical billing and coding errors and the challenges faced by the medical coders and billers in their profession. It also highlights the importance of certified courses and its training benefits in medical coding field along with the bright career opportunities for the future aspirants.*

*Keywords: Medical coding, coders, billers, certified courses, career opportunities.*

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**INTRODUCTION:**

Medical coding is the conversion of procedures, healthcare diagnoses, medical services and equipment into medical alphanumeric codes. These codes act as the communicating language between doctors, insurance companies, insurance clearing houses, hospitals, government agencies and other health-specific organizations.

Medical coders are professionals responsible for translating physician reports into useful medical codes. They work out of public view unwitnessed in a variety of settings, ensuring all relevant information is coded accurately. While complex and detail-driven, medical coding really comes down to knowing how to navigate the three main code sets: CPT (Current Procedure Terminology), ICD (International Classification of Diseases) and HCPCS (Health Care Procedural Coding System). These code sets help coders to document the condition of a patient and describe the medical procedure performed on that patient in response to their condition.

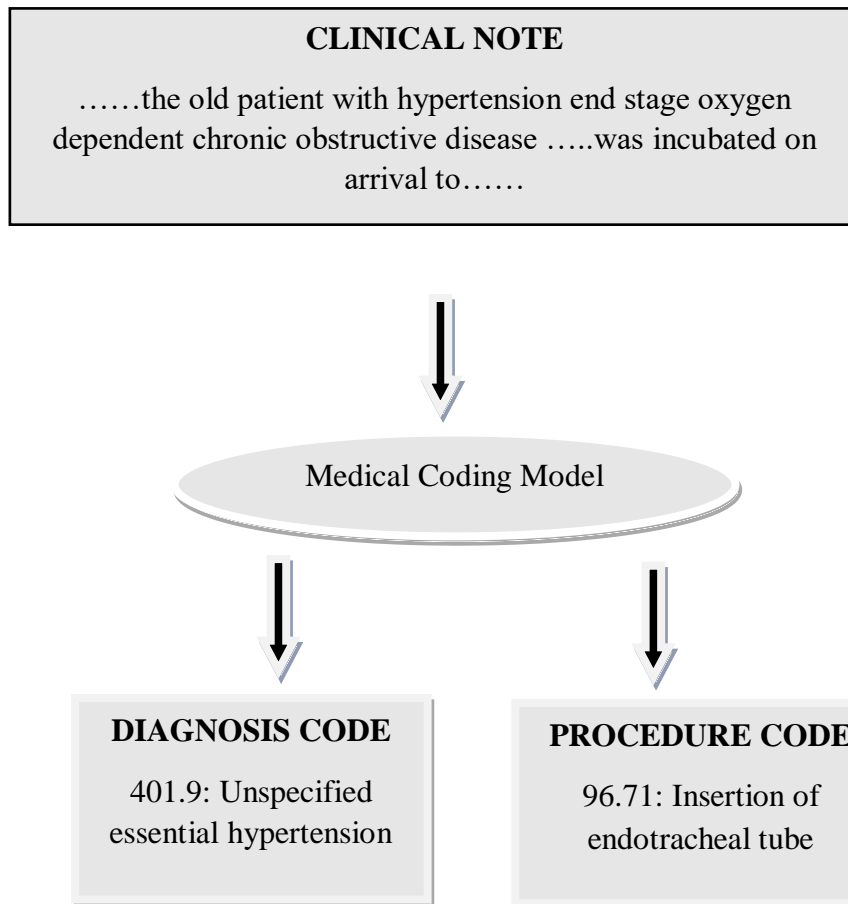
**HISTORY**

The very first reported Medical Coding system began during the 17<sup>th</sup> century in England. London's Bills of Mortality tracked disease in early modern London by John Gaunt. This was in 1665-1666 during the time of the Great Plague of London, a major epidemic of the Bubonic Plague. London's Bill displayed numerical codes that were used to organize the data. These codes showed the most recent mortality causes with the number of deaths on the back of the page. These Bills were not fully consistent so they were not fully successful. In the 1830's, Epidemiologist, Dr. William Farr proposed a consistent system for classification. It was not until the 1930's that it was

organized into the "International List of Causes of Death" which was afterwards taken over by the World Health Organization (WHO). This was used to track death rates and the international health developments. The list was later referred to as the International Classification of Diseases (ICD). In the year of 1977, ICD-9 was introduced, they added illnesses and injuries, rather than just mortality. This made it possible for doctors to provide better medical care. In 1980's everything was handwritten or in some cases typed on an electric typewriter. In 2014, the ICD-10 version was created and was much more specific, compared to prior editions containing information more on anatomy and organ systems. When ICD-10 was updated and more codes were added, it further helped in the reimbursement process. With an updated system, it required getting used to new insurance guidelines, mainly with Medicare and Medicaid. The American Medical Association (AMA) created and published CPT codes in 1966. The first edition was used as a standard of terms and descriptors of documentation for procedures in a patient's medical record or chart. This system was comprised of a four-digit coding system.

**MEDICAL CODING PROCEDURE**

Medical coding involves extracting billable information from the medical record and clinical documentation, while medical billing uses those codes to create insurance claims and bills for patients. Creating claims is where medical billing and coding intersect to form the backbone of the healthcare revenue cycle. Medical coding is the transformation of healthcare diagnosis, procedures, medical services, and equipment into universal medical alphanumeric codes.



#### ICD Codes

Within the healthcare industry, providers, coders, IT professionals, insurance carriers, government agencies and others use ICD codes to properly note diseases on health records, to track epidemiological trends and to assist in medical reimbursement decisions.

According to the American Health Information Management Association, ICD-10 provides better mapping from SNOMED CT, (Systematized Nomenclature of Medicine –Clinical terms) a multilingual vocabulary of clinical terminology that is used to capture the clinical data of a care episode. SNOMED CT to ICD-10 mapping can enable computer-assisted coding that improves the accuracy, efficiency and consistency of coding. ICD-10 procedure codes can also provide specific information about how a healthcare provider approached a medical procedure and what type of medical device was used.

#### The Key differences between ICD-9 and ICD-10

ICD-10-CM has 68,000 codes, compared with 13,000 in ICD-9-CM, according to the Centre for Medicare & Medicaid Services (CMS). ICD-10 codes also have alphanumeric categories, while ICD-9 has numeric categories and ICD-9's codes are based on three to five letters and numbers, while ICD-10's are based on three to seven letters and numbers. The seventh character was added to further specify a diagnosis and most commonly captures data about the treatment phase, as follows:

**A (Initial encounter):** Although the name implies it is the patient's initial visit, initial encounter refers to the period during which the patient is receiving active treatment for a condition.

**D (Subsequent encounter):** Subsequent encounter refers to an encounter after the patient has received active treatment, during the recovery phase.

**S (Sequela):** Sequela refers to a complication or condition that is a direct result of an injury, such as a scar.

S 8 6	0 1 1	D
<b>Category</b> <ul style="list-style-type: none"> <li>S=injuries, poisoning and certain other consequences of external causes related to single body region.</li> <li>S86=injuries of muscle, fascia, and tendon at lower leg.</li> </ul>	<b>Etiologic, anatomic site, severity, other vital details.</b> <ul style="list-style-type: none"> <li>S86.0=Injury of Achilles tendon</li> <li>S86.01=Strain of Achilles tendon</li> <li>S86.011=Strain of right Achilles tendon</li> </ul>	<b>Extension</b> Primarily used to document episode of other conditions with external causes <ul style="list-style-type: none"> <li>A=Initial Encounter</li> <li>D=Subsequent Encounter</li> <li>S=Sequela</li> </ul>

### ICD-10-CM vs. ICD-10-PCS

In United States, ICD-10 is split into two systems: ICD-10-CM (Clinical Modification), for diagnostic coding and ICD-10-PCS (Procedure Coding System), for inpatient hospital procedure coding. Another difference is the number of codes: ICD-10-CM has 68,000 codes, while ICD-10-PCS has 87,000 codes.

### ICD-10 vs. ICD-11

WHO released an advance preview of ICD-11 on June 18, 2018, with 55,000 codes for causes of death, diseases and injuries. The new revision was designed to simplify the coding structure, so healthcare providers can more easily record medical conditions. ICD-11 adds gaming disorder to the addictive disorders section and expands sections on allergies and immune system disorders, cancer, cardiology, dementia, diabetes and infectious diseases. The new revision will also include new chapters on sexual health and traditional medicine.

### CPT Codes

Integral to medical services billing and procedures for reimbursement, CPT is the language spoken between providers and payers. Current Procedural Terminology, more commonly known as CPT, refers to a set of medical codes used by physicians, allied health professionals, non physician practitioners, hospitals, outpatient facilities and laboratories to describe the procedures and services they perform. CPT codes consist of five characters. The majority of codes are numeric, but some codes have a fifth alpha character, such as A, F, T, or U. Examples include:

**33273:** Transcatheter removal of permanent lead less pacemaker, right ventricular, including imaging guidance (fluoroscope, venous ultrasound, ventriculography, femoral venography), when performed.

**0004A:** Immunization administration by intramuscular injection of severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) vaccine, mRNA-lipid nanoparticles, spike protein, preservative

free, 30 mcg/0.3mL dosage, diluent reconstituted; boosted dose.

**3006F:** Chest X-ray results documented and reviewed (CAP).

### HCPCS Codes

Health Care Procedural Coding System commonly pronounced as “hick picks,” are a set of codes based on CPT codes. Developed by the CMS (the same organization that developed CPT), and maintained by the AMA. HCPCS codes primarily correspond to services, procedures, and equipment not covered by CPT codes. This includes durable medical equipment, prosthetics, ambulance rides, and certain drugs and medicines. HCPCS is also the official code set for outpatient hospital care, chemotherapy drugs, Medicaid and Medicare, among other services. Since HCPCS codes are involved in Medicaid and Medicare, it’s one of the most important code a medical coder can use. The HCPCS code set is divided into two levels. The first of these levels is identical to the CPT codes that we covered earlier. Level II is a set of alphanumeric codes that is divided into 17 sections, each based on an area of specificity, like Medical and Laboratory or Rehabilitative Services.

Like CPT codes, each HCPCS code should correspond with a diagnostic code that justifies the medical procedure. It’s the coders responsibility to make sure whatever outpatient procedure is detailed in the doctor’s report makes sense with the listed diagnosis, typically described via an ICD code.

### Medical Dictionary For Regulatory Activities (MedDRA)

The MedDRA is to promote selection of accurate and consistent terms and understanding of the impact of various options of data retrieval with the output in the world-wide use. This consistency for increase in precision and uniformity in medical terminology which in turn facilitates common understanding of data shared among academic, commercial and regulatory entities.

### Medical Billing and Coding Process

Coding and billing complexity is commonly cited as a causal factor in physician's error. Rules of coding are largely subjective and when applied by multiple users, often lead to different results. ICD-10 for less common conditions such as Down Syndrome, eosinophilic esophagitis, congenital heart disease, genetic blood disorders and surgery should be used cautiously.

Most people see a doctor and give no further thought to the people who do the paperwork. But medical billers and coders, play an important behind-the-scenes role in keeping patient records current and accurate and bridging the gap between clinical care and administration. Medical coding and billing professionals are essential to the organization and management of health information and data for the purpose of billing of medical expenses of patients and securing reimbursement from insurance providers.

Medical billing and coding careers serve to connect the clinical and business aspects of healthcare. The hospitals, doctors, offices and other healthcare facilities are turning to medical billers and coders to handle specialized administrative duties. Although the job responsibilities of each can overlap especially in smaller settings each plays a specific role in the workplace.

These are the four steps to show how medical billing and coding professionals interact with healthcare providers, patients and insurance companies.

**Step-1:** Patients visit to a physician or going through treatment, from a simple yearly check-up to a complex surgery.

**Step-2:** Medical coders review diagnoses, test results, procedures and assign them the corresponding medical codes.

**Step-3:** Medical billers enter coded information onto bills in the proper order and then submit them to insurance companies or clients for payment.

**Step-4:** Insurance companies review the procedures or treatments and reimburse according to the terms of the coverage plan.

### Consequences of Medical Coding and Billing Errors

The most common medical billing and coding errors lead to high contradiction rates and may compromise patient care, but the more serious consequences of upcoding and acts of medical abuse and fraud could affect medical coders facing federal penalties and expensive fines. The most common medical coding errors are

**1) Sloppy documentation:** When physicians or other healthcare providers turn in sloppy paperwork, it's difficult for medical billing specialists to assign the right codes correctly. Misreading or handwriting errors may also contribute to under coding.

**2) Hurried intake/missed information:** Entering incorrect information for patients and insurance providers is a top mistake. Especially in emergencies, this information can take a backseat in a panicked moment and cause an issue later on.

**3) Unbundling:** Using separate codes for linked procedures when there's a single code for the whole group of procedures is known as unbundling. This illegal act increases the total claim amount and inflates profit.

**4) Upcoding:** This happens when your team uses a billing code for a more complicated or expensive service than what was actually done. This also includes tests done by technicians being coded as performed by physicians. Since more serious codes demand higher payments.

**5) Under coding:** Under coding happens when patients are not billed for all the treatment or services rendered. This suspicious practice may help a patient avoid a high-cost bill or help emergency department avoid audits.

**6) Duplicate billing:** In medical billing, double billing is commonly defined as a provider's attempt to bill Medicare be it a private insurance company or the patient for the same treatment or when two providers attempt to get paid for services rendered to the same patient for the same procedure on the same date. Double billing also occurs when a provider attempts to charge more than once for the same service. For example, by billing using an individual code and again as a part of a bundled set of tests. Double billing is also known as duplicate billing.

**7) Overusing the modifier 22-increased procedural services:** Using this means the patient's procedure required more work than normal, which would come with an increase in price. This needs proper documentation to get approved.

### Challenges Faced By Medical Billers and Coders

Medical billing and coding experts perform many administrative duties to establish and maintain up to date records and databases. They use various classification systems to organize patient information for various purposes. For example, insurance reimbursements, treatment history or information for registries.

**1) Medical information is under medical privacy laws:**

Dealing with sensitive data obeys many acts, rules, and policies, such as HIPAA(Health Insurance Portability and Accountability Act) Privacy & Security Rules or the HITECH Act (Health Information Technology For Economic and Clinical Health).

#### 2) Getting to know medical billing and coding systems:

There are standard systems that students need to know during medical billing and coding training. EMR and EHR software are the most common among them. The Electronic Medical Record (EMR) is equivalent of a patient's chart from one healthcare facility. The Electronic Health Record (EHR) contains a broader picture of the patient's health from multiple doctors.

#### 3) Possible errors when extracting data from medical records:

The integration of the latest technologies has changed medical billing and coding over the years. Due to the sensitive nature of data, concentration and a good level of expertise are important, either way errors are common and a medical billing professional has to try to prevent them.

#### 4) Technical updates in medical billing and coding:

The CPT and ICD code sets are globally recognized medical codes used for defining specific services and conditions. A recent example is the release of emergency ICD codes in response to the COVID-19 outbreak.

#### 5) Medical billing and coding involves third-parties:

Medical billing and coding experts must make a constant effort to achieve synergy between all parties involved. This includes regular communication with government agencies, insurance companies, Health Maintenance Organizations (HMOs) and employers.

#### 6) Medical billing and coding certification renewal:

Similarly, to other allied health professionals medical billers and coders must renew their professional certificates every couple of years. NHA (National Health Authority), NCCT (National Council for cooperative Training) and AHIMA (American Health Information Management Association) all require members to renew their certifications by completing continuing education units and paying a renewal fee. Despite the ongoing commitment, maintaining certification proves you are a lifelong learner and increases your employability.

#### Benefits of Medical Coding Course





**Working hours for medical coders:**

Medical coders usually work 40 hours a week or part-time. Depending on the work environment, they can also work alternative hours and manage schedule according to their needs, if they align with what the employer is looking for. They can work from home. Many healthcare providers outsource their work, so there is no need to work from a specific office location. Many billers and coders are independent contractors.

**Medical coders are beneficial for doctors:**

Documenting patients history according to Diagnosis Related Group (DRG) system are time consuming. So, the medical coding is easy to code the information for the doctors. The beneficial tasks of documentation in medical coding results in the highest potential of employing medical documentation while doctors have the possibility to spend more time on treating their patients.

**Scope and growth of medical coding amid pandemic (COVID 19):**

The rise of the pandemic in 2020 let the healthcare industry take the centre stage globally bringing for the challenges both hidden and visible that needed immediate attention. In India, the healthcare offshoring industry has witnessed business growth. India is known to be the second-largest healthcare outsourcing destination. Nearly 80 per cent of healthcare business from USA is outsourced to India. Thus, the demand for professional medical coders increased and they play a crucial role in the healthcare delivery system.

The need and demand for medical coding started, since the recent advance of Computer-Assisted Coding (CAC) has emerged which helped to ease the job of medical coders world wide.

**How to be a medical coder?**

To pursue medical coding, an individual must have a bachelor's or master's degree preferably from a life sciences background. Bachelor's degree in biotechnology, microbiology, botany, zoology, physiotherapy, B.pharma etc are some of the degrees useful to become a coder. One must have the analytical ability to read and analyse medical records and patient details by using the right codes for billing procedures. The average salary for a beginner in medical coding in India is 2.6 lakhs per year and ranges between 1.5 lakh to 4.3 lakh rupees. These salary estimates are based on 7637 salaries received from various medical coders across industries.

**Institutes offering certificate in medical coding:**

Government institutes like Institute of Good Manufacturing Practices India (IGMPI) CIGMA Medical Coding Academy, National Institute of Medical Coding offer courses in medical coding in India. After successful completion, the participants will receive a certificate of Post Graduate Diploma in Medical Coding. The Certified Professional Coder (CPC) certification offered by American Academy of Professional Coders is the most popular in the medical coding field. Besides several private online and offline platforms are available that offer short-term training and certification courses in this subject.

**CONCLUSION:**

This brief review emphasizes on the medical coding procedure, importance of certified medical coders rather than non certified coders because of who's mistake there might be severe consequences of medical coding and billing errors leading to a huge loss financially and to patients well being. There are several specializations in medical coding and it is the best career choice or job opportunity for graduates providing both online and offline work space with better job security which is an important factor for improving the quality of life..

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