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## CHAPTER 1

# Internship Organisation Profile

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### 1. Introduction

Anjanaas Foundation is a registered non-profit organisation based in Avanigadda, Krishna District, Andhra Pradesh. The foundation is dedicated to empowering individuals through education, skill development, health, agriculture, and community development. Built upon a decade-long legacy of educational service, Anjanaas Foundation has expanded its mission to address social protection and financial independence for the most vulnerable sections of society. The foundation plays a significant role in fostering experiential learning through its well-structured internship programmes.

### 2. Vision

To create a self-sustaining society by providing quality education, skill development, and opportunities for holistic growth, ensuring that every individual can contribute meaningfully to the community.

### 3. Mission

- To bridge the gap between education and employment by equipping individuals with industry-relevant skills.
- To provide inclusive learning environments catering to diverse communities, including underprivileged and differently-abled individuals.
- To promote innovation, entrepreneurship, and sustainability through practical training programmes.

### 4. Objectives

- To offer structured internship programmes providing hands-on experience in various disciplines.
- To collaborate with educational institutions to integrate internships into academic curricula.
- To enhance employability through training in high-demand skills including healthcare, IT, business management, and life sciences.
- To promote research and development through skill-based learning initiatives.

## 5. Internship Programme Overview

### a. Internship Scope and Reach

Anjanaas Foundation has provided more than 10,000 internship opportunities across various universities in Andhra Pradesh. The foundation collaborates with institutions such as Krishna University through Memoranda of Understanding, ensuring academic recognition for participating students.

### b. Key Training Areas

#### Healthcare and Life Sciences

Medical Coding, Life Sciences, Pharmacy, Food Technology, Nursing Administration.

#### Information Technology and Digital Skills

Python, Data Science, Cloud Computing, Full Stack Development, Generative AI, Machine Learning.

#### Business and Management

Office Administration, Tally, SAP, Tourism, Competitive Exam Preparation.

### c. Industry Collaboration and Career Development

Anjanaas Foundation works with leading healthcare organisations, hospitals, insurance companies, and BPO firms across India, ensuring that trained interns receive priority consideration in recruitment. Practical learning experiences prepare interns for real-world healthcare administration and medical coding roles.

## CHAPTER 2

# Executive Summary

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This internship programme focused on the study and practical application of Medical Coding — the systematic process of converting medical diagnoses, procedures, and services into standardised alphanumeric codes drawn from internationally recognised classification systems. The training was conducted under the guidance of Anjanaas Foundation and was designed to equip participants with the foundational knowledge and applied skills required for entry-level medical coding roles in hospitals, insurance companies, BPO firms, and healthcare administration offices.

The programme commenced with an introduction to the scope and importance of medical coding, followed by a comprehensive study of medical terminology — the language of healthcare. Students learned to decode medical terms by identifying prefixes, root words, suffixes, and combining vowels, and applied this knowledge systematically across ten body systems including cardiovascular, respiratory, digestive, nervous, musculoskeletal, urinary, reproductive, endocrine, integumentary, and lymphatic systems.

The core coding training covered the three primary coding systems used in healthcare. The International Classification of Diseases (ICD-10-CM) was studied in depth, covering its historical evolution from ICD-1 through ICD-11, its alphanumeric code structure, all 22 chapters of disease classification, coding guidelines, and practical application to clinical scenarios. The Current Procedural Terminology (CPT) system was then introduced, covering its five-digit numeric code structure, six main sections from Evaluation and Management through Medicine, modifiers, add-on codes, and the relationship between CPT procedure codes and ICD diagnosis codes.

The Healthcare Common Procedure Coding System (HCPCS) was studied as the complement to CPT for coding medical supplies, durable medical equipment, injectable drugs, and ambulance services. Health Insurance Portability and Accountability Act (HIPAA) compliance was introduced, covering the Privacy Rule, Security Rule, Transaction and Code Set Standards, patient rights, and coding responsibilities under HIPAA.

Revenue Cycle Management (RCM) was studied as the integrated framework that connects clinical coding to billing, claims submission, payment posting, denial management, and patient collections. The programme concluded with applied case study practice and the development of the mini project titled 'Medical Coding Process: From Diagnosis to Insurance Claim,' which required students to execute and document a complete end-to-end medical coding workflow for multiple clinical scenarios.

## Sector of Development

This internship falls under the Healthcare Administration and Medical Informatics sector. The training covered medical coding systems (ICD-10-CM, CPT, HCPCS), medical terminology, healthcare compliance (HIPAA), revenue cycle management, and applied clinical documentation analysis across multiple medical specialties.

## Learning Objectives

- To understand the purpose, scope, and importance of medical coding in healthcare administration and reimbursement.
- To develop proficiency in medical terminology including prefixes, suffixes, root words, and system-specific vocabulary across ten body systems.
- To learn the structure, chapters, guidelines, and clinical application of ICD-10-CM diagnosis codes.
- To understand CPT code structure, sections, modifiers, and the relationship between diagnosis and procedure codes.

- To study HCPCS Level I and Level II codes for supplies, equipment, drugs, and non-physician services.
- To understand HIPAA regulations, patient data privacy requirements, and coding compliance obligations.
- To develop knowledge of Revenue Cycle Management and the role of accurate coding in claims processing.
- To apply all coding knowledge to integrated clinical case studies involving ICD, CPT, and HCPCS codes.
- To design and document a complete medical coding workflow as the mini project deliverable.

## Outcomes Achieved

- Developed comprehensive medical terminology knowledge across all major body systems.
- Gained practical ability to assign ICD-10-CM diagnosis codes to clinical scenarios with appropriate specificity.
- Learned to identify and apply CPT procedure codes with correct modifiers for various medical services.
- Understood HCPCS Level II coding for supplies, equipment, and drugs in billing contexts.
- Acquired knowledge of HIPAA compliance requirements relevant to medical coders.
- Understood the Revenue Cycle Management process and the coder's role within it.
- Applied integrated coding skills to multi-system clinical case studies.
- Completed the mini project demonstrating a full diagnosis-to-claim coding workflow.

## CHAPTER 3

## Internship Part

### Description of Activities and Responsibilities

The internship focused on developing theoretical knowledge and practical application skills in medical coding. Students progressed from foundational healthcare terminology through the three major coding systems — ICD-10-CM, CPT, and HCPCS — to HIPAA compliance, revenue cycle management, applied case study practice, and the final mini project submission.

Activities carried out included studying medical coding principles and classification systems, analysing clinical documentation to identify codeable diagnoses and procedures, assigning codes from ICD-10-CM, CPT, and HCPCS to simulated patient scenarios, studying HIPAA compliance requirements, understanding the RCM workflow, practising integrated coding through case studies, and completing the mini project.

### Work Environment and Tools Used

The internship was conducted in a structured online learning environment organised by Anjanaas Foundation. Training was delivered through live Zoom sessions and recorded lectures. Reference materials including the Medical Coding Study Guide and Comprehensive Guide were provided to students as core learning resources.

| Resource / Tool            | Purpose                                                             |
|----------------------------|---------------------------------------------------------------------|
| Medical Coding Study Guide | Primary reference covering all coding systems, terminology, and RCM |
| ICD-10-CM Code Manual      | Reference for diagnosis code assignment and guidelines              |
| CPT Code Manual (AMA)      | Reference for procedural code assignment and modifiers              |
| HCPCS Level II Code Set    | Reference for supplies, equipment, drug, and service codes          |
| CPC Model Question Bank    | Practice questions across ICD, CPT, HCPCS, and HIPAA topics         |
| Clinical Case Studies      | Three integrated coding scenarios for applied practice              |
| Zoom                       | Live interactive class sessions with faculty                        |
| YouTube                    | Recorded lectures for revision and self-paced learning              |

### Weekly Work Schedule Overview

#### Weeks 1 – 2 — Foundations

Introduction to medical coding and its importance in healthcare; comprehensive study of medical terminology across prefixes, root words, suffixes, and all ten body systems.

#### Weeks 3 – 6 — Core Coding Systems

ICD-10-CM diagnosis coding including structure, chapters, and guidelines; CPT procedural coding including all six sections and modifiers; HCPCS Level II codes for supplies and equipment; HIPAA compliance and Revenue Cycle Management.

#### Weeks 7 – 8 — Applied Practice and Project

Integrated case study coding practice combining ICD, CPT, and HCPCS; development of the mini project 'Medical Coding Process: From Diagnosis to Insurance Claim'; documentation preparation and final submission.

## Tasks Performed

- Studying the purpose, importance, and applications of medical coding in billing, research, and public health.
- Learning medical terminology including prefixes, root words, suffixes, and system-specific terms across ten body systems.
- Studying ICD-10-CM code structure, the 22-chapter classification system, and official coding guidelines.
- Assigning ICD-10-CM diagnosis codes to clinical documentation with appropriate specificity and sequencing.
- Learning CPT code structure, the six main sections, modifiers, add-on codes, and Category II/III codes.
- Applying CPT codes to procedural scenarios across E/M, Surgery, Radiology, Pathology, and Medicine sections.
- Studying HCPCS Level I and Level II code categories for supplies, drugs, equipment, and ambulance services.
- Learning HIPAA Privacy Rule, Security Rule, Transaction Standards, and coder compliance requirements.
- Understanding the complete Revenue Cycle Management process from patient registration to collections.
- Applying integrated ICD, CPT, and HCPCS coding to three comprehensive clinical case studies.
- Practising CPC model examination questions across all coding domains.
- Developing the mini project documentation covering a complete end-to-end coding scenario.

## Skills Acquired

### Medical Terminology

Ability to decode and construct medical terms using prefixes, roots, and suffixes across all major body systems.

### ICD-10-CM Coding

Proficiency in assigning accurate, specific diagnosis codes following official guidelines and sequencing rules.

### CPT Coding

Skill in identifying and applying procedural codes with correct modifiers across all service categories.

### HCPCS Coding

Understanding of Level II code categories for supplies, drugs, DME, and ancillary services.

### HIPAA Compliance

Knowledge of patient data privacy obligations and coding compliance requirements under HIPAA.

### Revenue Cycle Awareness

Understanding of how accurate coding drives claims processing, reimbursement, and denial management.

## Reflection

The Medical Coding internship provided a thorough and well-structured introduction to a specialised field that sits at the intersection of clinical knowledge, administrative precision, and regulatory compliance. The progressive structure of the programme — from terminology foundations through coding systems to applied case studies — created a coherent learning pathway that built both conceptual understanding and practical coding competency.

Working through clinical case studies was the most impactful phase of the programme. Translating a physician's clinical notes into a complete set of ICD, CPT, and HCPCS codes required integrating knowledge from all preceding weeks. The case studies for diabetes with chronic kidney disease, rotator cuff surgical repair, and a motor vehicle accident with multiple injuries demonstrated the complexity and precision that professional coding demands.

Overall, the programme developed strong analytical reading skills, attention to detail, and systematic thinking — all essential qualities for a medical coding career. The mini project provided a structured opportunity to apply and document these skills in a professional-grade deliverable.



## CHAPTER 4

# Outcomes Description

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### Work Environment Experience

The internship was conducted in a structured online learning environment organised by Anjanaas Foundation. Live training sessions delivered via Zoom were supplemented by comprehensive study materials and recorded lectures. The environment maintained a professional academic tone appropriate to the healthcare sector, emphasising precision, compliance, and systematic reasoning.

Students worked with reference materials that mirror real professional coding resources — including structured study guides covering ICD-10-CM, CPT, and HCPCS code manuals, HIPAA regulations, and revenue cycle workflows. This gave the internship a professional orientation beyond academic study.

### Real-Time Technical Skills Acquired

Students developed a comprehensive set of technical skills directly applicable to medical coding and healthcare administration careers.

The medical terminology component built the foundational language competency that underlies all coding work. Students can now decode complex medical terms encountered in clinical documentation, identify the body system and condition described, and select the appropriate coding category. This skill is indispensable for reading physician notes, discharge summaries, and operative reports.

ICD-10-CM coding proficiency was developed through systematic study of all 22 chapters, the code structure with its letter-digit-decimal format, and the official guidelines for sequencing principal and secondary diagnoses, applying 7th character extensions, using placeholder 'X' characters, and coding external causes. Students can now locate codes using the Alphabetic Index and verify specificity in the Tabular List.

CPT coding skills were developed across all six code sections — Evaluation and Management, Anesthesiology, Surgery, Radiology, Pathology and Laboratory, and Medicine. Students learned to apply modifiers such as -25, -59, -26, and -TC to provide additional billing information, and understand the Global Surgical Package concept and add-on code usage.

HCPCS Level II competency was developed through study of the alphanumeric code structure and the major prefix categories covering ambulance services, durable medical equipment, injectable drugs, and temporary codes. Students understand when to apply HCPCS codes in place of or alongside CPT codes.

### Managerial Skills Acquired

The internship developed several professional and managerial competencies relevant to healthcare administration. The structured weekly schedule required time management and consistent self-directed study, particularly for the extensive terminology and code classification content.

The mini project required systematic planning — defining the clinical scenarios, identifying codeable elements, assigning and sequencing codes, and documenting the rationale for each coding decision. This project management experience is directly transferable to professional coding audit and compliance documentation tasks.

### Communication Skills Development

Medical coding is fundamentally a communication discipline — translating the language of clinical medicine into the standardised language of codes and claims. The internship strengthened this translational

communication ability through regular coding exercises and case study analysis.

Written communication skills were developed through the preparation of the mini project documentation and this logbook. Students learned to present coding decisions with clear rationale, reference the appropriate guideline or code section, and structure their documentation to professional standards.

## **Participation in Collaborative Learning**

Students participated in live session discussions about coding ambiguities, guideline interpretation, and case study approaches. These discussions developed the ability to reason through coding decisions systematically and to recognise that complex clinical scenarios often require careful review of multiple guidelines before a final code assignment is made.

## **Technological Developments Observed**

During the internship, students observed several significant developments in the medical coding field. The ongoing transition from ICD-10 to ICD-11 — with its digitally native architecture, enhanced specificity, and new chapters for traditional medicine and antimicrobial resistance — represents a major shift that India is actively preparing for through the Ayushman Bharat Digital Mission.

The growing application of Artificial Intelligence and Natural Language Processing to automate code suggestion from clinical documentation was noted as a significant technological trend. However, AI-assisted coding still requires qualified human coders for review, validation, and compliance — reinforcing the continued importance of trained medical coding professionals.

## **Conclusion**

The Medical Coding internship provided a rigorous, structured, and professionally oriented training experience. Students developed the foundational knowledge and applied skills required for entry-level medical coding roles, with particular strength in clinical documentation analysis, ICD-10-CM and CPT code assignment, and understanding of the regulatory and reimbursement environment in which medical coders operate.

With India's healthcare sector expanding rapidly and insurance penetration growing through schemes like Ayushman Bharat, the demand for trained medical coders in hospitals, BPO firms, insurance companies, and consulting organisations is increasing. The skills developed in this programme provide a strong foundation for this growing career pathway.

**CHAPTER 5**

# Photos and Video Links

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## Photographs

Search for images related to the topics covered in this internship programme — medical coding reference books, ICD-10-CM code charts, CPT manuals, hospital billing workflows, anatomy diagrams of body systems, sample insurance claim forms, and coding workstation setups. Print them in colour, cut, and paste them in this section.

## Video Links

All class sessions for this internship programme were recorded and uploaded to the Anjanaas Foundation YouTube channel as a playlist. Students are encouraged to use these recordings for revision and reference.

### YouTube Course Playlist :

[https://youtube.com/playlist?list=PLx3CGw\\_4F7GzaawMAN6JNrNqI7yXgdGNx&si=DJQ7Ud9WjbM3\\_UsZ](https://youtube.com/playlist?list=PLx3CGw_4F7GzaawMAN6JNrNqI7yXgdGNx&si=DJQ7Ud9WjbM3_UsZ)

## Zoom Meeting Link

Live training sessions for this programme were conducted through Zoom. The meeting link is provided below.

### Zoom Meeting Link :

<https://us06web.zoom.us/j/88520931335?pwd=hbiahAlblcpZsHmt0TgBLiQGy2UB2U.1>

## CHAPTER 6

## Activity Log

## WEEK 1 — Introduction to Medical Coding and Medical Terminology — Part I

| Day   | Brief Description of Activity                                                                               | Learning Outcome                                                                        | Person In-Charge |
|-------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------|
| Day 1 | What is Medical Coding: definition, purpose, and role in healthcare billing and reimbursement               | Understanding the function and importance of medical coding in the healthcare ecosystem | Faculty          |
| Day 2 | Importance of medical coding: accurate billing, standardisation, legal compliance, and healthcare analytics | Recognising why precise coding matters for hospitals, insurers, and patients            | Faculty          |
| Day 3 | Applications of medical coding: RCM, insurance claims, public health reporting, clinical research           | Mapping medical coding to real-world healthcare administration contexts                 | Faculty          |
| Day 4 | Medical coding in India: Ayushman Bharat, NDHM, coding challenges, and outsourcing industry                 | Understanding the Indian healthcare coding landscape and career opportunities           | Faculty          |
| Day 5 | Introduction to medical terminology: word structure — prefix, root, combining vowel, suffix                 | Learning the building blocks used to construct and decode medical terms                 | Faculty          |
| Day 6 | Common prefixes and suffixes: brady-, tachy-, hyper-, hypo-, -itis, -ectomy, -algia, -pathy                 | Practising prefix and suffix recognition through examples across body systems           | Faculty          |

**Objective:** To introduce the scope and importance of medical coding and establish the foundational medical terminology skills required for clinical documentation analysis.

## Detailed Report

The first week of the internship opened with a comprehensive introduction to medical coding as a professional discipline. Students learned that medical coding is the systematic process of transforming clinical descriptions of diagnoses and procedures into universal alphanumeric codes drawn from standardised classification systems including ICD, CPT, and HCPCS. The central role of medical coding as the bridge between the healthcare provider and the insurance payer was established, demonstrating how every coded claim enables reimbursement, compliance, and data-driven healthcare management.

The importance of medical coding was studied across five dimensions: accurate billing and reimbursement, standardisation of health communication across institutions and countries, legal compliance and audit readiness, healthcare data analytics for research and policy, and enhanced patient care through clear medical record maintenance. Students recognised that coding errors carry direct financial and legal consequences, making precision a professional imperative.

The applications of medical coding were then mapped to specific real-world functions — Revenue Cycle Management, insurance claim processing, public health reporting to WHO and ICMR, clinical trials, hospital resource allocation, and telemedicine billing. The Indian context was studied specifically, including the role of coding in Ayushman Bharat PM-JAY claims, the National Digital Health Mission's push for ICD-11 adoption, and India's leadership in medical coding outsourcing for US and UK healthcare clients.

The second half of the week introduced medical terminology — the structured language of healthcare. Students learned that most medical terms are constructed from a combination of a prefix (modifying the beginning), a root word (carrying the core meaning, usually a body part), a combining vowel (typically 'o', easing pronunciation), and a suffix (indicating a condition, procedure, or disease). Common prefixes including brady-, tachy-, hyper-, hypo-, dys-, peri-, intra-, and post- were studied alongside foundational suffixes including -itis, -ectomy, -algia, -emia, -oma, -osis, -pathy, -logy, and -scopy.

## WEEK 2 — Medical Terminology — Part II and Body Systems

| Day   | Brief Description of Activity                                                                           | Learning Outcome                                                                  | Person In-Charge |
|-------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------|
| Day 1 | Root words: cardi/o, neur/o, gastr/o, hepat/o, oste/o, derm/o, hem/o, nephro/o — meanings and examples  | Building vocabulary of the most common body-system root words                     | Faculty          |
| Day 2 | Cardiovascular and Respiratory systems: anatomy, key terms, and coding-relevant vocabulary              | Applying terminology to the heart, vessels, lungs, and airways                    | Faculty          |
| Day 3 | Digestive and Nervous systems: anatomy, key terms, and clinical terminology                             | Learning the language of gastroenterology and neurology for coding contexts       | Faculty          |
| Day 4 | Musculoskeletal, Urinary and Reproductive systems: anatomy, key terms, and surgical terminology         | Understanding bone, joint, muscle, kidney, and reproductive coding vocabulary     | Faculty          |
| Day 5 | Endocrine, Integumentary and Lymphatic systems: anatomy, key terms, and disease terminology             | Completing the full system-wise medical terminology framework                     | Faculty          |
| Day 6 | Terminology practice: combining prefixes, roots, and suffixes to build and decode complex medical terms | Reinforcing terminology skills through active construction and decoding exercises | Faculty          |

**Objective:** To complete the study of medical terminology across all ten body systems and build the analytical reading skill required for clinical documentation interpretation.

### Detailed Report

The second week extended medical terminology study to the full set of root words used across all major body systems. Students learned key roots including cardi/o (heart), neur/o (nerve), gastr/o (stomach), hepat/o (liver), oste/o (bone), derm/o (skin), hem/o (blood), and nephro/o (kidney), alongside system-specific combining forms that appear frequently in clinical documentation and coding manuals.

System-wise anatomy, physiology, and terminology were then studied in depth. The cardiovascular system was covered first, including the myocardium, arteries, veins, and capillaries, with key terms such as arrhythmia, angioplasty, and bradycardia. The respiratory system followed, covering the bronchi, pleura, trachea, and lungs with terms such as bronchitis, asthma, and pneumonia. Students mapped each anatomical structure to its medical coding context — recognising the body system categories that correspond to ICD-10-CM chapters.

The digestive and nervous systems were then studied. Digestive system terms including gastritis, cholecystectomy, colitis, and gastroenteritis were learned alongside the nervous system vocabulary of epilepsy, meningitis, neuropathy, and encephalopathy. The musculoskeletal system — covering osteoarthritis, myalgia, tendinitis, and arthroscopy — was studied alongside the urinary system terms nephritis, cystitis, and urolithiasis.

The endocrine, integumentary, and lymphatic systems completed the full system survey, covering diabetes mellitus, hyperthyroidism, dermatitis, melanoma, lymphadenopathy, and splenectomy. The week concluded with active terminology practice — breaking down complex medical terms from sample clinical documents and reinforcing knowledge using the system-wise reference tables in the study guide.

### WEEK 3 — International Classification of Diseases (ICD-10-CM)

| Day   | Brief Description of Activity                                                                                                                                  | Learning Outcome                                                                        | Person In-Charge |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------|
| Day 1 | History and evolution of ICD: from ICD-1 (1900) through ICD-10 to ICD-11 and Indian adoption                                                                   | Understanding ICD's century-long development and current relevance                      | Faculty          |
| Day 2 | ICD-10-CM code structure: letter-digit format, decimal specificity, 7th character extensions, and placeholder X                                                | Learning to read and construct ICD-10-CM alphanumeric codes                             | Faculty          |
| Day 3 | ICD-10-CM chapters 1–11: Infectious diseases, Neoplasms, Blood disorders, Endocrine, Mental, Nervous, Eye, Ear, Circulatory, Respiratory, Digestive            | Mapping disease categories to their corresponding ICD chapters and code ranges          | Faculty          |
| Day 4 | ICD-10-CM chapters 12–22: Skin, Musculoskeletal, Genitourinary, Pregnancy, Perinatal, Congenital, Symptoms, Injury, External Causes, Z codes, Special Purposes | Completing the ICD chapter mapping with Z codes and injury coding                       | Faculty          |
| Day 5 | ICD coding guidelines: principal diagnosis, sequencing rules, multiple coding, combination codes, acute vs chronic conditions                                  | Applying official coding guidelines to determine correct code assignment and sequencing | Faculty          |
| Day 6 | ICD coding practice: assigning codes from clinical scenarios covering diabetes, hypertension, fractures, and neoplasms                                         | Hands-on application of ICD-10-CM coding to realistic clinical documentation            | Faculty          |

**Objective:** To develop practical ICD-10-CM coding proficiency covering the full code structure, all 22 classification chapters, and official coding guidelines.

#### Detailed Report

The third week introduced the International Classification of Diseases (ICD) — the global standard diagnostic tool published by the World Health Organisation and used worldwide for epidemiology, health management, and clinical coding. Students studied the historical evolution of ICD from its origins in 18th-century mortality classification through ICD-1 in 1900, the major expansion in ICD-6 (1949) to include morbidity, the numeric system of ICD-9 (1977), the alphanumeric architecture of ICD-10 (1990), and the digitally native ICD-11 (2018) — with its new chapters, enhanced specificity, and planned adoption in India through the Ayushman Bharat Digital Mission.

The ICD-10-CM code structure was studied in detail. Students learned that every ICD-10-CM code begins with a letter representing a disease chapter, followed by two digits identifying the disease category, and an optional decimal with one to two additional digits providing subcategory specificity. The placeholder 'X' character was explained as a code structure preservation device enabling future expansion, and the 7th character extension system — used primarily in injury, poisoning, and obstetric codes — was studied, with 'A' indicating initial encounter, 'D' subsequent encounter, and 'S' sequela.

All 22 ICD-10-CM chapters were studied and mapped to their code ranges and disease categories. Students learned to navigate from Chapter 1 (Infectious diseases, A00-B99) through neoplasms, blood disorders, endocrine diseases, mental disorders, nervous system diseases, and cardiovascular conditions to the final

chapters covering injuries (S00-T88), external causes (V01-Y98), Z codes for health status factors (Z00-Z99), and U codes for special purposes including COVID-19 (U07.1).

Official coding guidelines were then studied — covering the selection of the principal diagnosis, sequencing of secondary diagnoses and comorbidities, the use of combination codes that capture both a condition and its manifestation in a single code, rules for coding acute and chronic conditions together, and the requirement to assign external cause codes alongside injury codes. Practical coding exercises assigned ICD-10-CM codes to clinical scenarios including Type 2 diabetes with nephropathy (E11.21), essential hypertension (I10), unspecified asthma (J45.9), and femur shaft fracture with external cause for motor vehicle accident.



## WEEK 4 — Current Procedural Terminology (CPT) Coding

| Day   | Brief Description of Activity                                                                          | Learning Outcome                                                                                  | Person In-Charge |
|-------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------|
| Day 1 | Introduction to CPT: history, AMA ownership, purpose, and global significance for procedural billing   | Understanding CPT as the standard procedural coding language and its development since 1966       | Faculty          |
| Day 2 | CPT code structure: 5-digit numeric codes, Category I/II/III, E/M section codes 99202–99499            | Learning the CPT code format and the three category types with their distinctive uses             | Faculty          |
| Day 3 | CPT sections: Surgery (10000–69999), Anesthesia (00100–01999), Radiology (70000–79999)                 | Studying the three major procedure sections and their specialty-specific code ranges              | Faculty          |
| Day 4 | CPT sections: Pathology and Laboratory (80000–89999) and Medicine (90000–99999)                        | Completing the CPT section map with laboratory and medicine code categories                       | Faculty          |
| Day 5 | CPT modifiers: -25, -59, -26, -TC, -22, -50, -51, and the Global Surgical Package                      | Understanding modifiers that provide additional billing context without changing code definitions | Faculty          |
| Day 6 | CPT coding practice: assigning codes for office visits, colonoscopy, MRI, ECG, and surgical procedures | Hands-on CPT code assignment across multiple medical service types                                | Faculty          |

**Objective:** To develop practical CPT coding proficiency covering code structure, all six sections, modifiers, and the relationship between CPT procedure codes and ICD diagnosis codes.

### Detailed Report

The fourth week introduced the Current Procedural Terminology (CPT) system — the comprehensive code set published by the American Medical Association (AMA) that describes medical, surgical, and diagnostic procedures and services. Students learned that CPT was first published in 1966 to create a uniform procedural language and has been annually updated by the AMA's CPT Editorial Panel ever since. Though primarily a US coding system, CPT has global influence and is increasingly used by Indian private hospitals and insurance companies alongside ICD for procedural billing and documentation.

The CPT code structure was studied: all CPT codes are five-digit numeric codes, and the system is divided into three categories. Category I codes — the majority — represent established procedures and services. Category II codes are supplemental alphanumeric codes ending in 'F' for performance measurement and quality tracking, not used for billing. Category III codes end in 'T' and represent temporary codes for emerging technologies. Students learned to distinguish which category applies to a given coding scenario.

The six CPT sections were then studied in sequence. The Evaluation and Management section (99202–99499) was covered first, as it is the most frequently used, covering office visits, hospital visits, and consultations with complexity-based code selection. The Anesthesia, Surgery, Radiology, Pathology and Laboratory, and Medicine sections were each studied with representative examples — including code 45378 for diagnostic colonoscopy, 70551 for MRI brain without contrast, 93000 for ECG, and 90834 for 45-minute psychotherapy.

CPT modifiers were then introduced as two-digit suffixes that provide additional billing information without changing a code's definition. Students studied modifier -25 for a significant separately identifiable E/M

service on the same day as a procedure, -59 for a distinct procedural service, -26 for the professional component, -TC for the technical component, and -50 for bilateral procedures. The Global Surgical Package — encompassing pre-operative evaluation, the surgical procedure itself, and post-operative care — was explained as a bundling concept that governs when separate codes for related services are or are not permitted.

## WEEK 5 — HCPCS and Healthcare Compliance — HIPAA

| Day   | Brief Description of Activity                                                                          | Learning Outcome                                                                                 | Person In-Charge |
|-------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------|
| Day 1 | HCPCS overview: Level I (CPT) vs Level II alphanumeric codes, history, and CMS administration          | Understanding HCPCS as the complement to CPT for supplies, equipment, and non-physician services | Faculty          |
| Day 2 | HCPCS Level II code categories: A–V prefix ranges, DME (E codes), drugs (J codes), ambulance (A codes) | Learning the major HCPCS Level II prefix categories and their clinical applications              | Faculty          |
| Day 3 | HCPCS coding practice and modifiers: -LT, -RT, -50, -GY, -TC, -GA with clinical examples               | Applying HCPCS codes and modifiers to supply, equipment, and drug billing scenarios              | Faculty          |
| Day 4 | HIPAA: history, purpose, Privacy Rule, patient rights, and covered entities                            | Understanding HIPAA's foundational framework for patient health information protection           | Faculty          |
| Day 5 | HIPAA Security Rule, Transaction and Code Set Standards, breach notification, and penalties            | Learning HIPAA's technical requirements and consequences of non-compliance                       | Faculty          |
| Day 6 | HIPAA compliance for medical coders: PHI handling, authorised disclosures, and coding workflow         | Applying HIPAA requirements to the day-to-day responsibilities of a medical coder                | Faculty          |

**Objective:** To develop HCPCS Level II coding proficiency and understand HIPAA compliance obligations relevant to medical coding and patient data protection.

### Detailed Report

The fifth week opened with an introduction to the Healthcare Common Procedure Coding System (HCPCS) — the coding system that complements CPT by covering medical supplies, durable medical equipment, injectable drugs, and non-physician services not described in CPT. Students learned that HCPCS has two levels: Level I, which is identical to CPT codes, and Level II — the alphanumeric codes maintained by the Centers for Medicare and Medicaid Services (CMS) consisting of one letter followed by four digits.

The major HCPCS Level II prefix categories were studied. The 'A' codes cover transportation and medical supplies, including ambulance services (A0428 for basic life support transport). 'E' codes cover durable medical equipment — wheelchairs, crutches, oxygen equipment. 'J' codes cover injectable drugs not orally administered, such as J1885 for ketorolac injection. 'L' codes cover orthotics and prosthetics, and 'G' codes cover temporary Medicare-specific professional services. Students practised identifying the correct HCPCS prefix category for various clinical supply and service scenarios.

HIPAA — the Health Insurance Portability and Accountability Act enacted in 1996 — was then introduced. Students learned that HIPAA has three core rules: the Privacy Rule, which establishes national standards for protecting Protected Health Information (PHI) and grants patients rights to access and correct their records; the Security Rule, which requires administrative, physical, and technical safeguards for electronic PHI; and the Transaction and Code Set Standards, which mandate the use of standard code sets including ICD, CPT, and HCPCS in all electronic healthcare transactions.

HIPAA compliance requirements specific to medical coders were then studied. Students learned that coders must apply HIPAA-approved code sets, maintain the confidentiality of patient records during the coding

process, ensure claims are submitted in the standard ANSI X12 format, and report any unauthorised access to PHI through proper channels. The penalty structure for HIPAA violations — ranging from \$100 per violation for unknowing breaches to \$50,000 per violation for wilful neglect — reinforced the seriousness of compliance obligations.

## WEEK 6 — Revenue Cycle Management and Coding Guidelines

| Day   | Brief Description of Activity                                                                          | Learning Outcome                                                                                | Person In-Charge |
|-------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------|
| Day 1 | Revenue Cycle Management: definition, importance, and the complete patient-to-payment workflow         | Understanding RCM as the integrated financial process connecting clinical care to reimbursement | Faculty          |
| Day 2 | RCM stages 1–4: patient registration, pre-authorisation, medical coding, and charge capture            | Learning the front-end and coding phases of the revenue cycle                                   | Faculty          |
| Day 3 | RCM stages 5–7: claim submission, payment posting, denial management, and patient billing              | Understanding the back-end claim processing and collections phases                              | Faculty          |
| Day 4 | RCM challenges: documentation deficiencies, coding errors, eligibility failures, and denial strategies | Identifying common RCM failure points and their mitigation strategies                           | Faculty          |
| Day 5 | RCM metrics: Days in A/R, clean claim rate, denial rate, first-pass resolution rate                    | Measuring and interpreting RCM performance through key indicators                               | Faculty          |
| Day 6 | Coding guidelines review: CPC model questions — ICD, CPT, HCPCS, and HIPAA practice                    | Consolidating all coding knowledge through structured examination-style practice                | Faculty          |

**Objective:** To understand Revenue Cycle Management as the framework connecting medical coding to healthcare finance, and to consolidate all coding knowledge through structured CPC-style practice.

### Detailed Report

The sixth week introduced Revenue Cycle Management as the comprehensive process through which healthcare providers track patient care episodes from initial appointment scheduling to the final collection of payment. Students learned that RCM integrates medical coding, billing, claims submission, payment processing, and collections into a unified system whose efficiency directly determines the financial health of a healthcare organisation.

The seven key stages of the revenue cycle were studied in sequence. Patient registration and pre-authorisation establish the insurance and eligibility foundation before any service is rendered. Medical documentation and coding translate clinical services into standardised codes. Charge capture converts coded services into billable claims. Claim submission sends standardised electronic claims to payers in ANSI X12 837 format. Payment posting reconciles received payments against expected reimbursements. Denial management identifies and corrects rejected claims for resubmission. Patient billing and collections complete the cycle for balances not covered by insurance.

Common RCM challenges were then examined. Documentation deficiencies — incomplete or ambiguous clinical notes — force coders to query physicians or assign less specific codes, reducing reimbursement. Coding errors, whether from outdated codes, incorrect sequencing, or missing modifiers, generate claim denials and audit exposure. Insurance eligibility verification failures and missing pre-authorisations produce denials that could have been prevented entirely. Students studied mitigation strategies for each challenge type.

Key RCM performance metrics were then introduced — Days in Accounts Receivable measuring the average time to collect payment, Clean Claim Rate indicating the percentage of claims accepted without errors,

Denial Rate revealing process weaknesses, and First Pass Resolution Rate reflecting overall claim preparation quality. The week concluded with a focused CPC model question practice session covering all coding domains, reinforcing knowledge ahead of case study and project work.

## WEEK 7 — Case Studies — Integrated Coding Practice

| Day   | Brief Description of Activity                                                                             | Learning Outcome                                                                                        | Person In-Charge |
|-------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------|
| Day 1 | Case Study 1 overview: Mr. Ajay Rao — Type 2 Diabetes with CKD Stage 4 and hemodialysis                   | Analysing a complex multi-condition inpatient nephrology scenario for integrated coding                 | Faculty          |
| Day 2 | Case Study 1 coding: E11.22, N18.4, Z99.2, I10 (ICD); 90935, 99214 (CPT); J3480, A4657 (HCPCS)            | Applying complete ICD, CPT, and HCPCS code sets with correct sequencing and notes                       | Faculty          |
| Day 3 | Case Study 2 overview: Mrs. Lakshmi Reddy — Right shoulder rotator cuff tear, arthroscopic repair         | Analysing an orthopaedic surgical scenario requiring precise laterality and procedure coding            | Faculty          |
| Day 4 | Case Study 2 coding: M75.121 (ICD); 29827, 29826 (CPT); C1781, J2001 (HCPCS)                              | Applying surgical coding with bundling considerations and implant supply codes                          | Faculty          |
| Day 5 | Case Study 3 overview and coding: Mr. Karthik — MVA with facial laceration, wrist fracture, rib fractures | Coding a multi-injury emergency department visit with external cause codes and multiple procedure types | Faculty          |
| Day 6 | Case study review, coding rationale discussion, and CPC model question final practice                     | Consolidating integrated coding skills and clarifying sequencing and guideline decisions                | Faculty          |

**Objective:** To apply all coding knowledge through three comprehensive clinical case studies requiring integrated ICD-10-CM, CPT, and HCPCS code assignment with documented rationale.

### Detailed Report

The seventh week was dedicated entirely to applied coding practice through three comprehensive clinical case studies drawn from real-world medical specialties. Case Study 1 presented Mr. Ajay Rao — a 65-year-old patient with 15-year Type 2 diabetes mellitus, hypertension, and stage 4 chronic kidney disease now on scheduled hemodialysis. Students analysed the nephrology clinic encounter documentation, identified all codeable conditions, and applied the sequencing rule that the diabetic etiology (E11.22) must be listed before the CKD stage (N18.4) because the diabetes caused the kidney disease. The dialysis dependency status code Z99.2 and hypertension code I10 were added as secondary diagnoses.

For the CPT component of Case Study 1, students assigned code 90935 for the single-encounter hemodialysis procedure with physician evaluation and 99214 for the moderate-complexity office visit. HCPCS Level II codes J3480 for potassium chloride injection and A4657 for syringes were applied for supplies administered during dialysis. Students noted the important sequencing principle that diabetic complication codes must always place the diabetes code first in ICD-10-CM when the diabetes is the documented cause of the secondary condition.

Case Study 2 presented Mrs. Lakshmi Reddy — a 58-year-old with a confirmed full-thickness right rotator cuff tear undergoing arthroscopic surgical repair. Students learned that the ICD-10-CM code M75.121 captures the laterality (right shoulder) and the tear type (complete, non-traumatic). CPT code 29827 for arthroscopic rotator cuff repair with diagnostic arthroscopy already included in the bundle was assigned. The subacromial decompression code 29826 was discussed as potentially bundled depending on payer policy — illustrating that coding decisions sometimes require payer-specific guideline review.

Case Study 3 presented Mr. Karthik — a 33-year-old restrained driver brought to the emergency department after a motor vehicle accident with facial laceration, left wrist distal radius fracture, and right rib fractures. Students applied ICD-10-CM injury codes with the 'A' 7th character for initial encounters, including S52.502A for the distal radius fracture and S22.41XA for multiple right-sided rib fractures. The external cause code V43.52XA documented the MVA cause. CPT codes 99284 for moderate-complexity ED visit, 12014 for 4.5 cm facial laceration repair, and 29125 for short arm splinting were assigned, alongside HCPCS drug codes for ceftriaxone and ketorolac.



## WEEK 8 — Mini Project, Documentation and Submission

| Day   | Brief Description of Activity                                                                                                         | Learning Outcome                                                                                       | Person In-Charge |
|-------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------|
| Day 1 | Mini project introduction: 'Medical Coding Process: From Diagnosis to Insurance Claim' — scope and structure                          | Understanding the complete end-to-end workflow the project will document and demonstrate               | Faculty          |
| Day 2 | Patient registration and pre-authorisation stage: documenting demographic data, insurance verification, and pre-auth process          | Implementing the first stage of the revenue cycle within the project framework                         | Faculty          |
| Day 3 | Clinical documentation analysis: reading the physician's notes, identifying principal diagnosis, secondary conditions, and procedures | Practising documentation abstraction — the core analytical skill of a medical coder                    | Faculty          |
| Day 4 | Code assignment: applying ICD-10-CM, CPT, and HCPCS codes with sequencing rationale to the project scenario                           | Completing the full code set for the project with documented coding decisions and guideline references | Faculty          |
| Day 5 | Claim construction: building the complete claim with all required identifiers, code sets, and modifiers                               | Understanding how assigned codes translate into a structured insurance claim submission                | Faculty          |
| Day 6 | Project report writing, logbook completion, final review, and submission                                                              | Finalising all internship deliverables and completing the programme                                    | Faculty          |

**Objective:** To design and document a complete medical coding workflow — from patient registration through code assignment to insurance claim construction — as the mini project submission.

### Detailed Report

The eighth and final week was dedicated to the development and documentation of the mini project titled 'Medical Coding Process: From Diagnosis to Insurance Claim.' The project required students to walk through a complete end-to-end medical coding workflow for a defined clinical scenario, demonstrating mastery of all skills developed during the eight-week programme. The project structure was planned first — mapping the patient registration, documentation analysis, code assignment, and claim construction stages to the RCM framework studied in Week 6.

The patient registration and pre-authorisation stage was documented, establishing the patient's demographic information, insurance plan details, eligibility verification status, and the pre-authorisation obtained before the procedure. Students identified the National Provider Identifier (NPI) of the treating physician and the Employer Identification Number (EIN) of the facility — both HIPAA-mandated identifiers required in standard electronic claim submissions.

Clinical documentation analysis was then performed on the chosen scenario's physician notes. Students practised the systematic abstraction process: reading the chief complaint, history of present illness, assessment, and plan; identifying the principal diagnosis and all codeable secondary conditions; identifying all procedures, services, and supplies rendered; and determining the appropriate code systems and sections to reference for each element.

Code assignment was completed with full documentation of the ICD-10-CM diagnosis codes, CPT procedure codes with modifiers, and HCPCS Level II supply and drug codes. Each code was accompanied by the guideline reference justifying the assignment and sequencing decision. The complete claim was then

constructed, incorporating all code sets, patient and provider identifiers, dates of service, and modifier information — demonstrating how the coder's work directly produces the insurance claim that initiates reimbursement. The internship logbook was finalised and all deliverables submitted.