

Standards and Taxonomies

Healthcare Common Procedure Coding System (HCPCS)

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Introduction and Overview

Healthcare Common Procedure Coding System (HCPCS)

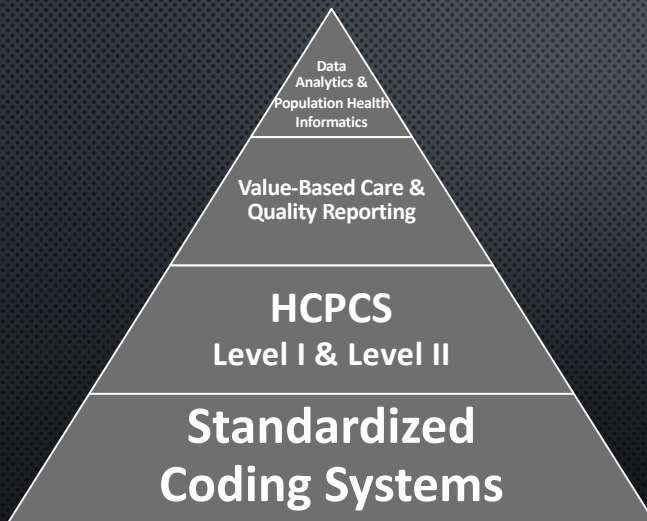
- According to the Centers for Medicare & Medicaid Services (CMS), HCPCS includes two levels (CMS, 2025):
 - Level I: Current Procedural Terminology (CPT) codes
 - Level II: medical products and supplies; services not covered within Level I
 - Standardized coding system for medical procedures, supplies, and services.
 - Developed to ensure uniform reporting and billing.
 - Supports communication among providers, payers, and researchers.
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- HCPCS stands for the Healthcare Common Procedure Coding System.
 - It is a standardized system of coding medical services, procedures, supplies, and medical devices so they can be consistently reported and billed (CMS, 2025).
 - HCPCS Level I codes consist of five numeric digits, for example, 62323 = caudal epidural steroid injection with imaging (CMS, 2022).
 - HCPCS Level II codes are alphanumeric, consisting of one alphabetical letter followed by four numbers.
 - **Level II** codes are mainly used for billing purposes and do not determine coverage or payment decisions.
 - This is important because without a standardized coding system, reimbursement, data tracking, and communication between providers and insurers would be chaotic and inefficient.
 - For nursing informatics, HCPCS is one of the building blocks of reliable data.

Source and Governance

- Level I and Level II codes are governed separately (AMA, 2025; CMS, 2025).
- Level I CPT codes are maintained by the American Medical Association (AMA).
- Level II codes are maintained by CMS.
- AMA CPT website (AMA, n.d.)
<https://www.ama-assn.org/practice-management/cpt/cpt-overview-and-code-approval>
- CMS HCPCS website (CMS, 2025)
<https://www.cms.gov/medicare/coding-billing/healthcare-common-procedure-system>
- **Stakeholders** have the opportunity to provide input and participate in the decision-making process regarding HCPCS codes (AMA, 2025; CMS, 2025)

- Both AMA and CMS collaborate with stakeholders to keep the HCPCS system up to date. Stakeholders include insurance companies, healthcare systems, vendors, providers, and patients.
- Level I coding was created in the 1960s, then known simply as CPT.
- Level II coding was introduced in the 1980s, and CPT was adopted as Level I of the HCPCS system.
- In 2003, CMS took over governance of HCPCS Level II.
- Updates of Level I are updated annually by the AMA (AMA, 2025).
- Updates of Level II are published online through CMS on a quarterly basis (CMS, 2025).

Role in the National Health IT Infrastructure



- Part of U.S. standards-based infrastructure.
- Can be mapped to ICD-10 codes (Duwayri et al., 2021).
- Facilitates electronic claims, EHR integration, decision support, and quality-reporting.
- In nursing informatics: HCPCS supports care documentation, resource tracking, and analytics (Yogesh & Karthikeyan, 2022).

- HCPCS plays an important role in our national health IT infrastructure because it is standardized and can be mapped with other coding systems, such as ICD-10 (Duwayri et al., 2021).
- These coding systems form the backbone of electronic health records and billing.
- For nursing informatics specifically, HCPCS helps with documenting care, monitoring supply usage, and supporting both analytics and decision-making (Yogesh & Karthikeyan, 2022).

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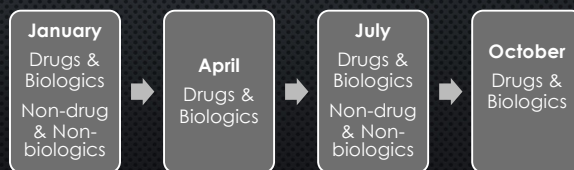
Current Status

- Status: Both Level I and Level II are mature and highly **dynamic**.
- Adopted throughout the Unites States.
- Both undergo regular maintenance and revisions (AMA, 2025; CMS, 2025).
- Required by HIPAA for Medicare/Medicaid billing and most private payers.

Level I Annual Revision Schedule



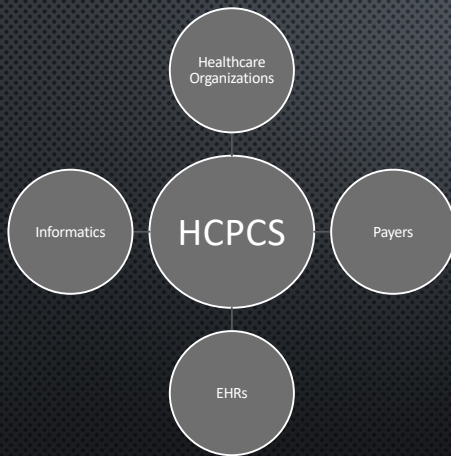
Level II Quarterly Revision Schedule



- As previously stated, Level I CPT codes are revised and updated on an annual basis, while Level II codes are revised and updated quarterly (AMA, 2025; CMS, 2025).
- For Level II codes, CMS releases updated drug and biological product codes every quarter. Non-drug and non-biological product updates are only released biannually, in January and July.
- While both Level I and Level II are widely utilized throughout the U.S., they are not globally interoperable (unlike ICD-10).

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Implications for Interoperability



- Promotes consistent terminology and common language across systems within the country (CMS, 2025).
- Enables data exchange between EHRs, payers, and public health agencies, supporting Meaningful Use.
- While both Level I and Level II are used consistently throughout the U.S., they are not globally interoperable (unlike ICD-10).

- One of HCPCS's strengths is that it creates a common language for services and supplies, which supports interoperability.
- Data can be exchanged more easily between hospitals, insurers, public health systems, and analysts, aligning with the goals of Meaningful Use (CMS, 2024).
- HCPCS is exclusive to the U.S. healthcare system.
- HCPCS is critical for ensuring claims and clinical data move seamlessly between systems (OpenAI, 2025).

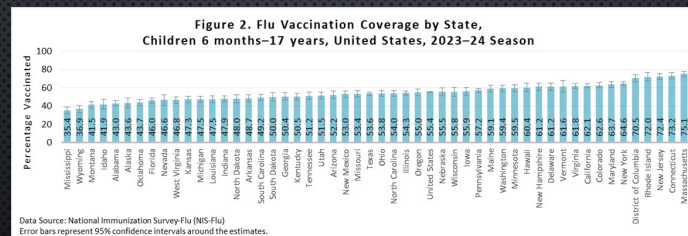
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Impact on Patient Safety, Quality, and Population Health

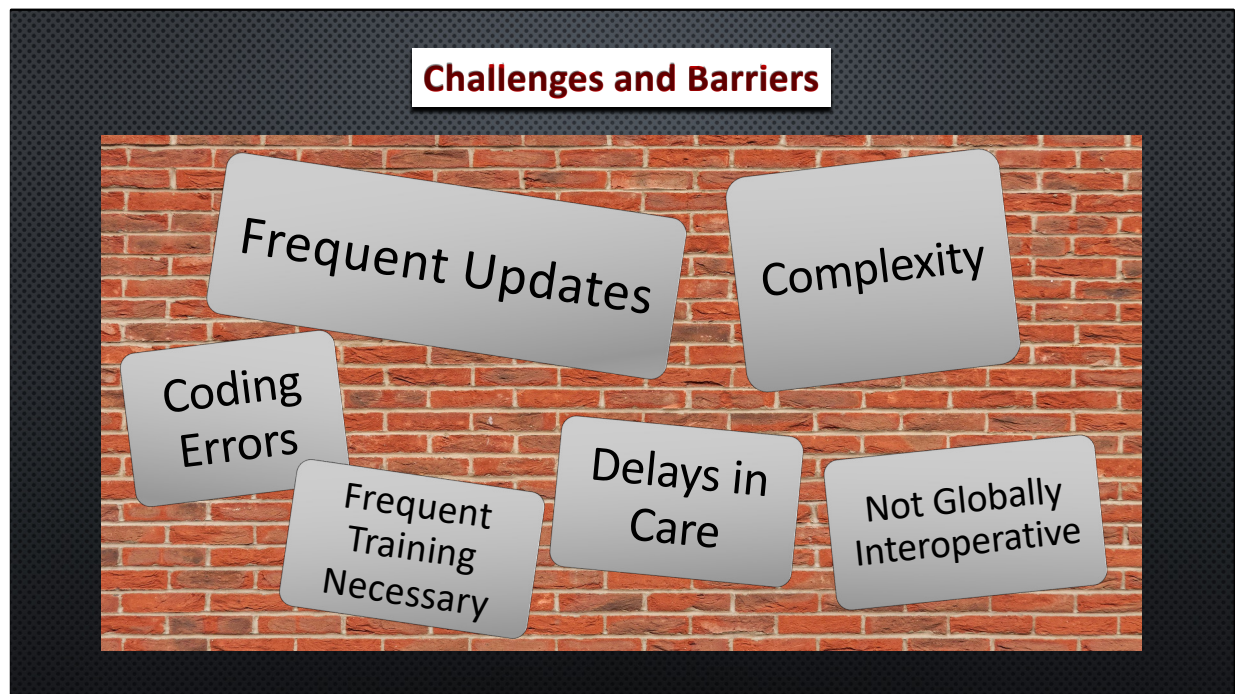
- Ensures accurate tracking of medical services and supplies.
- Facilitates quality reporting and performance measurement.
- Population health: supports analysis of procedure/supply utilization trends.
- Example: HCPCS codes for vaccines allow monitoring of immunization rates.



Centers for Disease Control and Prevention. (2024). Flu vaccination coverage by state, children 6 months–17 years, United States, 2023–24 season [Bar chart]. National Center for Immunization and Respiratory Diseases. <https://www.cdc.gov/flu/avaxview/coverage-by-season/2023-2024.html>

- Accurate coding has a significant effect on patient safety and quality (D'Amore et al., 2021).
- Codes also support quality reporting, helping to identify inequities and gaps in care.
- From a population health perspective, researchers use HCPCS data to study how services and resources are distributed across communities.
- For example, codes for immunizations let us track vaccination rates across large populations (Centers for Disease Control and Prevention, 2024).

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- HCPCS is complex and updated often, meaning providers and coders will need regular training.
- Errors in coding can lead to false claims and even penalties. One potential solution is to utilize AI for auditing assistance before claims are submitted. These can identify mismatched codes, missing documentation, or other errors, reducing the risk of billing errors and penalties (OpenAI, 2025).
- Delays in assigning or approving new codes can slow down the adoption of the newest treatments and supplies.
- HCPCS is only utilized in the U.S. healthcare system. Unlike ICD-10, it is not globally interoperable.

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Future Outlook and Recommendations

- Continued role in billing and interoperability.
 - Increasing interoperability with value-based care models and analytics (Duwayri et al., 2021).
 - Recommendation: expand large language models (LLM)/AI tools to improve coding accuracy (OpenAI, 2025; Song et al., 2025; Mustafa et al., 2025).
 - Long-term: alignment with global coding systems for broader interoperability.
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- Recent research demonstrates ChatGPT's potential to automate billing code creation, which could improve efficiency and reduce human error in HCPCS coding (Song et al., 2025).
 - Increasingly competitive performance has been demonstrated among LLMs when compared with human coders; however, human validation is still necessary to prevent AI-generated hallucinations and errors (Mustafa et al., 2025).

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Generative AI Attestation

I attest that I used a generative AI tool in accordance with course guidelines and assignment-specific permissions. I used ChatGPT (OpenAI, 2025) on September 26, 2025, to gather insights about HCPCS. The prompt(s) used included: "I need some insights about HEALTHCARE COMMON PROCEDURE CODING SYSTEM (HCPCS) for a PowerPoint presentation. I need ideas about Role in National Health IT Infrastructure, Implications for Interoperability, Impact on Patient Safety, Quality, and Population Health, Challenges and Barriers, and Future Outlook," and "I'd like to see some examples of visuals." Additionally, on September 27, 2025, I asked ChatGPT to help me compare my presentation to the assignment rubric.

All AI-generated content was critically reviewed, edited, and appropriately integrated with my own academic and clinical reasoning.

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