



Understanding the AI Taxonomy

PRESENTED BY

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Our Presenters



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1

Represents Physicians
With a unified voice.



**POWERFUL
ALLY**

4

Drives the Future
Of innovation in
health care.

2

Leads the Charge
On confronting today's
public health crises.

3

Removes Obstacles
That interfere with
patient care.

AMA: Driving the future of digital health



**AMA DIGITAL
HEALTH RESEARCH**
(2016, 2019)



**AMA DIGITAL HEALTH
PLAYBOOK SERIES**
(RPM, TELEHEALTH)



**AMA
TELEHEALTH
QUICK GUIDE**



**NATIONAL
TELEHEALTH
IMPACT SURVEYS**



**AMA TELEHEALTH
INITIATIVE**
(AMA TELEHEALTH
IMMERSION PROGRAM)



HEALTH 2047



**AMA RETURN ON
HEALTH RESEARCH
& VALUE
FRAMEWORK**



AI PRINCIPLES



**CPT® CODING &
PAYMENT
GUIDANCE**



**ENSURING EQUITY
IN INNOVATION**



**STATE & FEDERAL
ADVOCACY**



**PRIVACY
PRINCIPLES**
(PRIVACY BY DESIGN)

Making technology an asset in the delivery of healthcare, not a burden.

Stay informed with AMA resources

The **AMA Telehealth Immersion Program** is a comprehensive curriculum of curated webinars, interactive peer-to-peer learning sessions, virtual discussions, bootcamps and resources available on demand and designed to enable practices.

ama-assn.org/telehealth-immersion

The **AMA Ed Hub™** is a unified education portal that provides a personalized experience for physicians and their care teams to keep current, increase their professional satisfaction, claim continuing education credits and continuously improve the care they provide. Enhance your understanding of AI with the **Artificial and Augmented Intelligence in Health Care** module.

amaedhub.com

Recognizing the need for physician input in new health care solutions, the AMA launched the **Physician Innovation Network (PIN)**—a digital matchmaking platform where physicians and entrepreneurs can connect and collaborate to improve digital health care solutions.

innovationmatch.ama-assn.org

The **In Full Health Learning & Action Community to Advance Equitable Health Innovation** initiative seeks to advance equitable opportunities in health innovation investment, solution development and purchasing. All those who fund, develop, purchase and influence health innovation are invited to join the *In Full Health* community to advance equitable resource allocation.

InFullHealth.org

The AMA offers a collection of more than 70 award-winning online toolkits and educational programming through its **AMA STEPS Forward® Innovation Academy** that help physicians and medical teams make transformative changes to their practices. STEPS Forward resources cover everything from managing stress and burnout to improving practice workflow.

stepsforward.org

Designed to address the needs of developers and creators of health technology and services, the **CPT® Developer Program** offers access to AMA-published content from Current Procedural Terminology (CPT) during the crucial stages of development.

developer.ama-assn.org

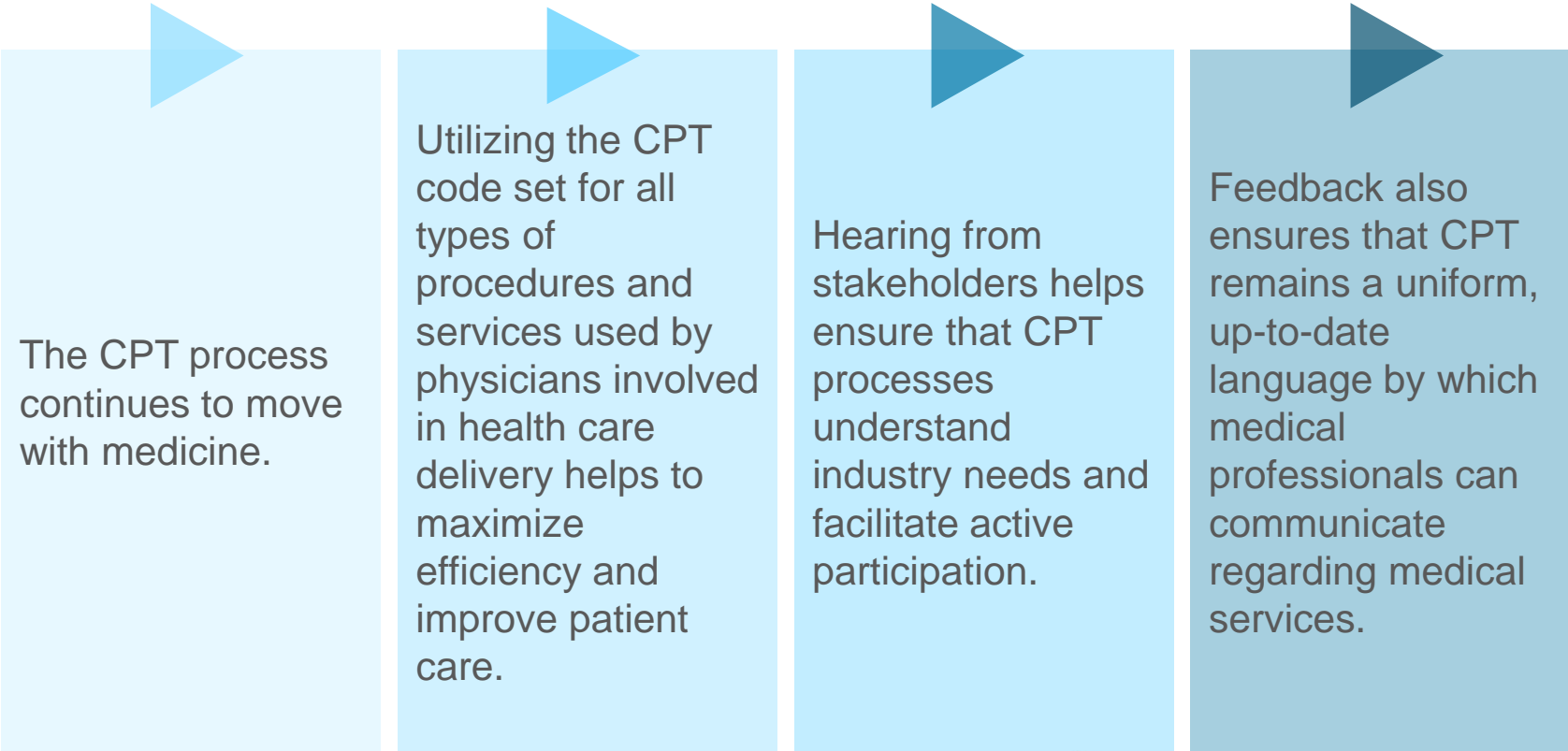
Augmented Intelligence (AI) integration

Long recognized for our track record in championing evidence-based medicine and high-quality clinical care, the AMA seeks to be a helpful force in the AI conversation.

- Foundational health care AI policy
- Industry/developer collaboration to address priorities such as privacy, equity, ethics, clinical validation, CPT® coding structures, payment models and usability
- Development of rigorous standards and guidelines
- Medical ethics
- Effective advocacy
- Physician input and insights
- Adoption and implementation in health care settings
- Continuing medical education for the digital age
- AI-specific content that explains the landscape and points to where this fast-emerging technology may take patient care and medical practice in the future

ama-assn.org/ai

CPT® advances the AMA's mission



The CPT process continues to move with medicine.

Utilizing the CPT code set for all types of procedures and services used by physicians involved in health care delivery helps to maximize efficiency and improve patient care.

Hearing from stakeholders helps ensure that CPT processes understand industry needs and facilitate active participation.

Feedback also ensures that CPT remains a uniform, up-to-date language by which medical professionals can communicate regarding medical services.



It's polling time!

When you see the **poll** appear in the slide window, click on the **answer**, then click **SUBMIT**.



Poll #1

How would you describe your role in the health care ecosystem?

- CPT® Editorial Panel member or CPT Editorial Panel advisor
- Innovator
- Medical coder or biller
- Payer
- Provider
- Regulator
- I would describe my role differently from the options listed above

Poll #1 Results

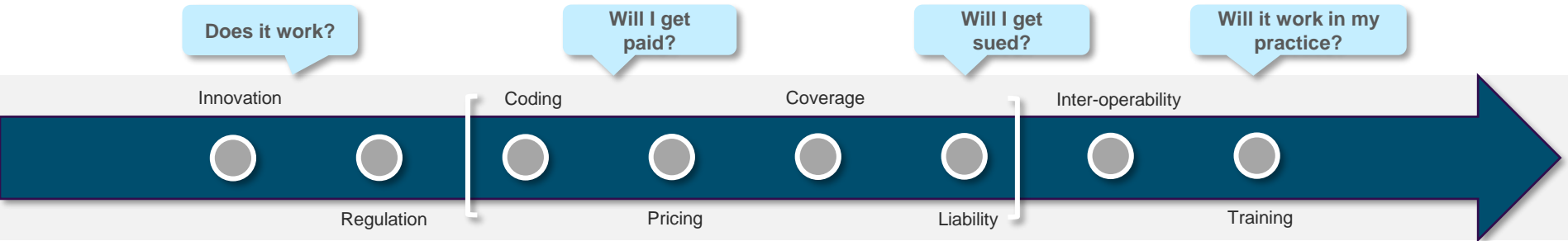
Poll results are a function of the live webinar. Please refer to the webinar recording for a snapshot of the live poll results.

CPT[®] Appendix S: AI taxonomy for medical services & procedures

Background



The AMA-Convened Digital Medicine Payment Advisory Group (DMPAG)



Aggregate evidence base

Address gaps in coding

Propagate widespread coverage

- ✔ Engaged the CPT® Editorial Panel by proposing new codes for Remote Physiologic Monitoring, Internet Consultation, eVisit, and Diabetic Retinopathy CPT codes
- ✔ Gained broader coverage of remote monitoring and augmented intelligence services with payers like CMS
- ✔ DMPAG created use cases and consolidated evidence from hundreds of studies

15 nationally recognized advisors

AMA's DMPAG AI Workgroup

Understanding artificial intelligence in health care takes specific expertise. In 2020, DMPAG formed a sub-workgroup charged with advising the AMA regarding:

■ Identification of **existing CPT[®] conventions** for describing AI and algorithmic enabled services

■ Identification of **coding gaps** relative to foreseeable design, features and business models for AI and algorithmic enabled services

■ Assessing existing and identifying new (if appropriate) **potential framework(s) and criteria** to describe AI services

■ Considering **pathways for coverage/ payment** of safe and effective AI services

The DMPAG & CPT® Editorial Panel

The DMPAG is not an advisory body to the CPT Editorial Panel, but it is an advisory body to the AMA.

The DMPAG and DMPAG Workgroups sometimes submit code change applications (CCAs) to the CPT Editorial Panel for consideration regarding potential coding solutions for digital medicine.

The CPT Editorial Panel makes the final determination on proposed CCAs.

New and Revised CPT codes are sent to the AMA/Specialty Society Relative Value Scale Update Committee (RUC) to determine the valuation recommendation to Medicare.

→ Recommendations are for CMS' annual updates in the Medicare Payment Schedule.

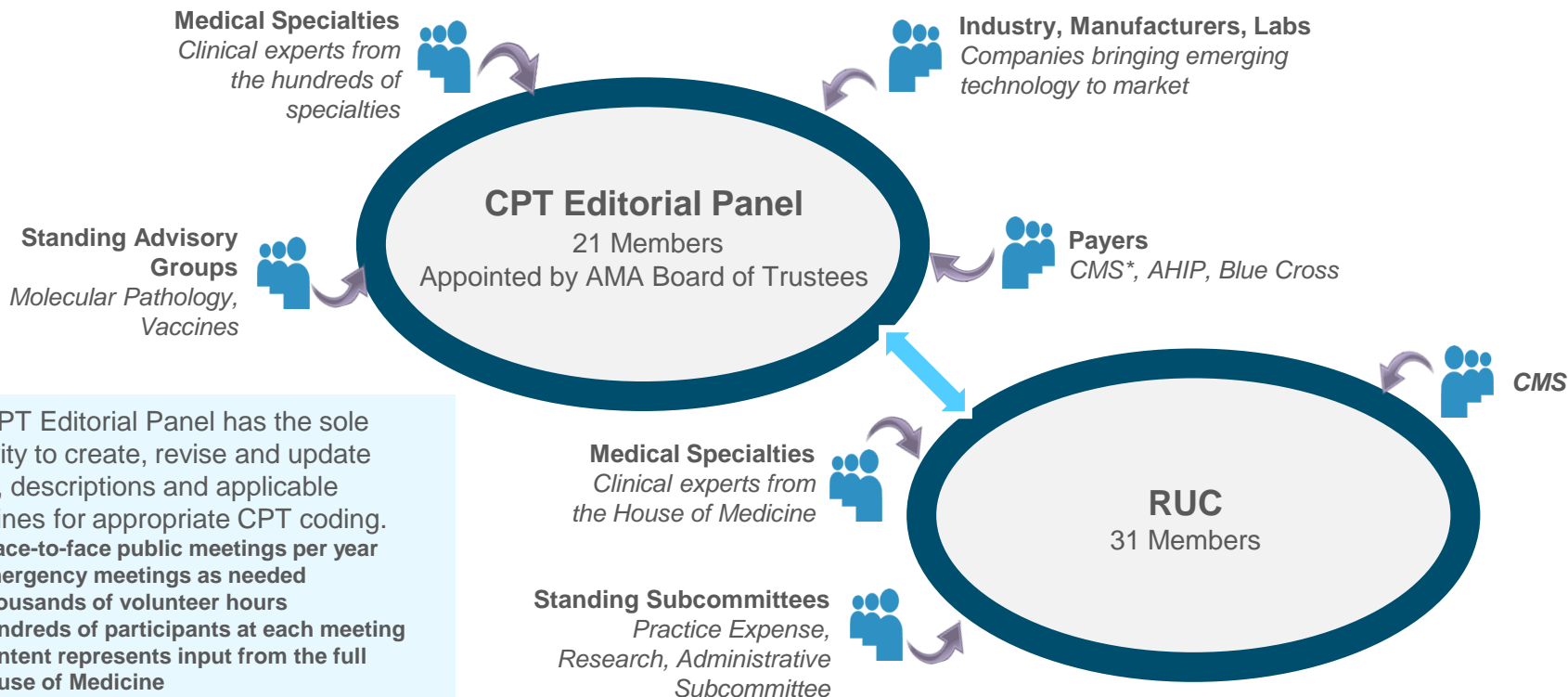
CPT® Editorial Panel relationship to the RUC

Evidence-based

Deliberation driven

Well-defined criteria

Clinical expertise



The CPT Editorial Panel has the sole authority to create, revise and update codes, descriptions and applicable guidelines for appropriate CPT coding.

- 3 face-to-face public meetings per year
- Emergency meetings as needed
- Thousands of volunteer hours
- Hundreds of participants at each meeting
- Content represents input from the full House of Medicine

Framework(s) and criteria to describe AI services



The current landscape

There are limitations in the terminology used to date to describe AI services in the CPT® code set.

There is growth in FDA-cleared software as a medical device (SaMD). SaMD is defined as software intended to be used for one or more medical purposes that perform these purposes without being part of a hardware medical device. Often the software utilizes algorithms or AI.

There is confusion about how best to describe work performed by the machine on behalf of the physician or other qualified health care professional (QHP).

AI applications in health care span a spectrum of sophistication so foundational definitions are needed to accurately describe services and procedures in a way that defines elements of differentiation between AI services.

Software as a Medical Device (SaMD)

Content current as of:

12/04/2018

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Software as a Medical Device (SaMD)

[Artificial Intelligence and Machine Learning \(AI/ML\)-Enabled Medical Devices](#)

[Artificial Intelligence and Machine Learning in Software as a Medical Device](#)


As technology continues to advance all facets of health care, software has become an important part of all products, integrated widely into digital platforms that serve both medical and non-medical purposes. Software, which on its own is a medical device – Software as a Medical Device – is one of three types of software related to medical devices. The other two types of software related to medical devices include software that is integral to a medical device (Software in a medical device) and software used in the manufacture or maintenance of a medical device.

What is Software as a Medical Device?


<https://www.fda.gov/medical-devices/digital-health-center-excellence/software-medical-device-samd>, accessed 4/8/2022

Developing a new framework


The AMA sought input from the Digital Medicine Payment Advisory Group (DMPAG) AI Workgroup.



The AI Workgroup engaged in an exercise to identify AI products on the horizon for 2025 and consider the language needed to appropriately describe these services in the CPT® code set.



The AI Workgroup determined that an AI taxonomy may be needed that could be considered by the CPT Editorial Panel for adoption into the CPT code set as an appendix.

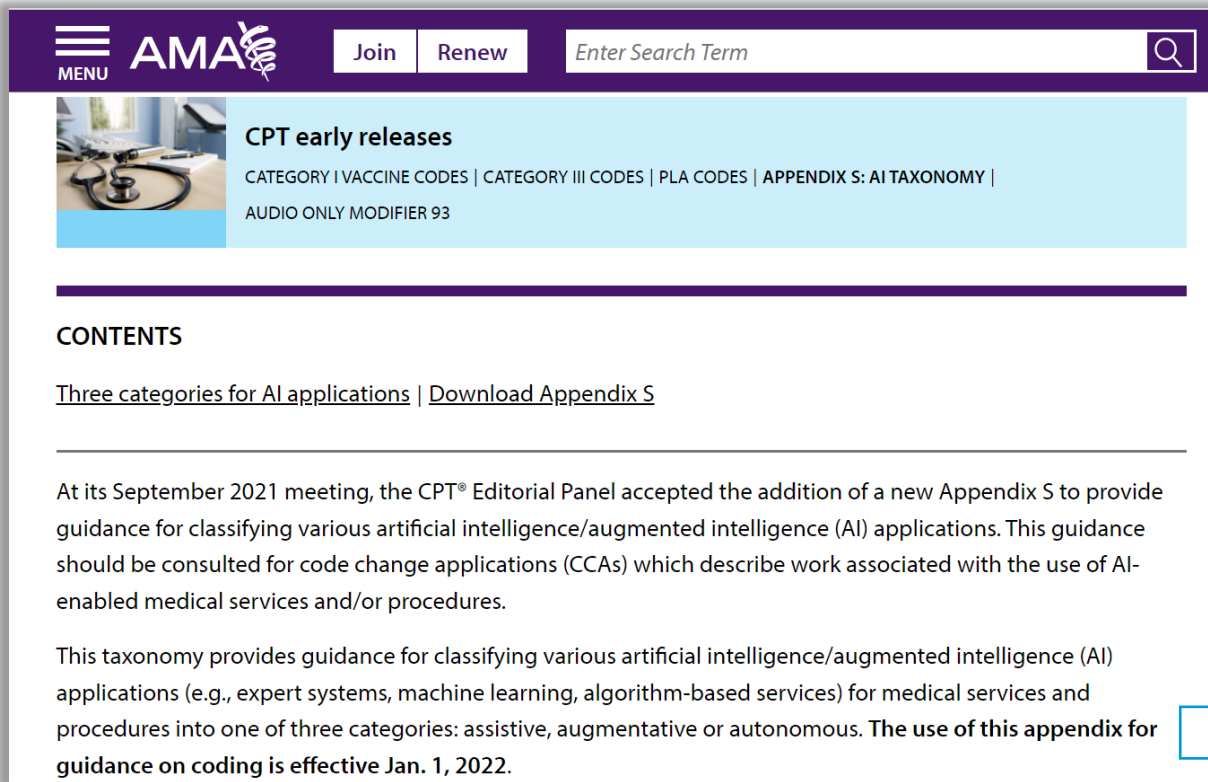


AI taxonomy appendix was developed by the AI Workgroup and submitted for consideration and adoption by the CPT Editorial Panel at the September 2021 meeting.

CPT® Appendix S: AI taxonomy for medical services & procedures



New appendix: AI taxonomy for medical services & procedures



The screenshot shows the top navigation bar of the AMA website with a purple background. On the left is the AMA logo and a 'MENU' button. In the center are 'Join' and 'Renew' buttons. On the right is a search bar with the placeholder text 'Enter Search Term' and a magnifying glass icon. Below the navigation bar is a light blue banner for 'CPT early releases'. The banner includes a small image of a stethoscope on a desk and text listing 'CATEGORY I VACCINE CODES | CATEGORY III CODES | PLA CODES | APPENDIX S: AI TAXONOMY | AUDIO ONLY MODIFIER 93'. Below the banner is a 'CONTENTS' section with two links: 'Three categories for AI applications' and 'Download Appendix S'. The main content area contains two paragraphs of text. The first paragraph states that the CPT® Editorial Panel accepted a new Appendix S in September 2021 to provide guidance for AI applications. The second paragraph explains that the taxonomy classifies AI applications into three categories: assistive, augmentative, or autonomous, and notes that the use of this appendix for coding guidance is effective as of January 1, 2022. A blue-bordered box in the bottom right corner of the screenshot contains the URL 'ama-assn.org/cpt-ai-taxonomy'.

CPT early releases
CATEGORY I VACCINE CODES | CATEGORY III CODES | PLA CODES | APPENDIX S: AI TAXONOMY |
AUDIO ONLY MODIFIER 93

CONTENTS

[Three categories for AI applications](#) | [Download Appendix S](#)

At its September 2021 meeting, the CPT® Editorial Panel accepted the addition of a new Appendix S to provide guidance for classifying various artificial intelligence/augmented intelligence (AI) applications. This guidance should be consulted for code change applications (CCAs) which describe work associated with the use of AI-enabled medical services and/or procedures.

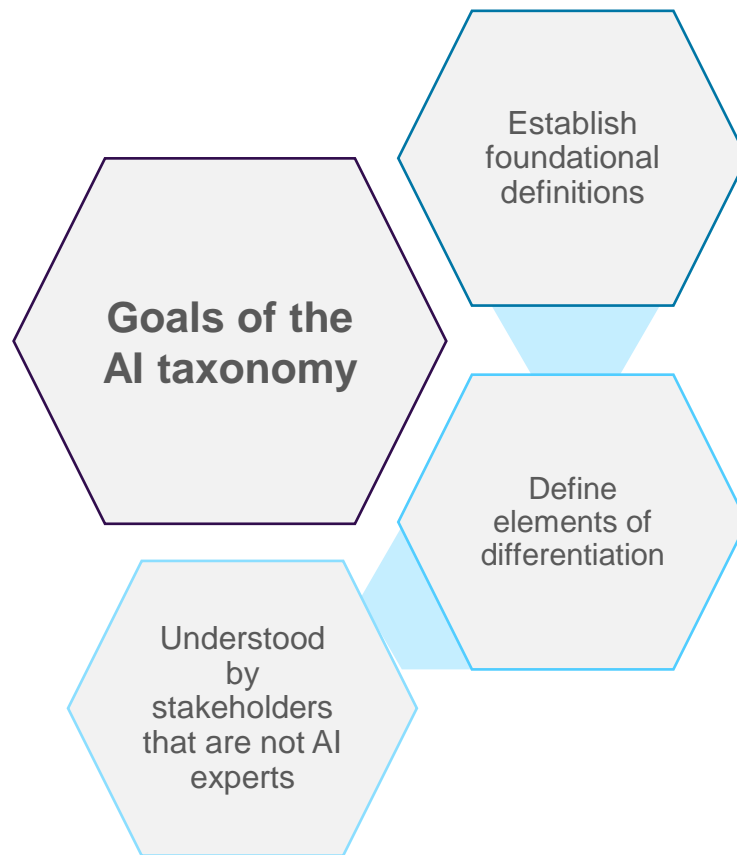
This taxonomy provides guidance for classifying various artificial intelligence/augmented intelligence (AI) applications (e.g., expert systems, machine learning, algorithm-based services) for medical services and procedures into one of three categories: assistive, augmentative or autonomous. **The use of this appendix for guidance on coding is effective Jan. 1, 2022.**

ama-assn.org/cpt-ai-taxonomy

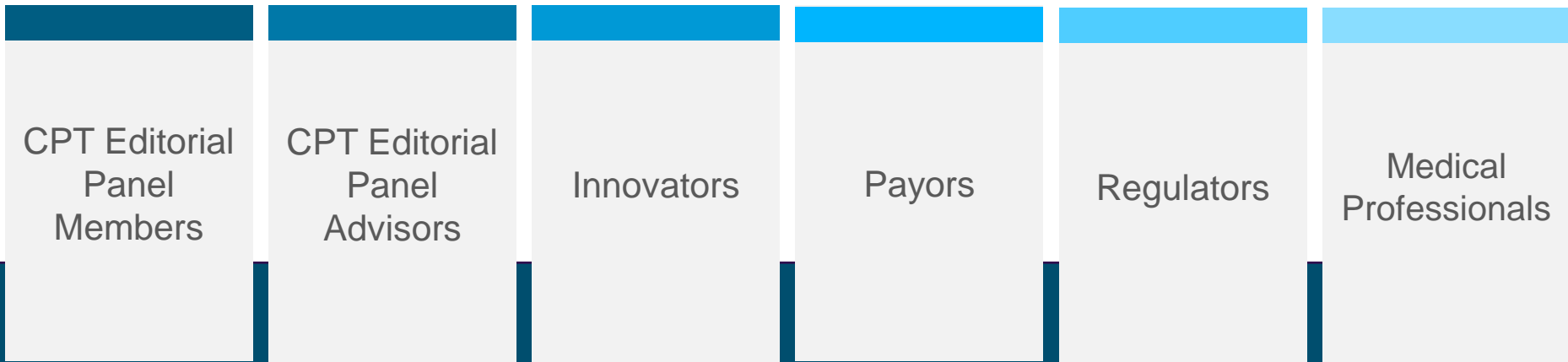
CPT® Appendix S: AI taxonomy for medical services & procedures

The AI Taxonomy provides and defines distinct categories to describe the work done by the machine on behalf of the physician based on:

- Technical features and performance of emerging AI products and services
- Effect on the work of the physician/QHP
- Discrete components of work in order to facilitate valuation



CPT® Appendix S: AI taxonomy for medical services & procedures



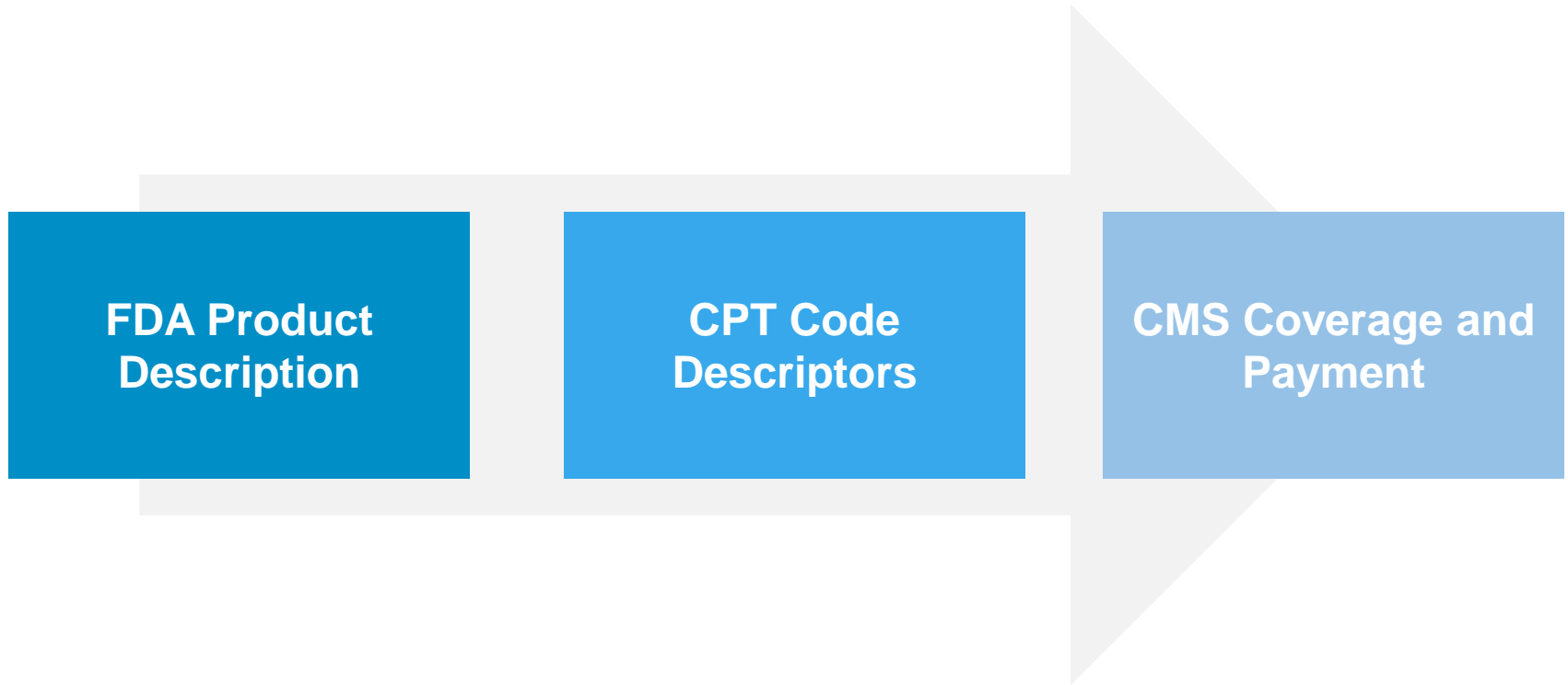
Who is it for?

CPT®: Supporting innovation along the pathway to payment

The goals of the AI Taxonomy are very specific to **CPT coding**, the descriptive nomenclature for the work of the physician or other qualified health professional to provide a medical service.

CPT coding is distinct from payment but has important downstream impacts on valuation and payment.

CPT[®] code descriptors anchor the continuum



CPT[®] Appendix S: AI taxonomy for medical services & procedures *Content*



AI Taxonomy: Introductory language



This taxonomy provides guidance for classifying various artificial intelligence (AI) applications (e.g., expert systems, machine learning, algorithm-based services) for medical services and procedures into one of these three categories: assistive, augmentative, and autonomous. AI as applied to health care may differ from AI in other public and private sectors (e.g., banking, energy, transportation). **Note that there is no single product, procedure, or service for which the term “AI” is sufficient or necessary to describe its intended clinical use or utility; therefore, the term “AI” is not defined in the code set.** In addition, the term “AI” is not intended to encompass or constrain the full scope of innovations that are characterized as “work done by machines.” Classification of AI medical services and procedures as assistive, augmentative, and autonomous is based on the clinical procedure or service provided to the patient and the work performed by the machine on behalf of the physician or other qualified health care professional (QHP).”



AI Taxonomy: Categorization & level of autonomy

Assistive:

The work performed by the machine for the physician or other qualified health care professional is assistive when the machine **detects** clinically relevant data without analysis or generated conclusions. Requires physician interpretation and report.

Augmentative:

The work performed by the machine for the physician or other qualified health care professional is augmentative when the machine **analyzes and/or quantifies** data in a clinically meaningful way. Requires physician or other qualified health care professional interpretation and report.

AI Taxonomy: Categorization & level of autonomy

Autonomous:

The work performed by the machine for the physician or other qualified health care professional is autonomous when the machine automatically **interprets data and independently generates clinically meaningful conclusions** without concurrent physician or other qualified health care professional involvement. An autonomous medical service includes interrogating and analyzing data. The work of the algorithm may or may not include acquisition, preparation, and/or transmission of data. The clinically relevant conclusion may be a characterization of data (e.g., likelihood of pathophysiology) to be used to establish a diagnosis or to implement a therapeutic intervention. There are three levels of autonomous AI medical services and procedures with varying physician or other qualified health care professional involvement:

I.

The autonomous AI draws conclusions and offers diagnosis and/or management options, is contestable and requires physician or other qualified health care professional action to implement.

II.

The autonomous AI draws conclusions and initiates diagnosis and/or management options with alert/opportunity for override, may require physician or other qualified health care professional action to implement.

III.

The autonomous AI draws conclusions and initiates management, requires physician or other qualified health care professional action to contest.

AI Taxonomy: Table

Service Components	AI Category: Assistive	AI Category: Augmentative	AI Category: Autonomous
Primary objective	Detects clinically relevant data	Analyzes and/or quantifies data in a clinically meaningful way	Interprets data and independently generates clinically meaningful conclusions
Provides independent diagnosis and/or management decision	No	No	Yes
Analyzes data	No	Yes	Yes
Requires physician or other qualified health care professional interpretation and report	Yes	Yes	No
Examples in CPT code set	Computer-Aided Detection (CAD) Imaging (77048, 77049, 77065-77067, 0042T, 0174T, 0175T)	Magnetic Resonance Spectroscopy (0612T), external analysis of imaging data sets	Retinal Imaging (92229)



Your turn!

When you see the **poll** appear in the slide window, click on the **answer**, then click **SUBMIT**.



Poll #2

True or False?

There are some products, procedures, and services for which the term “AI” is essential to describe its intended clinical use or utility.

- True
- False

Poll #2 Results

Poll results are a function of the live webinar. Please refer to the webinar recording for a snapshot of the live poll results.

AI taxonomy implementation



How has the AI taxonomy been used so far?

CPT® Code 92229 is the only Category I code that currently fits into the category of autonomous.

- **92229** *Imaging of retina for detection or monitoring of disease; point-of-care automated analysis and report, unilateral or bilateral*



CPT® Editorial Summary of Panel Actions February 2022

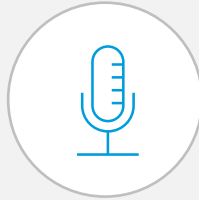
Tab #	Name	Code #	Request-Description	Effective Date
25	Retinal Imaging - Revise 92229	▲92229	Accepted revision of code 92229 by removing the term "automated" and replacing it with "autonomous"	January 2023

Current AMA outreach efforts

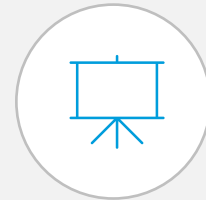
Publications



Webinars



Presentations



AI taxonomy implementation

CPT® resources: For more information

Visit the [CPT code set quick reference guide](#) to learn more about AMA and CPT resources on:

- ✓ The CPT Editorial Panel Process, including code change application details and the CPT Editorial Panel meetings calendar
- ✓ CPT News, for the latest in CPT codes and content
- ✓ Innovation and Technology
- ✓ Medical Practice Management
- ✓ Health Equity
- ✓ And... sending in your questions!

ama-assn.org/cpt-resources-guide

Questions?



Next steps



Tell us what you think

Please complete our **post-webinar survey**.

Your feedback helps us deliver expert perspective on topics you want to learn more about.



Stay tuned for our next CPT® Webinar!

Digital Health Adoption: Addressing Key Barriers

Wednesday, June 22

Noon–1 p.m. CT



Physicians' powerful ally in patient care