Appendix S

Artificial Intelligence Taxonomy for Medical Services and Procedures

This taxonomy provides guidance for classifying various artificial intelligence (AI) applications (eg, 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 (eg, 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).

Assistive: The work performed by the machine for the physician or other QHP is assistive when the machine **detects** clinically relevant data without analysis or generated conclusions. Requires physician or other QHP interpretation and report.

►***Augmentative:*** The work performed by the machine for the physician or other QHP is augmentative when the machine **analyzes** and/or **quantifies** data to yield clinically meaningful output. Requires physician or other QHP interpretation and report.

Autonomous: The work performed by the machine for the physician or other QHP is autonomous when the machine automatically **interprets** data and independently generates clinically meaningful conclusions without concurrent physician or other QHP involvement. Autonomous medical services and procedures include interrogating and analyzing data. The work of the algorithm may or may not include acquisition, preparation, and/or transmission of data. The clinically meaningful conclusion may be a characterization of data (eg, 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 QHP professional involvement:

Level I. The autonomous AI draws conclusions and offers diagnosis and/or management options, which are contestable and require physician or other QHP action to implement.

Level II. The autonomous AI draws conclusions and initiates diagnosis and/or management options with alert/opportunity for override, which may require physician or other QHP action to implement.

Level III. The autonomous AI draws conclusions and initiates management, which requires physician or other QHP initiative to contest.◄

►Service Components	AI Category: Assistive	AI Category: Augmentative	AI Category: Autonomous
Primary objective	Detects clinically relevant data	Analyzes and/or quantifies data to yield clinically meaningful output	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 QHP interpretation and report	Yes	Yes	No
Examples in CPT code set	Algorithmic electrocardiogram risk-based assessment for cardiac dysfunction (0764T, 0765T)	Noninvasive estimate of coronary fractional flow reserve (FFR) (75580)	Retinal imaging (92229)◄