Precise Word Matching AI:

Why this powerful new technology auto-codes charts more accurately than other methods

There is a lot of discussion in the risk adjustment world about NLP – Natural Language Processing – which is used to assist coders in risk adjustment chart reviews. NLP is a type of Artificial Intelligence that can refer to different methods for computer-assisted review of medical records. Most of the time, NLP refers to technologies that use Machine Learning to suggest possible diagnoses in the chart. But NLP can also refer to the proprietary Precise Word Matching AI that Cavo Health uses to identify risk adjustable codes. And Precise Word Matching AI is very different from Machine Learning.

It is the difference between Precise Word Matching AI and Machine Learning that makes all the difference in why Cavo Health so accurately auto-codes medical records versus other methods.

To begin with, Machine Learning is a statistical modeling method. To use Machine Learning to identify Suspect codes in charts, one must train the software with thousands of manually coded charts. A machine learning model can only be as good as the data that it is trained with. The problem with this approach is that the manually coded charts often contain coding errors. As the source of what a computer "knows" when it is trained, these coding errors get baked into the statistical models. These coding errors are then difficult if not impossible to eliminate. Moreover, the statistical model built with these thousands of manually

coded charts can never code more accurately than the source data because the statistical model is a statistical average of all charts used in training. Therefore, Machine Learning has a ceiling on how accurately it can auto-code charts.

But once it hits this ceiling, the accuracy of Machine Learning models begins to decline because of "model-drift". A machine learning model can achieve its best coding accuracy only so long as the medical records it codes are statistically similar to the training charts. As the real-world data drifts away from the training data distribution, the risk adjustment coding accuracy of a Machine Learning model declines. The Machine Learning model then needs to be retrained at which time its accuracy begins to decline again because of model-drift, and so on.

Precise Word Matching AI works entirely differently. Precise Word Matching AI's coding accuracy starts higher than manually coded charts and only gets better over time. Here's how: Cavo Health used AI to generate around 600,000 unique queries, each sufficient to confirm one of the 10,000 risk adjustable codes. That means that Cavo Health uses on average around 60 different ways to find each of the risk adjustable ICDs. When Cavo Health finds a code that it missed, we merely add another query to its query list. From then on Cavo Health will never miss a diagnosis worded that way again. Likewise, false positives are easily corrected. Most false positives can be eliminated with a negation term or the identification of an Unacceptable Document. Thus, Precise Word Matching AI generates about half the false positives of other methods today. And this ratio versus other methods is getting better by the day.

In fact, Precise Word Matching AI has virtually no upper limit to the accuracy it will achieve over time. It just gets better. That's why Cavo Health puts so much effort to continually improve its already high auto-coding accuracy. While Cavo Health's coding accuracy is market-leading today, it will be even better over time.

Talk to us. Let Cavo Health provide you with a pilot so you can see for yourself the unique benefits of Precise Word Matching AI for coding accuracy and the intuitive Cavo Health coding interface for coding speed.

Steve Butler
Senior Vice President, Business Development
630-388-8220

sbutler@cavolegal.com www.cavohealth.com