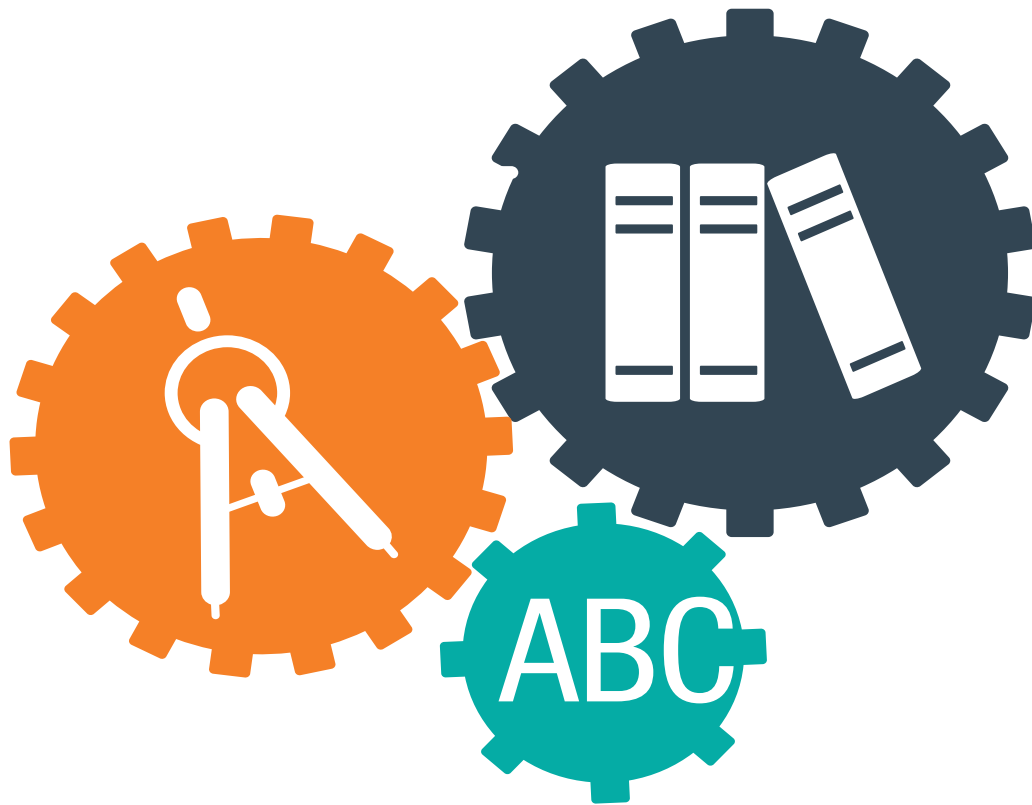


A quick guide to

3M's natural language processing (NLP) platform



Helping your organization with

- More accurate and efficient coding
- Trusted knowledge and data
- A successful transition to ICD-10

Making sense of NLP

And why it's important in health care



NLP can often be complicated and even confusing.

So it's not surprising that even IT-savvy healthcare professionals have difficulty digging out from under the avalanche of jargon when it comes to evaluating NLP.

As a result, organizations often struggle to understand NLP and how it meets their real-world needs, such as computer-assisted coding (CAC) and clinical documentation improvement (CDI).

This e-guide aims to:

- Demystify NLP
- Describe how it relates to healthcare information
- Demonstrate how it can benefit your organization

To see more about the basics of NLP, [click here](#) to watch a short video.

Applications of NLP in everyday life

E-mail spam
detection software



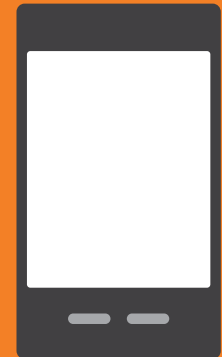
Educational essay
test-scoring systems



Voice mail
phone trees



Smartphones



As NLP advances in CAC and CDI applications, clinicians can move away from speaking to computers in a coded language; instead of resorting to human-to-computer communication, human-to-human communication can be effectively processed to produce actionable output.

3 essential elements

for successful NLP



Knowledge

Knowledge is required for NLP success—trustworthy, reliable knowledge about the subject matter. Coders use knowledge and expertise to help transform data into valuable information.



Language data

Vital to NLP success because human-written knowledge and rules don't cut it. No team of experts can capture every detail and complexity.



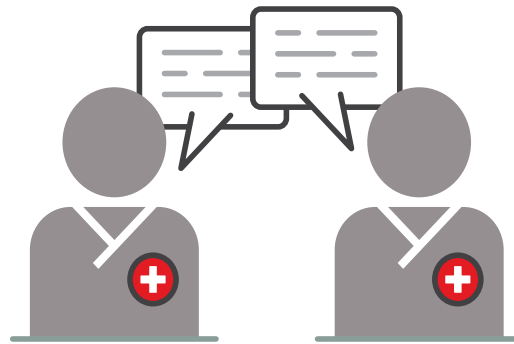
Machine learning

Algorithms and models allow machines to start with existing sources of knowledge, analyze new data, and improve their own capabilities.

What can **NLP** mean for **CAC** and **CDI**?



Today we expect clinicians to talk to computers, degrading the quality of communication



We want them to be able to communicate as if they were talking to another clinician

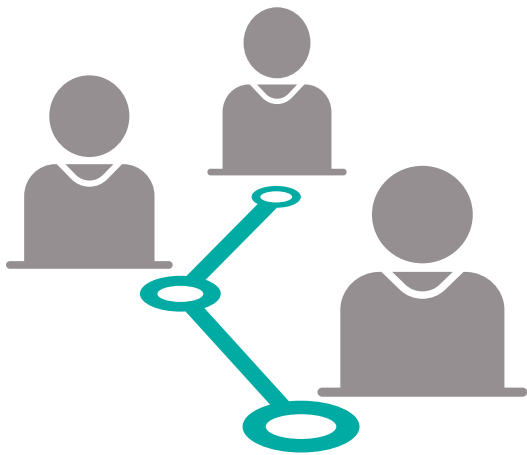


NLP allows the computer to follow the more effective “human-to-human” communication

For more in-depth information about how NLP relates to coding, [click here](#) to read a white paper on the topic.

What does it mean for the **ICD-10 transition** and **coder productivity**?

Although CAC and NLP won't magically make the impacts of ICD-10 go away, they can help with the transition in a number of ways.



NLP can help coders make more effective use of trusted knowledge resources in the less familiar ICD-10 setting.



When CAC is NLP-enabled, it can propose useful codes for coders to verify or edit.



NLP can facilitate the critical process of documentation improvement as providers and coders adapt to the new system.

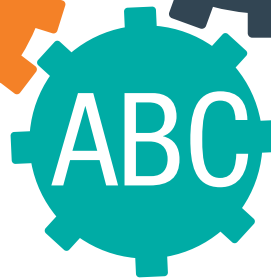
[Click here](#) to watch a short video about NLP and coder productivity.



Why choose 3M's NLP platform?

3M NLP platform

State-of-the-art statistical NLP combines expert-driven rules and knowledge, large-scale data analysis, and machine learning. Content is supported by vast expertise and clinical data.



3M™ Healthcare Data Dictionary

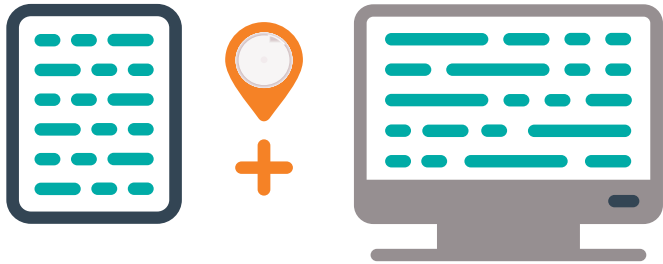
A robust terminology mapping process to translate clinical terms to codes.

The better the dictionary, the more accurate the results.

Language processing

The basis of all NLP systems. Diagramming sentences, identifying parts of speech (is the term a noun, verb, adjective?), negation, etc.

What 3M's NLP can deliver for your organization



Processes simple text directly with computer apps – automated coding and documentation improvement



Helps improve quality and reduce costs

ICD-10

Simplifies the complexity and coding overhead of the ICD-10 transition



Leverages patient information in clinical documentation



Common questions

about **NLP**

Is there a “best” NLP?

Not really. NLP is a multi-faceted technology that precludes the notion of a “best” NLP. “Best” for NLP depends on the application it is used in and the context in which it is applied. Today’s state-of-the-art NLP combines expert-driven rules, knowledge, large-scale data analysis, and machine learning.

Is protected health information (PHI) a problem for NLP systems?

From the perspective of data-driven NLP, all patients are anonymous. Data from a patient’s record—terms, phrases, concepts, codes or anything extracted from the learning process—ceases to be identifiable as belonging to any specific person or particular organization.

I hear about “precision and recall” in NLP. What does that mean?

Precision and recall are widely used to evaluate specificity and sensitivity in a medical diagnosis. Recall captures the extent to which you got all the codes you were supposed to, while precision measures the extent to which additional incorrect codes got mixed in.

Can systems really “understand” or “comprehend” clinical text?

No. Well-known NLP systems act as if they “understand” the human language, but getting computers to actually understand human language has been a dream of researchers since the earliest days of computing. Technologists know we are a long way from approaching true human understanding.

[Click here](#) to read more answers to common questions about NLP.



Putting it all together for your organization

3M is the home of the coding knowledge pioneers who defined the DRG standards; the teams who designed and delivered the 3M™ Codefinder™ Software, which coders trust for accurate, complete and compliant coding of medical records; and a nosology support staff that even clients who use competing vendors come to for guidance.

3M has kept clients up to date with current regulatory changes and updates for over 30 years, never once missing an update. Its computer-assisted coding product, the 3M™ 360 Encompass™ System, leads the market with over 1,300 hospital sites in the United States and growing, and 3M has a long-standing history of working with clients to make sure they get what they need.

Putting it all together, 3M offers a clear path forward to ICD-10 with state-of-the-art NLP and a solid track record of experience and trust.

To learn more about 3M's approach to NLP and CAC technology and how they can help your organization, contact your 3M representative today. You can also call us toll-free at **800-367-2447** or visit us online at www.3Mhis.com.



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