How NLP with AI Complemented by Professional Human Coders Improves Risk Adjustment Coding and Reduces Cost

Presented By:

Carey Ketelsen, *SVP, Risk Adjustment & Coding Operations* – **Ciox Health**

Andy Kumar, *VP Product Management & Strategy* – **Ciox Health**

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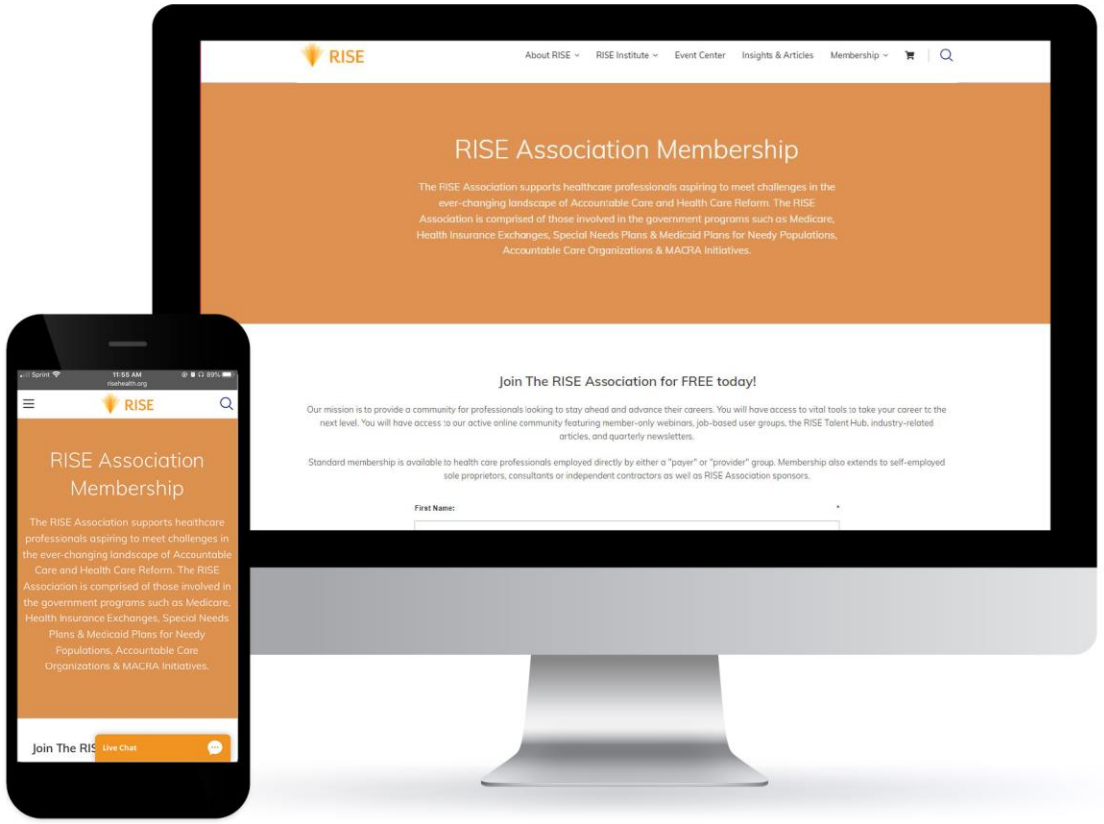

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Our Speakers

Carey Ketelsen
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VP Product Management & Strategy

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Agenda

- Welcome & Housekeeping
- Natural Language Processing (NLP) Overview
- Why Engage in Second Level Review (2LR)
- Use Cases for NLP with Coding
- How NLP improves Risk Adjustment
- Questions

About our Sponsor

Ciox: Clinical Data Acquisition & Insights (CDAI)
Multi-channel retrieval to maximize yield and minimize provider abrasion coupled with risk adjustment coding and member-centric data management

- Serving over 50 health plans, including 9 of top 10 (by membership)
- 1st in market share for chart retrieval; 18M+ records retrieved
- 3.5M+ charts coded annually; Medicare, ACA, Medicaid; onshore & offshore
- Deep experience in deploying multiple NLP technologies

NLP Overview

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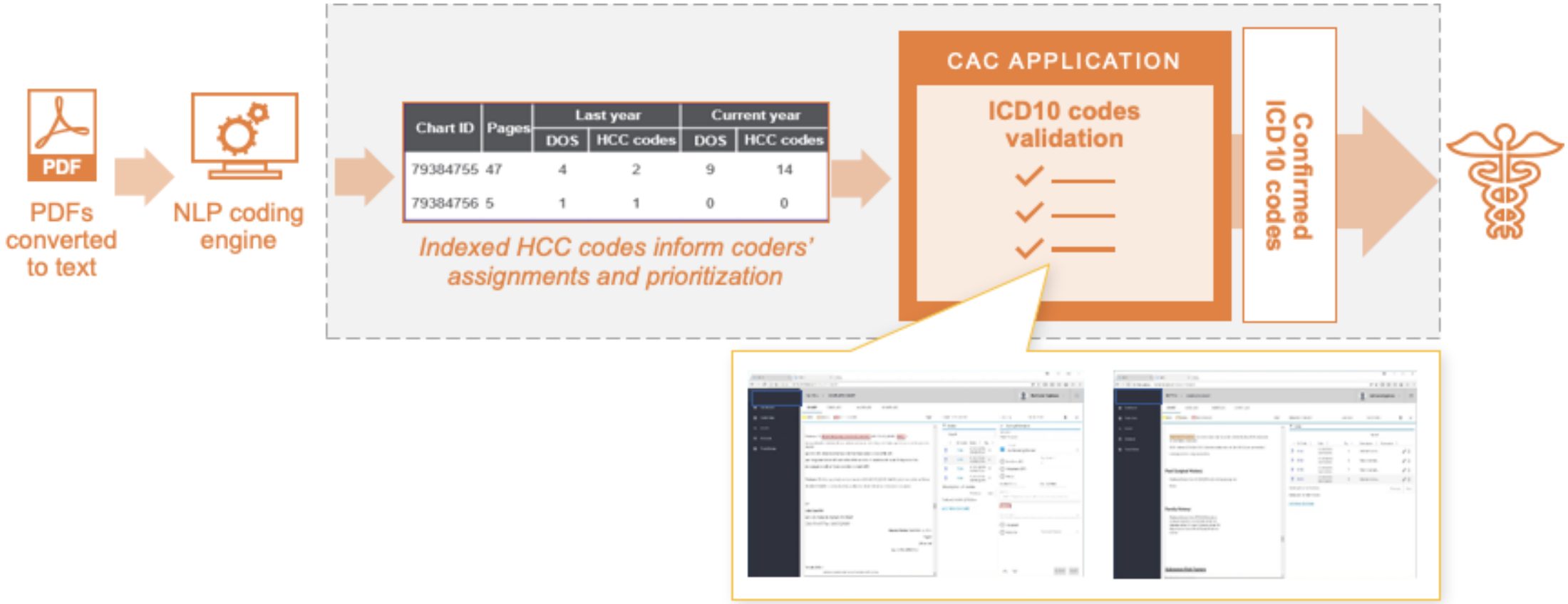
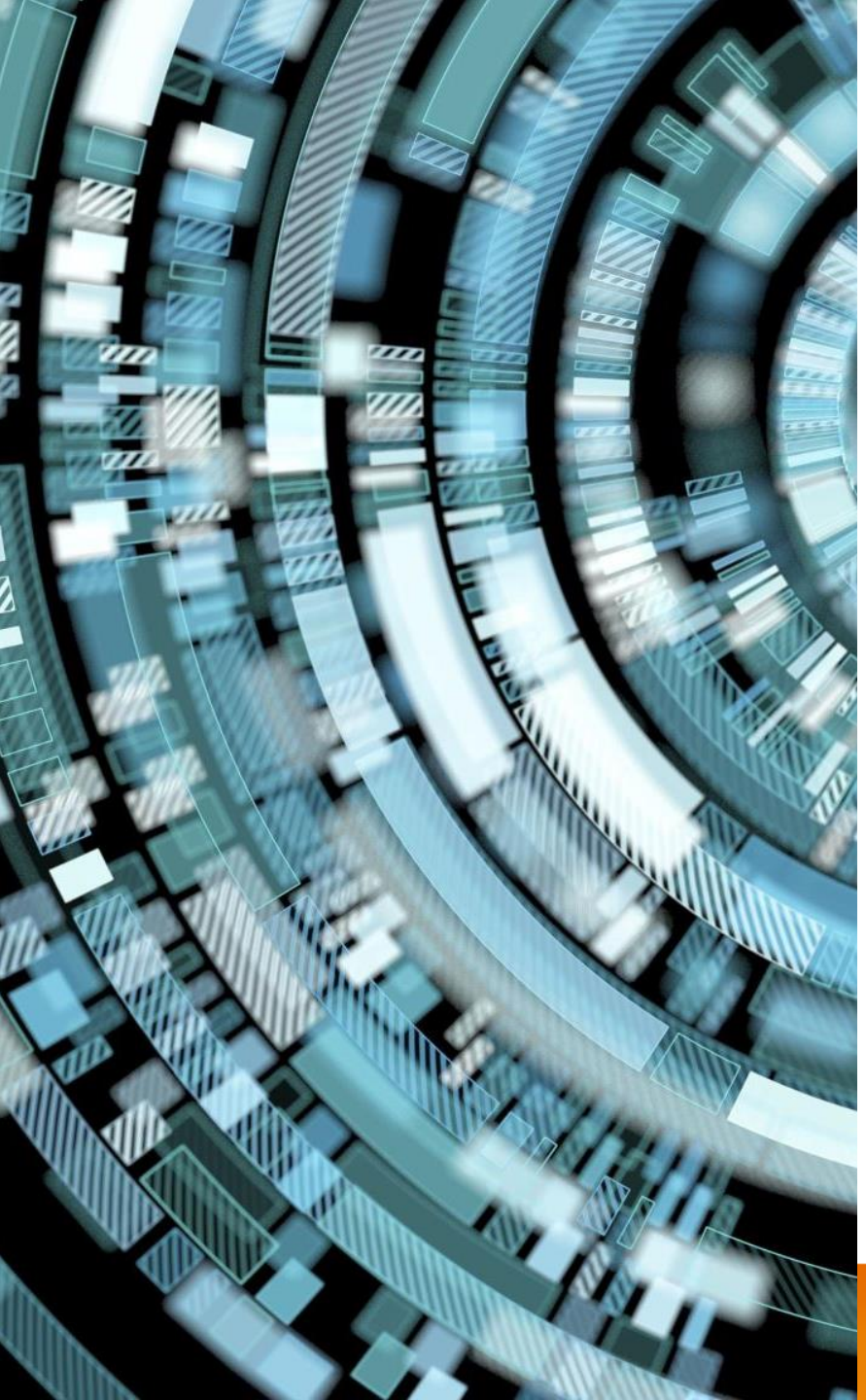
How NLP Works



How to evaluate NLP Technology

- NLP Integration in workflow
- NLP Accuracy: Precision & Recall
- One solution; multiple use cases
  - Retrospective Risk Adjustment
  - Prospective Risk Adjustment
  - Quality
- NLP coupled with Machine Learning



Future: NLP coupled with AI and Machine Learning

NLP technology coupled with AI and machine learning will take risk adjustment and quality programs into a new phase that will enhance the following

- Detection: Ability to detect condition based coding pattern
- Prognosis: Ability to detect new condition early based on leading heath indicator
- Visibility: Provide additional visibility based on clinical documentation pattern

Looking to the future, NLP will have proven to change how we define and work with risk adjustment programs

Poll Question

Why 2LR

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What is 2nd Level Review?

Solution overview

Use of natural language processing (NLP) and expert coder validation to assess the accuracy and/or completeness of first-pass coding results

How it works

- Use of best-in-class NLP technology to identify potential ICD-10 / HCC codes in medical records
- Compare identified codes against previously-identified results and highlight previously-unidentified potential member diagnoses
- Review any unmatched codes manually with trained coders

Why Engage In Secondary Reviews?

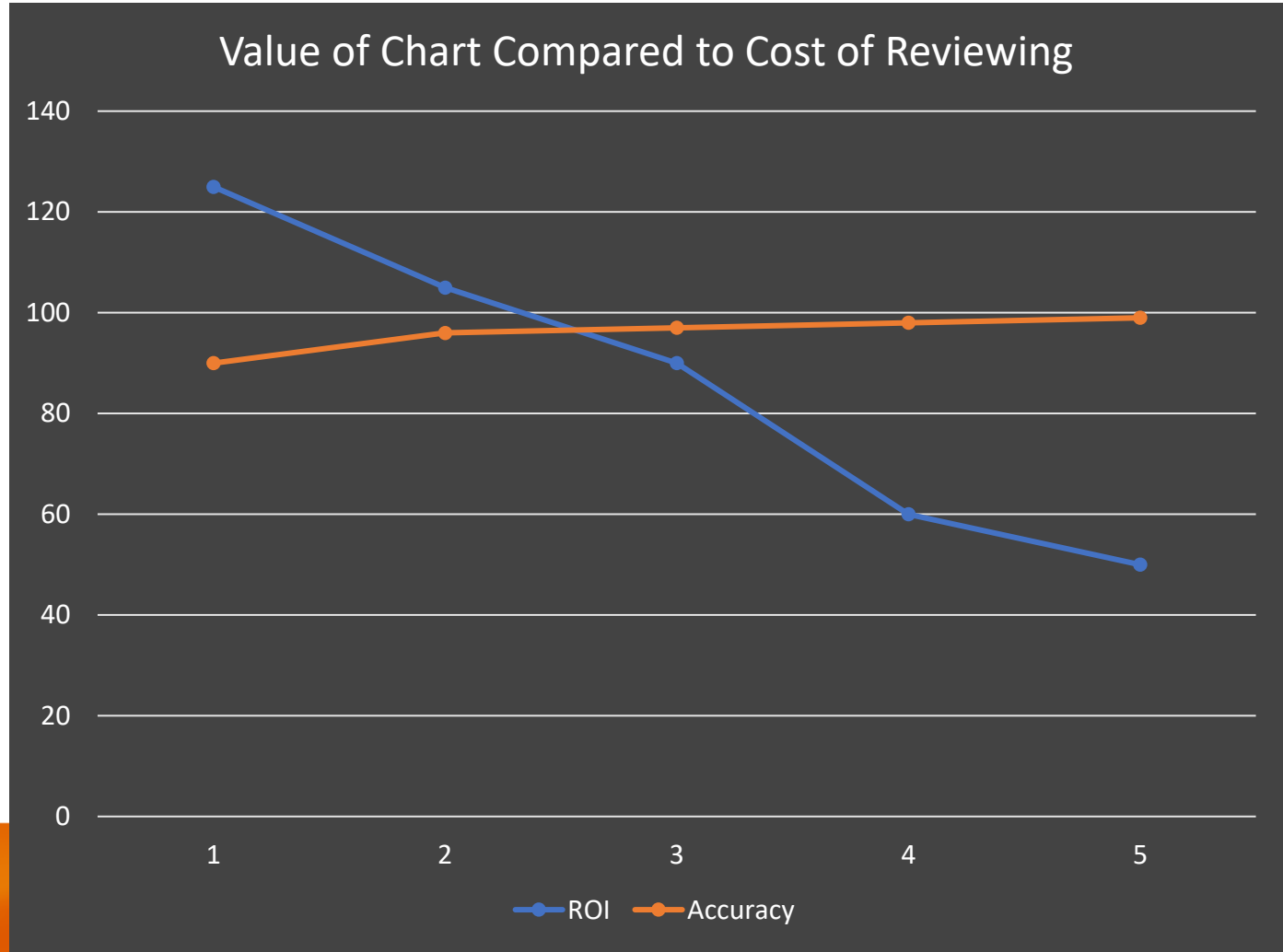
- More complete understanding of members' risk profiles without additional provider contact and abrasion

- Complement to existing coding efforts to bring higher confidence in the integrity of the risk adjustment program

High quality first pass coding still leaves ~5% of **conditions remaining un-coded** and **broad coding gaps**

Law of diminishing return – Extracting value at cost that makes sense

- 2nd level review can often deliver a ROI much greater than the cost
- Contributes to overall accuracy and completeness goals
- Assuming constant focus on program integrity and compliance: business strategy can be derived from the ROI on coded charts while monitoring cost of reviews



Case Study - 2LR Project Experience

Project Parameters

- ~100,000 charts processed as part of MRA project
  - All previously coded and reviewed
- Ciox utilized NLP to identify all diagnosis codes, compared those results to previous coding results and identified possible new codes
- Suspected new diagnoses were manually reviewed and validated by coders and auditors

Project Results

Members Reviewed

~15K

HCCs found per member

1.5

Revenue Increase

~$6M

ROI Improvement

8:1

Poll Question

NLP & Coding Use Cases

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NLP-Enabled 2nd Level Review – How Does It Work?

Data preparation	NLP Processing	Code Validation	Data Output and Report
• Client transfers medical records to Ciox • Client transfers original coding results by chart	• Ciox extracts potential ICD-10 codes from medical records using NLP technology • Ciox matches NLP results with HCC codes provided by client	• All unmatched codes are reviewed manually by trained coders	• Ciox returns a report of all incremental and incorrect HCC codes by member

You can be flexible in how to structure the program and capture insights from each chart

NLP for 1st level Review and auditing using professional coders

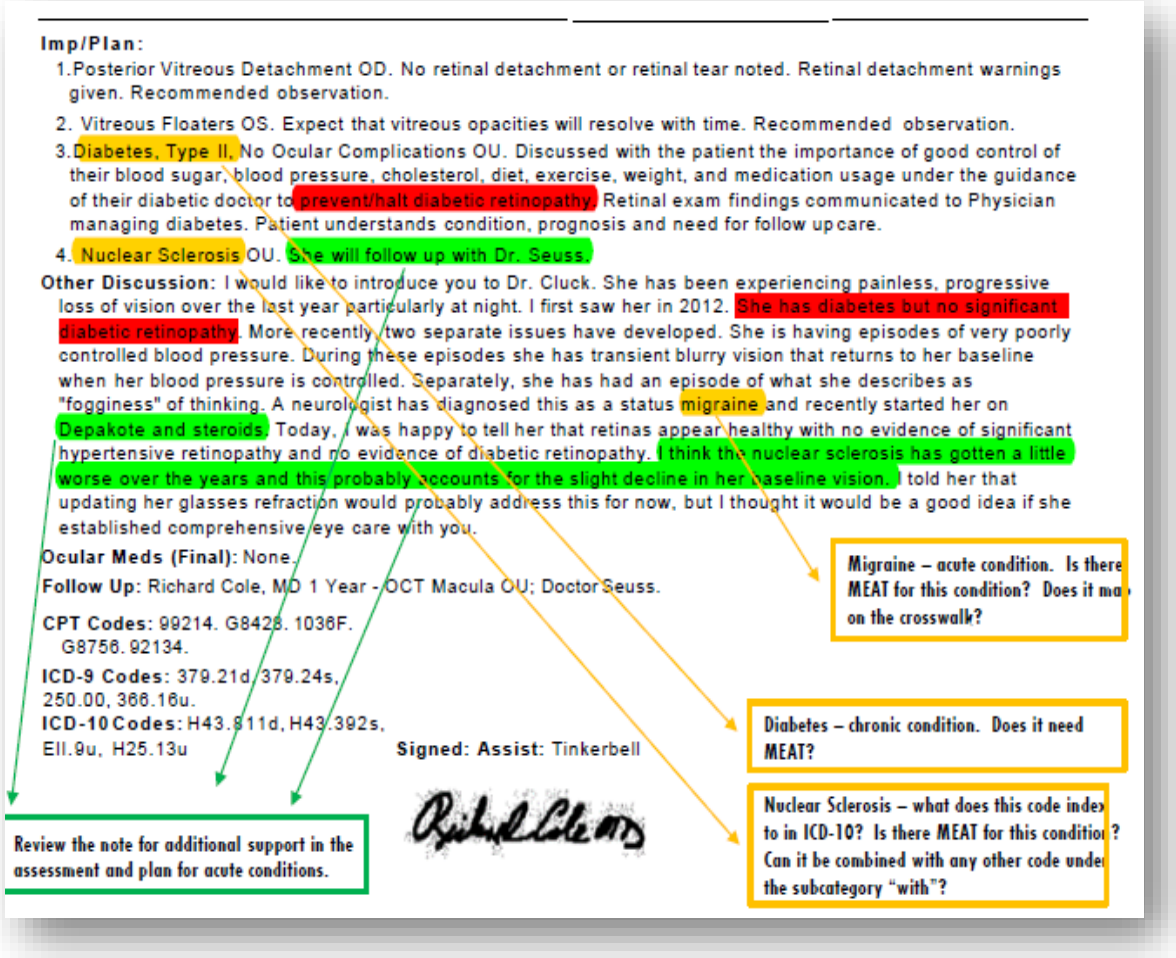
- Allows the combination of lift in productivity as well as accuracy – “best of both worlds”
- The use of NLP can improve the productivity and charts coded per hour
- Assigning expert coders to reviewing codes from NLP output allows coder to use their clinical skills and increase accuracy
- Can be challenging when coding at the diagnosis level and every date of service

Coders for 1st Level Review and NLP for audit

NLP can be utilized for audit purposes after expert coders perform 1st pass coding

Benefits:

- Identifies codes missed in chart, often in obvious places that can be coded from
- Can be tailored to target chronic conditions and correlating diagnosis codes that are expected to re-occur year over year
- Identify acute conditions buried in large IP charts
- Perform target audit on specific diagnosis codes
- Allows human coders to focus on areas that NLP struggles with, i.e. combo codes



With so many options, what is the best approach?

- 1st pass w/ coders
- 1st pass w/ NLP
- 1st pass w/ coders , audit w/ NLP
- 1st pass only, no 2LR
- NLP enabled 2LR
- 2LR review both “new” and “unmatched“ results
- 1LR & 2LR w/ coders, then 3LR w/ NLP
- NLP enabled 1LR, 2LR, 3LR

Checklist for Success

- ✓ 1st pass review w/coders
- ✓ Audit with coders/NLP
- ✓ NLP enabled 2LR
- ✓ 2LR > adds and deletes

NLP for Risk Adjustment

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5 ways NLP helps run a more targeted, efficient and accurate Risk Adjustment Program

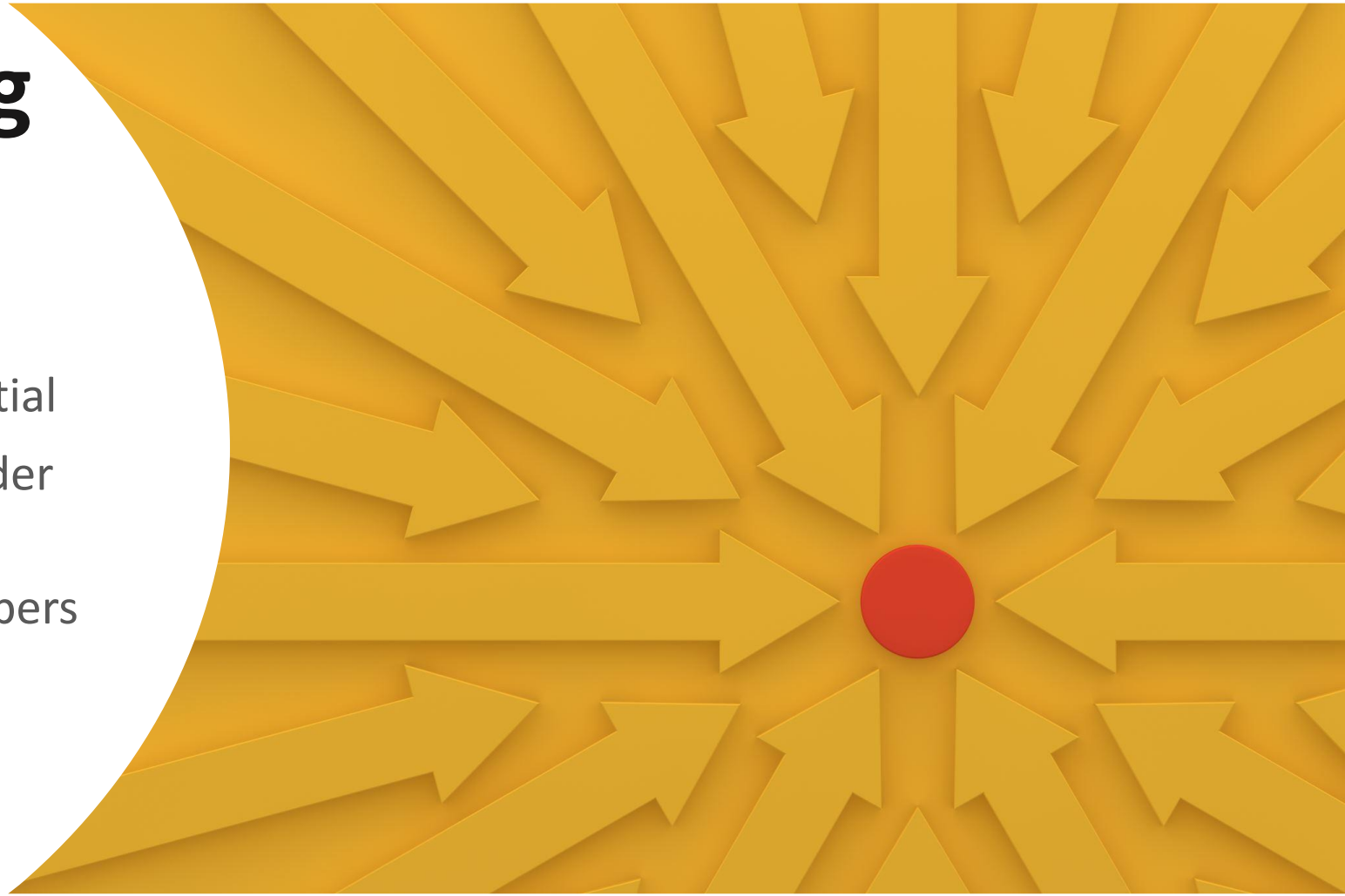
- Chase List Targeting
- Risk Condition Presence and grouping
- Chart Value & Segmentation
- Coding Accuracy Review
- Risk Adjustment Factor Accuracy Review

Chase List Targeting

- Provides higher quality predictions
- Identifies charts with greatest potential
- Helps decrease the number of provider charts to achieve the same result
- Enables inclusion of additional members

15-20% increase in average revenue per charts

30% increase in additional HCC per charts



Risk Condition Presence and grouping

- Fast identification of charts with risk condition
- NLP identifies and group charts based on risk code complexity

High Complexity	Med Complexity	Low Complexity
infarction/stroke	congestive heart failure	Hypertension

Chart Value & Segmentation

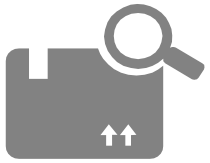
- Insure you are finding the most valuable charts first
- Ability to route charts based on condition type
- Ability to prioritize charts based on value and submission deadlines

Coding Accuracy Review

There are several benefits of running coding accuracy review coupled with NLP

- Coder review of the unmatched codes increases your accuracy and decreases compliance risk.
- The manual coding review is being done on fewer codes, making it more efficient.
- Usually coupled with an indexed and highlighted chart, the review of NLP codes is much faster than a traditional review.

The net effect results in higher coding accuracy rates at a lower cost than a traditional over-read.



 # Add. HCCs found per member

1.5

ROI Improvement

8:1

Risk Adjustment Factor Accuracy Review

A coding accuracy review is at the chart level, while a risk adjustment factor accuracy review is at the member level. This kind of review drives further accuracy and has deep benefits:

- Most codes found are validated from multiple sources.
- Member conditions are effectively matched to financial reimbursement.
- It can be executed at a nominal cost per chart.

Even when used as a standalone process, NLP can enhance your risk adjustment programs by bringing significant efficiency and accuracy to your coding operations

Questions

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THANK YOU