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

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We are a network of health care professionals addressing the challenges posed by the emerging landscape of value-based care and government health care reform.

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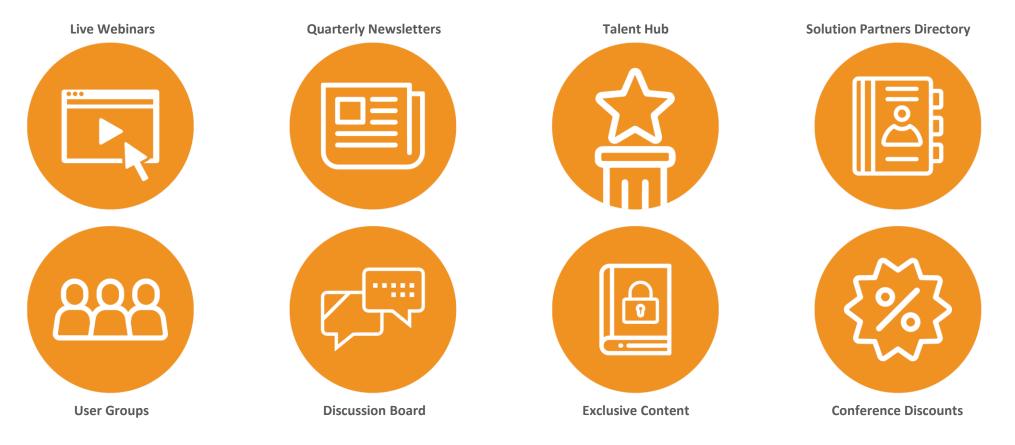
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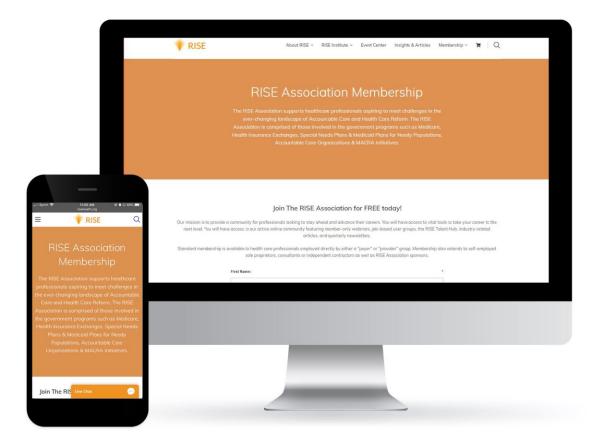
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Our Speakers



Carey Ketelsen SVP, Risk Adjustment & Coding Operations

Ciox Health



Andy Kumar VP Product Management

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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

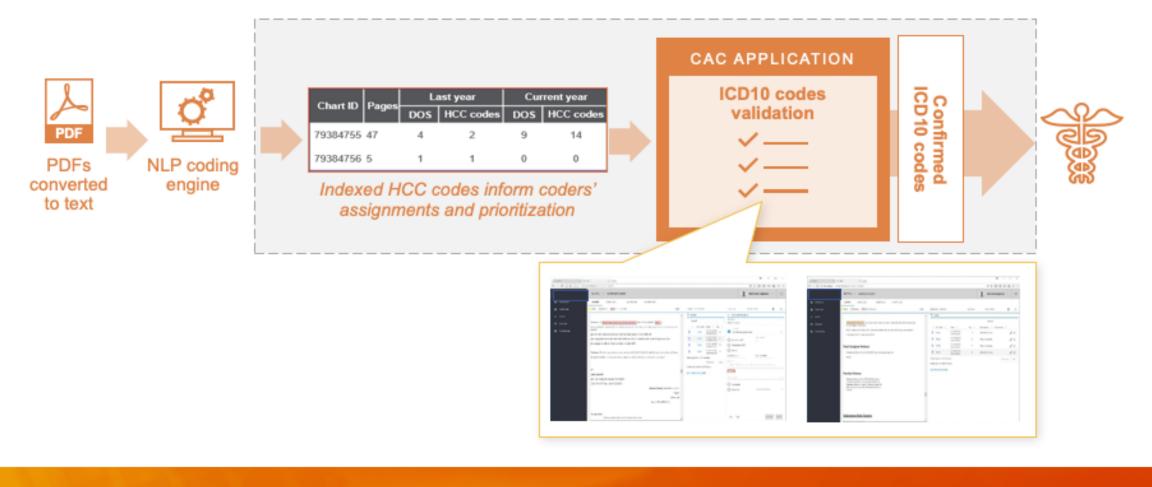


NLP Overview

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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 ۲



Why Engage In Secondary Reviews?



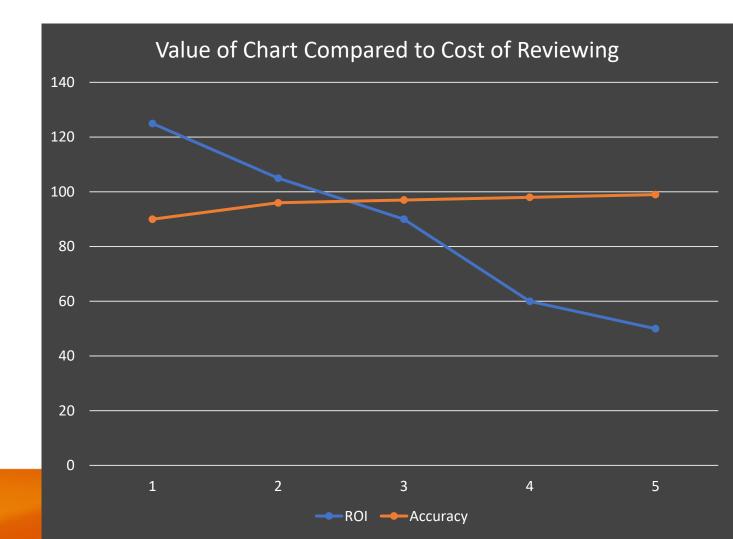
- More complete understanding of members' risk profiles without additional provider contact and abrasion
- Complement to existing coding efforts to bring higher confidence in the integrity of the risk adjustment program

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

- ~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



Members Reviewed

~15K



HCCs found per member

1.5

Revenue Increase **~\$6M**



ROI Improvement

8:1

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Poll Question



NLP & Coding Use Cases



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 	٠	Ciox extracts potential ICD-10 codes from medical records using NLP technology	٠	All unmatched codes are reviewed manually by trained coders	•	Ciox returns a report of all incremental and incorrect HCC codes by member
	٠	Ciox matches NLP results with HCC codes provided by client				e in how to structure the e 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

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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

Imp/Plan:

1.Posterior Vitreous Detachment OD. No retinal detachment or retinal tear noted. Retinal detachment warnings given. Recommended observation.

2. Vitreous Floaters OS. Expect that vitreous opacities will resolve with time. Recommended observation.

3. Diabetes, Type II, No Ocular Complications OU. Discussed with the patient the importance of good control of their blood sugar, blood pressure, cholesterol, diet, exercise, weight, and medication usage under the guidance of their diabetic doctor to prevent/halt diabetic retinopathy) Retinal exam findings communicated to Physician managing diabetes. Patient understands condition, prognosis and need for follow upcare.

4. Nuclear Sclerosis OU. She will follow up with Dr. Seuss.

Other Discussion: I would like to introduce you to Dr. Cluck. She has been experiencing painless, progressive loss of vision over the last year particularly at night. I first saw her in 2012. She has diabetes but no significant diabetic retinopathy. More recently two separate issues have developed. She is having episodes of very poorly controlled blood pressure. During these episodes she has transient blurry vision that returns to her baseline when her blood pressure is controlled. Separately, she has had an episode of what she describes as "fogginess" of thinking. A neurologist has diagnosed this as a status migraine and recently started her on Depakote and steroids. Today, was happy to tell her that retinas appear healthy with no evidence of significant hypertensive retinopathy and no evidence of diabetic retinopathy. I think the nuclear sciences has gotten a little worse over the years and this probably accounts for the slight decline in her vaseline vision. I told her that updating her glasses refraction would probably address this for now, but I thought it would be a good idea if she established comprehensive/eye care with you.

Ocular Meds (Final): None Follow Up: Richard Cole, MD 1 Year - OCT Macula OU; Doctor Seuss. CPT Codes: 99214. G8428. 1036F. G8756. 92134. ICD-9 Codes: 379.21d/379.24s. 250.00, 366.16u. ICD-10 Codes: H43.811d, H43.392s, Ell.9u, H25.13u Signed: Assist: Tinkerbell

Review the note for additional support in the

assessment and plan for acute conditions.

Migraine – acute condition. Is there MEAT for this condition? Does it may on the crosswalk?

Diabetes – chronic condition. Does it need MEAT?

Nuclear Sclerosis – what does this code index to in ICD-10? Is there MEAT for this condition? Can it be combined with any other code under the subcategory "with"?

With so many options, what is the best approach?

Che	1 st pass w/ coders
CITE	1st pass w/ NLP
✓ 1 st p	1 st pass w/ coders , audit w/ NLP
🗸 Aud	1 st pass only, no 2LR
	NLP enabled 2LR
✓ NLP	2LR review both "new" and "unmatched" results
✓ 2LR	1LR & 2LR w/ coders, then 3LR w/ NLP
	NIP enabled 11P 21P 21P



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



NLP for Risk Adjustment

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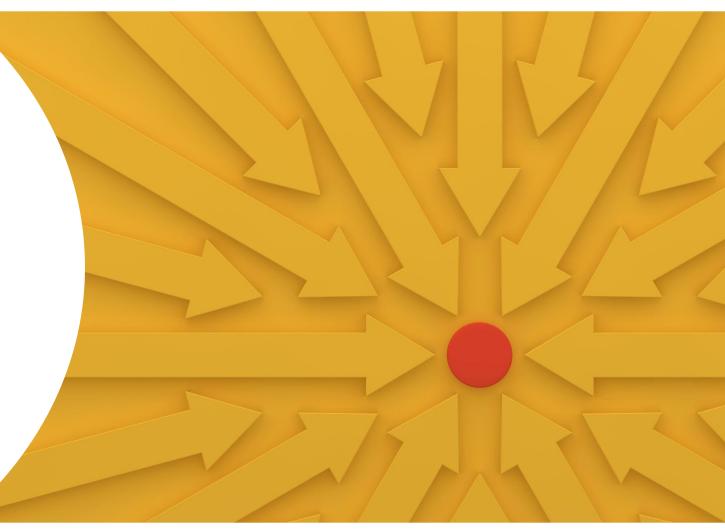
5 ways NLP helps run a more targeted, efficient and accurate Risk Adjustment Program

- 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	
infarction/stroke	

Med Complexity congestive

heart failure

Low Complexity

Hypertension



Chart Value & Segmentation

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- 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

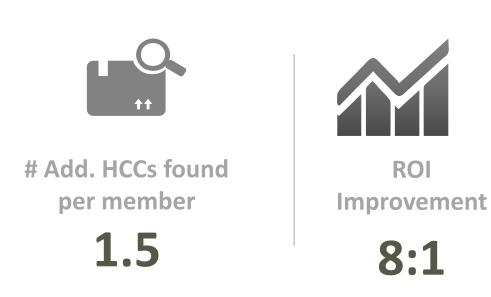


Coding Accuracy Review

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.







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

