



CAPITAL DISTRICT PHYSICIANS' HEALTH PLAN, INC (CDPHP®): ACCELERATING QUALITY IMPROVEMENT WITH ASTRATA'S DIGITAL QUALITY SOLUTIONS

Impact of using an AI-driven prospective HEDIS solution on clinical quality rates, labor costs, and operations

July 30, 2024

KEY METRICS

CDPHP FIRST ENGAGED ASTRATA IN 2023 TO HELP THEM SCALE THEIR PROSPECTIVE HEDIS SEASON. OVER A PERIOD OF 2 MONTHS IN 2023, CDPHP CLOSED OVER 15,000 GAPS.

PRODUCT ACCURACY



Agreement of CDPHP abstractors with gap identified by Astrata as compliant

96.8%

AVERTED COSTS



Percentage of noncompliant member encounters that did not require manual record review by CDPHP abstractors

94%

UNIQUE RATE IMPACT

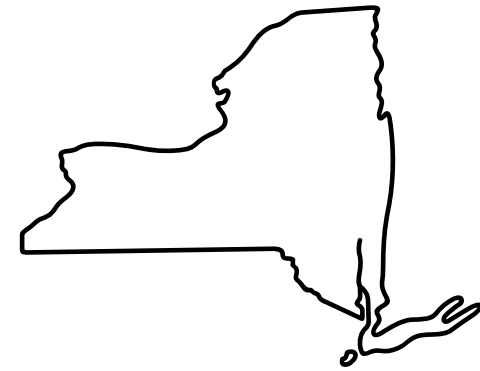


Unique additional HEDIS compliance from Astrata source obtained in 2023

0.1% - 11.1%
measure-dependent

SETTING

CAPITAL DISTRICT PHYSICIANS' HEALTH PLAN, INC (CDPHP®)



Founded and led by physicians for 40 years, CDPHP is a locally-based, not-for-profit health plan with main service areas in the Albany and Hudson Valley regions. CDPHP Provides health care coverage to nearly 400,000 members across all lines of business (commercial, self-funded, and government programs) in 36 counties in upstate New York. CDPHP Value-based payments reward providers for quality performance, member experience, and desirable clinical outcomes.

As a high performing health plan (4.5 - 5 Stars for all product lines), CDPHP quality programs are data driven, and guided by the CDPHP Board of Directors and Quality Management Committee. "Drive to 5" is an enterprise-wide theme, encouraging employees to think about HEDIS as an everyday activity. As NCQA measures transitioned to more ECDS measures, CDPHP began using NLP to supplement data as a first step towards a full DQM solution.

DRIVE TO 5

- ★ INCREASE HEDIS QUALITY RATES FOR KEY POPULATIONS
- ★ REDUCE LABOR COSTS TO SCALE PROSPECTIVE REVIEW
- ★ DECREASE PROVIDER DOCUMENTATION BURDEN
- ★ AVOID MEMBER ABRASION
- ★ ACCELERATE AND SIMPLIFY HYBRID SEASON

SCALING PROSPECTIVE REVIEW

CDPHP sought to leverage unstructured clinical data to enhance their quality improvement programs. CDPHP was already performing prospective HEDIS review across a smaller number of measures and members, using internally-developed natural language processing (NLP) software. However, scaling the internal solution to a larger number of members, across different measures and data formats was challenging. CDPHP selected Astrata's Chart Review solution to take their prospective review program to the next level.



ASTRATA
SOLUTION



CHART REVIEW

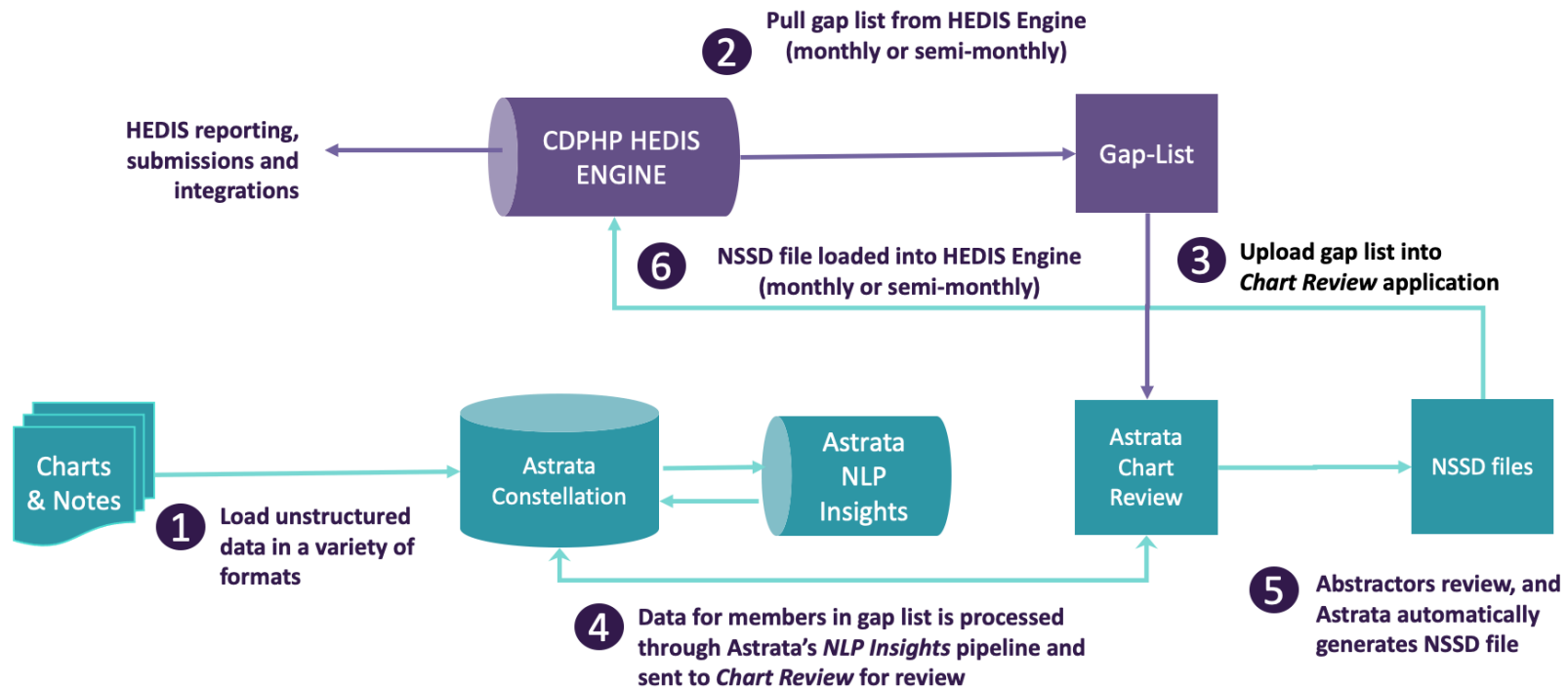
NLP-powered chart abstraction

- Ingests PDF charts, HL7 and other formats to analyze entire medical record
- Classifies gaps as Hits, Exclusions, Leads or none of these.
- Guides reviewers to gaps and encounters that produce the most value
- Provides abstraction interface for reviewers to confirm service details and close gaps
- Produces non-standard supplemental file
- Works with any HEDIS engine

SOLUTION

DATA FLOW

CDPHP IMPLEMENTED THE STANDARD ASTRATA DATA FLOW USING OUR CLOUD-BASED PRODUCT. ASTRATA'S PRODUCTS ARE DESIGNED TO FIT CLEANLY INTO EXISTING DATA FLOWS, AND INTEGRATE EASILY WITH ANY HEDIS ENGINE.



IMPLEMENTATION DETAILS

MY23 SNAPSHOT

MEMBER DATA	MEASURES	USERS	RESULTS
<p>>76,000 MEMBERS, ALL LINES OF BUSINESS</p> <p>Data provided in PDF format with associated metadata. Data was sourced from several EHRs.</p>	<p>5 MEASURES ENCOMPASSING 8 SUB-MEASURES</p> <p>Measures included BCS, CCS, COL, TRC-3, TRC-4, WCC-1, WCC-2, WCC-3.</p>	<p>9 ABSTRACTORS & 8 REVIEWERS</p> <p>CDPHP abstractors were trained for 1 hour prior to starting to use the system.</p>	<p>>15K GAPS CLOSED IN 66 DAYS</p> <p>98% of records collected yielded an impact on HEDIS.</p>

Strategic measure and population selection is an important yearly activity for establishing a successful HEDIS prospective season

HIGH ABTRACTOR AGREEMENT

PERCENTAGE OF GAPS WHERE ABSTRACTORS AGREED WITH THE ASTRATA CLASSIFICATION AND WERE ABLE TO CLOSE THE GAP. PERCENTAGE AGREEMENT DIRECTLY CORRELATES WITH THE VALUE OF THE PRODUCT TO A PROSPECTIVE REVIEW SEASON.

01

ACCURACY

PERCENT
AGREEMENT

MEASURES
FALSE
POSITIVES
IN USAGE

METHODS

Chart Review reports automatically capture the AI classification (Hit, Exclusion, Lead, No Hit) as well as the abstractor determination, and whether the hit or exclusion was closed by the abstractor (and over-reader). Astrata monitors this metric throughout the prospective season to help identify and

We removed gaps where the abstractor determination was later determined to be incorrect. These cases provide useful feedback for improving abstraction.

RESULTS

96.8%

PERCENTAGE OF HITS AND
EXCLUSIONS WHERE ABSTRACTORS
AGREED WITH CHART REVIEW'S
DECISION, ACROSS ALL
IMPLEMENTED MEASURES

PRODUCT ACCURACY

GOLD STANDARD ACCURACY

ASSESSES FALSE POSITIVE AND FALSE NEGATIVES USING AN ANNOTATED “GOLD STANDARD” ON CUSTOMER DATA. PROVIDES THE MOST RIGOROUS YEARLY ASSESSMENT OF NLP ACCURACY, AND IS USED TO MONITOR AND INCREASE ACCURACY FOR EACH CUSTOMER PRIOR TO YEARLY RELEASE.

02

ACCURACY

PRECISION,
RECALL, F1

MEASURES
FALSE
POSITIVES &
FALSE
NEGATIVES

METHODS

During implementation, we sample customer data and enlist Astrata clinical experts to annotate these charts for all HEDIS inclusion and exclusion criteria for the selected measures. We test the AI system against this “gold standard” to evaluate whether the measure is sufficiently accurate for release.

Precision (PPV)	$TP / (TP + FP)$	Measures False Positives (FPs)
Recall (Sensitivity)	$TP / (TP + FN)$	Measures False Negatives (FNs)
F1	$2 * (Precision * Recall) / (Precision + Recall)$	From 0-1 (higher is better). Balances FPs and FNs

RESULTS

	Precision		Recall		F1	
	MY23	MY24	MY23	MY24	MY23	MY24
BCS	0.86	0.9	0.91	0.92	0.89	0.91
CCS		0.78		0.83		0.8
COL	0.73	0.87	0.81	0.8	0.77	0.83
WCC	0.9	0.87	0.87	0.88	0.88	0.88
TRC	0.81	0.83	0.75	0.81	0.78	0.82

Astrata typically optimizes for F1, a balance of false positives and false negatives, during the tuning process. With interval error analysis and refinements, the goal is to further increase accuracy over time.

REDUCED ABTRACTOR WORKLOAD

PERCENTAGE OF MEMBERS, GAPS AND DOCUMENTS (ENCOUNTERS) THAT WERE TRIAGED FOR REVIEW. QUANTIFIES THE REDUCED WORKLOAD OF USING THE ASTRATA PLATFORM.

03

AVERTED
COSTS

% DECREASE
IN REQUIRED
REVIEW

MEASURES
WORKLOAD
REDUCTION

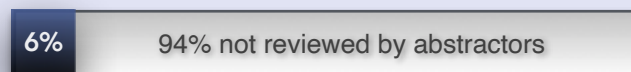
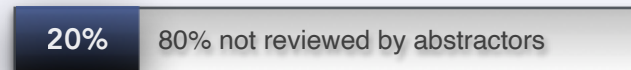
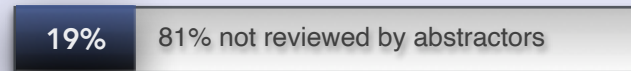
METHODS

Member review percentage = % of non-compliant members in gap list that required review by CDPHP abstractors

Gap review percentage = % of gaps in gap list that required review by CDPHP abstractors

Document review percentage = % of unique documents (encounters) for members in gap list that required review by CDPHP abstractors

RESULTS



AVERTED COSTS

INCREASED ABTRACTOR SPEED

SPEED OF GAP CLOSURE (GAPS CLOSED PER HOUR) BY ABSTRACTORS USING THE *CHART REVIEW* PRODUCT. USED TO COMPARE AGAINST BASELINE SPEED AND MODEL AVERTED COSTS THROUGH MARKED EFFICIENCY GAINS.

04

AVERTED COSTS

GAPS CLOSED PER HR

MEASURES EFFICIENCY GAINS

METHODS

Chart Review reports automatically capture the time required for abstractors to process a gap, from opening the case to submitting all service details.

Median* gaps closed per hour =
Number of Hits or Exclusions closed per hour, across all measures

** We use median as the measure of central tendency because the data is highly skewed. Artificially long case-times occur when abstractors forget to close a case, or when work is interrupted with an unrelated activity*

RESULTS

30

MEDIAN GAPS CLOSED PER HOUR (WITH *CHART REVIEW*)

6

GAPS CLOSED PER HOUR (HISTORICAL, WITHOUT *CHART REVIEW*)

MECHANISMS

HOW DOES PROSPECTIVE REVIEW INCREASE HEDIS AND STARS RATES?

1

ALL MEASURES:

INCREASES OPPORTUNITIES TO CLOSE GAPS DURING MEASUREMENT YEAR; FURTHER ACCELERATED WITH LEADS PROGRAM

2

ADMIN MEASURES:

DIRECTLY INCREASES COMPLIANCE RATE WITH ABSTRACTION; CRITICAL TO ADDRESS HYBRID METHODOLOGY REMOVAL

3

HYBRID MEASURES:

REDUCES MISSED COMPLIANCE BY SCOURING CHART; INCREASES ABILITY TO REPORT HIGHER ADMIN RATE WHEN HYBRID SAMPLE IS BIASED TO INCLUDE FEWER CLOSABLE GAPS

Multiple mechanisms contribute to the increase in HEDIS rates observed when performing prospective review during the measurement year. Impact will be proportional to the fraction of population and data used.

HEDIS RATE IMPACT

UNIQUELY IMPACTS HEDIS RATE

MEASURES THE UNIQUE RATE IMPACT OF THE ASTRATA IMPLEMENTATION ON A SMALLER DATASET AND POPULATION IN YEAR 1, AND THEN EXTRAPOLATES IMPACT ACROSS POPULATION.

05

HEDIS RATE
IMPACT

% UNIQUE
RATE IMPACT

MEASURES
UNIQUE
IMPACT

METHODS

In column 3, we show unique impact by dividing the numerator counts sourced exclusively from Astrata data by the health plan's total eligible population minus the exclusions sourced exclusively from Astrata data. A 10-month rolling look-back period was employed, including both 2023 and some of 2024, aligning with the CDPHP method for calculating rates and determining incentives in value-based programs.

In column 4, we extrapolated the results from the smaller population to 100% of the denominator in order to estimate the impact on the entire population and to account for the short (2-month) 2023 prospective season.

RESULTS

Measure	Denominator	Unique rate impact on smaller Y1 population	Estimated unique rate impact (scaled up to larger population)
WCC Nut	48,863	11.10%	11.40%
WCC PA		9.60%	10.60%
WCC BMI		6.70%	7.40%
COL	111,125	1.10%	2.00%
CCS	73,174	0.10%	0.20%
BCS	45,338	0.20%	0.30%

*We excluded TRC because of data and processing issues which reduced the number of hits and exclusions in 2023.

** For some measures we saw larger numbers of exclusions which could remove these members permanently from the denominator, decreasing unnecessary outreach in subsequent

HEDIS RATE IMPACT

HIGHEST SPECIFICITY NSSD SOURCE

GAPS CLOSED BY THE CDPHP HEDIS ENGINE AS A PERCENTAGE OF THE TOTAL DATA LOADED. QUANTIFIES THE REDUCED EFFORT THAT MUST BE EXPENDED ON NON-STANDARD SUPPLEMENTAL (NSSD) DATA SOURCE REVIEW COMPARED TO ALTERNATIVES.

06

SOURCE
SPECIFICITY

% INPUT
PRODUCING
CLOSURES

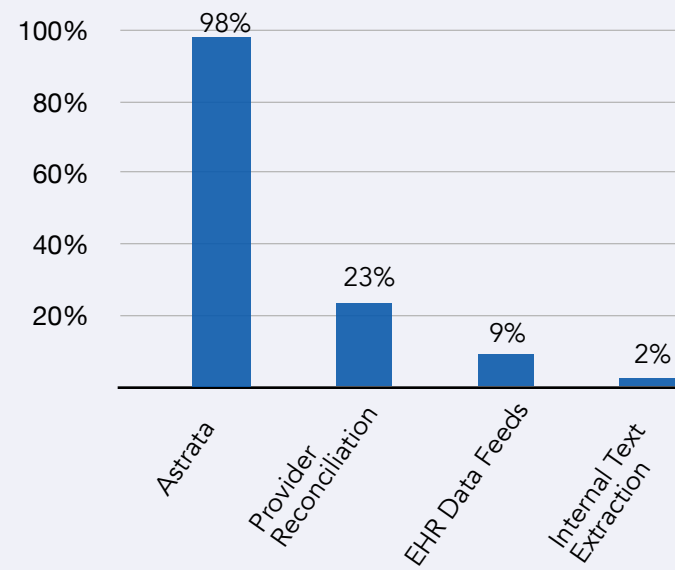
MEASURES
COMPARATIVE
IMPACT

METHODS

For each independent data source, the number of records that resulted in a numerator count or exclusion is shown as a percentage of records loaded into the HEDIS engine. CDPHP internally audits 80-100% of non-standard supplemental sources.

Astrata's digital quality solutions produce data that is more member and measure specific than other non-standard sources.

RESULTS

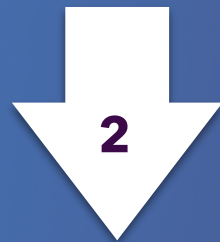


HEDIS RATE IMPACT

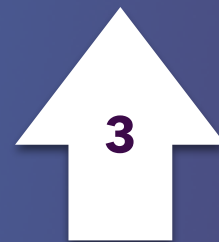
VALUE ANALYSIS



HIGHER HEDIS RATES
across both
administrative and
hybrid HEDIS measures



**LOWER PROVIDER
BURDEN**
by reducing provider
workload and limiting
documentation that
must be submitted and
by improving gap lists
returned to providers



**MARKED EFFICIENCY
GAINS**
enabling the existing
abstraction team to
dramatically scale up
prospective review



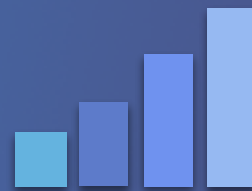
**REDUCED MEMBER
ABRASION**
by identifying and
closing gaps with
compliance evidence
(especially exclusions) to
prevent unnecessary
phone calls and other
communications

COL IMPACT

Colorectal Cancer Screening (COL) is important in preventing the second-leading cause of cancer death, and is a CMS Medicare Advantage Star Rating measure. Once a hybrid measure, Colorectal Cancer Screening (COL) is now “ECDS-only”. This measure is highly susceptible to under-measurement because of the long look-back period and prevalence of this data within free text fields and clinical notes.

Reduced member abrasion

Repeated reach-outs to members excluded from COL (previous colorectal cancer or total colectomy) can lead to member disengagement. Prospective review closes these exclusions and reduces member abrasion.



COL is predicted to increase by 2% as CDPHP scales prospective review

Gap closure longevity

COL gap closures produce more sustained impact because they generate a longer period of compliance. In the case of “screening colonoscopy”, the gap remains closed for 10 years.

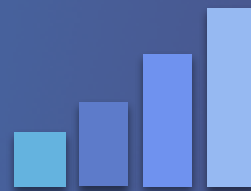
A two percent increase in the COL rate represents over 2,200 members with a closed care gap, which supports gap list accuracy and prevents wasteful and unwarranted member outreach and provider attention.

WCC IMPACT

Weight Assessment and Counseling for Nutrition and Physical Activity of Children/Adolescents (WCC) is a key NY state Medicaid measure that addresses the growing epidemic of childhood obesity. As of 2024, WCC remains an NCQA hybrid measure, abstracted yearly. However, improving pediatric health is a year-round effort at CDPHP.

Documentation Improvement

Reviewing Leads in Astrata's Chart Review product, CDPHP could specifically identify providers who did not correctly document BMI percentile, which is required for compliance. Through provider education and outreach, CDPHP can help these providers to be fully credited for their efforts in the future.



WCC is predicted to increase by 9.8% as CDPHP scales prospective review

Year-Round QI

Monitoring BMI, nutrition and physical activity is a foundation of pediatric health. WCC is an example of a measure where substantial compliance is recorded during sample season, which does not support actionable data collection. By collecting data prospectively, CDPHP supports its population health management goal to reduce the proportion of children with obesity.

FUTURE WORK

2024 - 2025

BUILDING ON THE SUCCESS OF THEIR FIRST YEAR, CDPHP PLANS TO FURTHER ADVANCE ITS DIGITAL MEASUREMENT STRATEGY USING ASTRATA'S PLATFORM

Scale and expand

CDPHP will use Astrata's Chart Review to perform prospective review across more members, more measures and all lines of business

Introduce Digital Quality Measures

Using Astrata's eMeasure solution, CDPHP is mapping its clinical data to FHIR and will be computing selected measures using the new digital standard

Follow the "leads"

Identifying quality improvement opportunities and acting on them throughout the measurement year will further increase impact on HEDIS rates

Establish Surveillance

Using Astrata's products, CDPHP is moving to surveillance approaches for important measures such as Glycemic Status Assessment for Patients with Diabetes (GSD)

CMS has set 2030 as the date for health insurers to transition to digital quality measurement, closely aligned with the goal for all Medicare and most Medicaid beneficiaries to be in an accountable care relationship by that time.

This timeline also aligns with ONC interoperability requirements. A complete digital quality platform supports faster, less-burdensome and more accurate healthcare quality measurement.



LEARN MORE

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Astrata is located in Pittsburgh's East End neighborhood, along "AI Avenue", and close to many other leading AI companies