



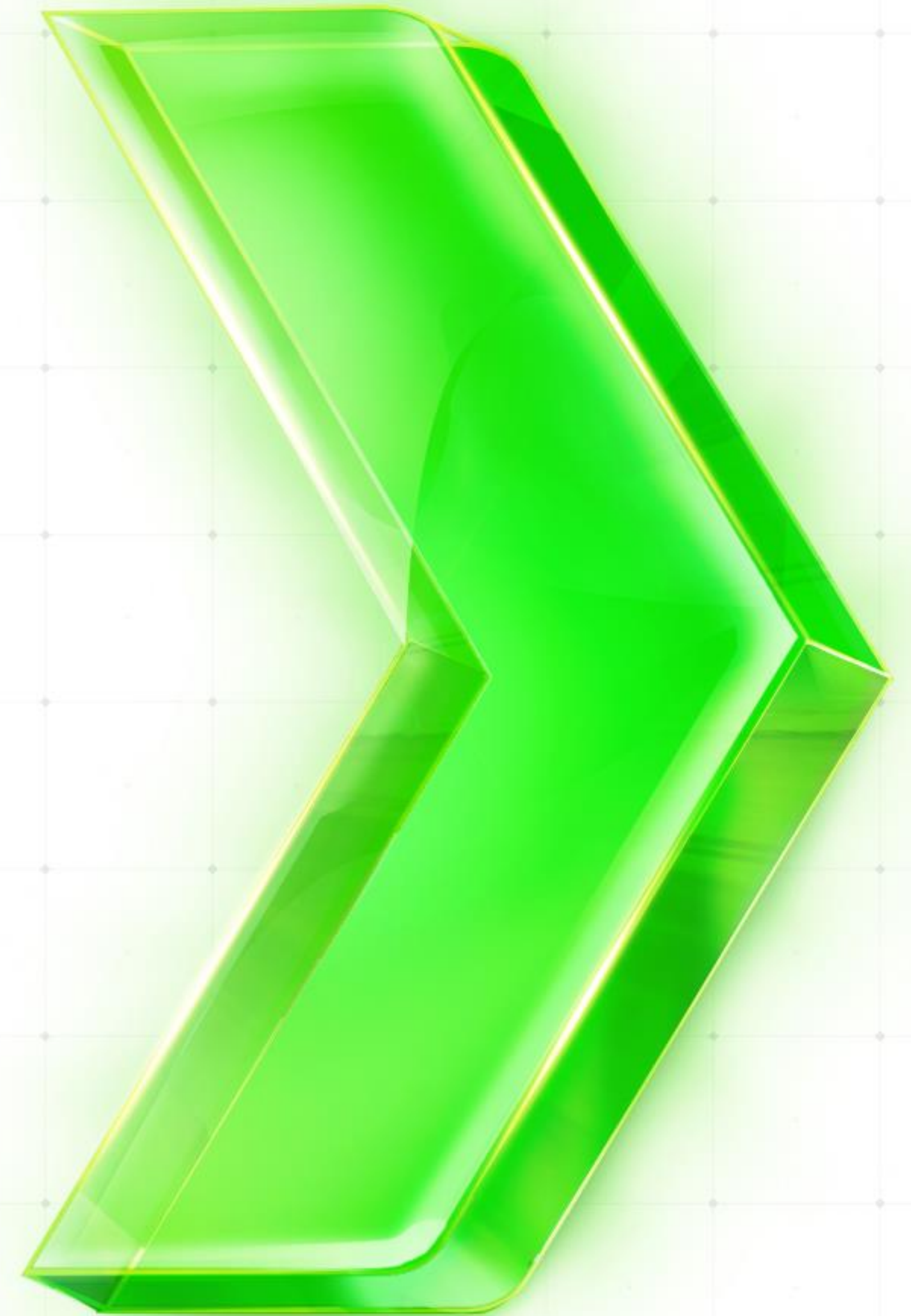
Haven for Healthcare

Episodes of Care Analytics

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Haven Analytics Platform Overview for Episodes of Care

Provided as a Service



Hadoop, Autonomy, Vertica, Enterprise Security, N apps - Progress Business Rules, Tableau Visualizations, SAS, BO

Data - T-MSIS, Episode Extract

Episodes Library



57 Episodes

Acute Conditions

Chronic Conditions

Behavioral Health Conditions

Visualization and Tools



Rules modeling to conduct “what if” scenarios to support program and policy reform

Assess Providers performance with drilldown capability into Episode claims, spend and quality

Threshold modeling tool to assess values for financial and quality performance

Profiling and Studies visualizations for specific use-cases using Episode data

Haven Episode of Care Library



No.	Episode	No.	Episode
1	Acute percutaneous coronary intervention	31	Hysterectomy
2	Acute Seizure	32	Knee arthroscopy
3	Acute Gastroenteritis	33	Kidney and Urinary Tract Stones
4	Ankle sprain/strain	34	Knee sprain/strain
5	Appendectomy	35	Low back pain
6	Asthma	36	Neonatal – Low risk
7	Attention deficit and hyperactivity disorder	37	Neonatal – Moderate risk
8	Back / Neck pain	38	Neonatal – High risk
9	Bariatric Surgery	39	Non-acute percutaneous coronary intervention
10	Breast biopsy	40	Oppositional defiant disorder
11	Breast cancer surgery	41	Otitis media
12	Breast medical oncology	42	Pancreatitis
13	Bronchiolitis	43	Pediatric acute lower respiratory infection
14	Cholecystectomy	44	Perinatal
15	Colonoscopy	45	Pneumonia
16	Colposcopy	46	Respiratory Infection
17	Congestive heart failure exacerbation	47	Shoulder sprain/strain
18	COPD	48	Skin and soft tissue infections
19	Coronary artery bypass graft	49	Spinal decompression
20	Cystourethroscopy	50	Spinal fusion
21	Diabetic ketoacidosis/ hyperosmolar hyperglycemic state	51	Syncope
22	Esophagogastroduodenoscopy (EGD)	52	Tonsillectomy
23	Gastrointestinal bleed	53	Tooth Extraction
24	Gastrointestinal Obstruction	54	Total joint replacement
25	Headache	55	Urinary Tract Infection
26	Hernia Repair	56	Valve Repair and Replacement
27	Hip/pelvic fracture procedure	57	Wrist sprain/strain
28	HIV		

 Recommended

Value of Episodes of Care

An Episode of care is a defined set of services provided to treat a clinical condition or procedure
-CMS



Episode of Care enhanced data allows stakeholders to focus on cost, services and quality.

Like-to-like comparison to evaluate performance across States, MCOs, Commercial Payers and Providers

Enhanced data allows stakeholders to analyze specific care to individual patients

Develop incentive programs to promote high quality, low cost care

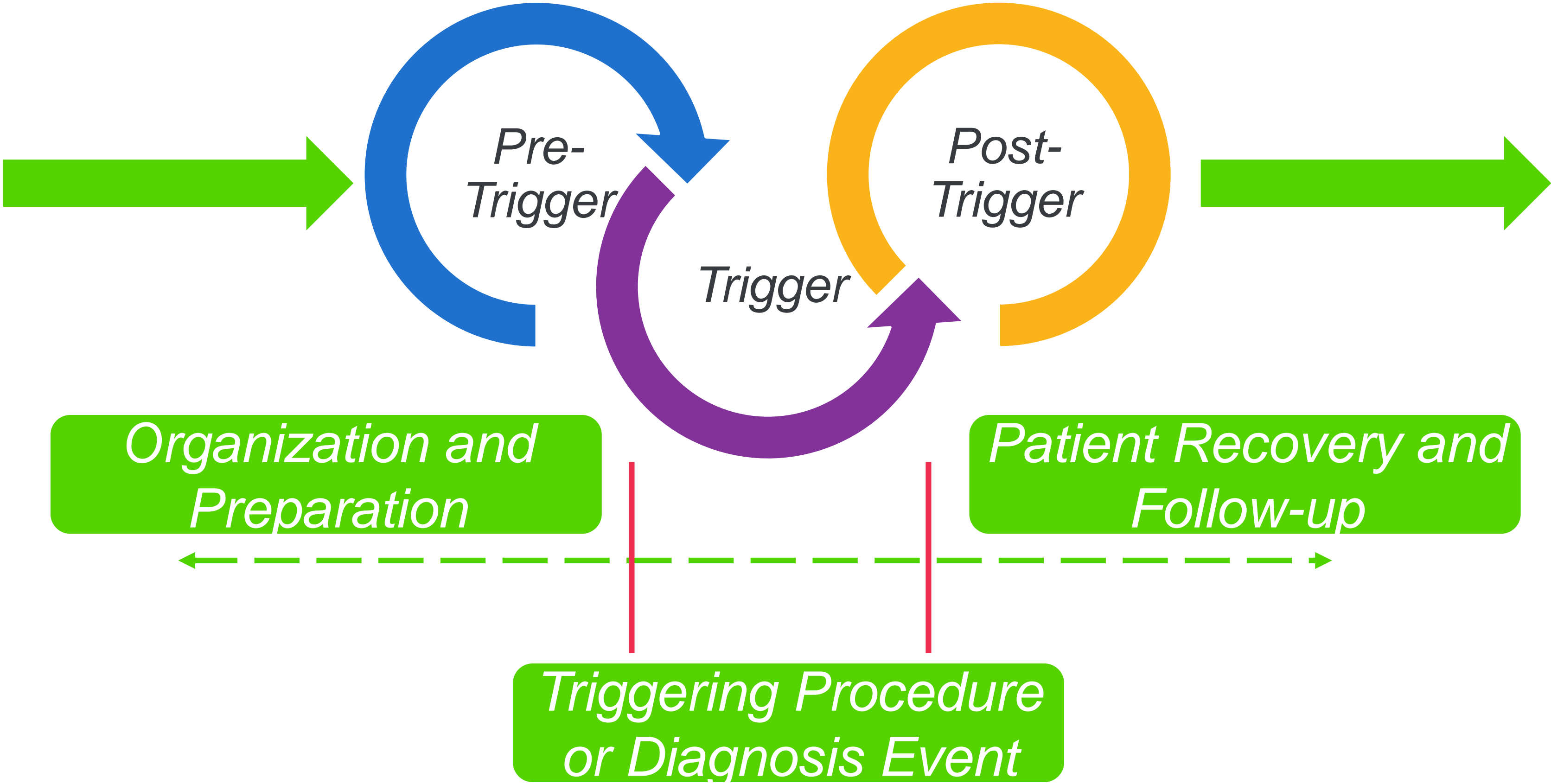
Identify variations in care and outliers to identify fraud and reduce waste

Identify areas of cost drivers that must be addressed to gain efficiencies and improve care

Find ways to improve their delivery of care to reduce post-trigger episodic costs, like readmissions

Understand all the moving and flexible parts around a specific physical or behavioral condition

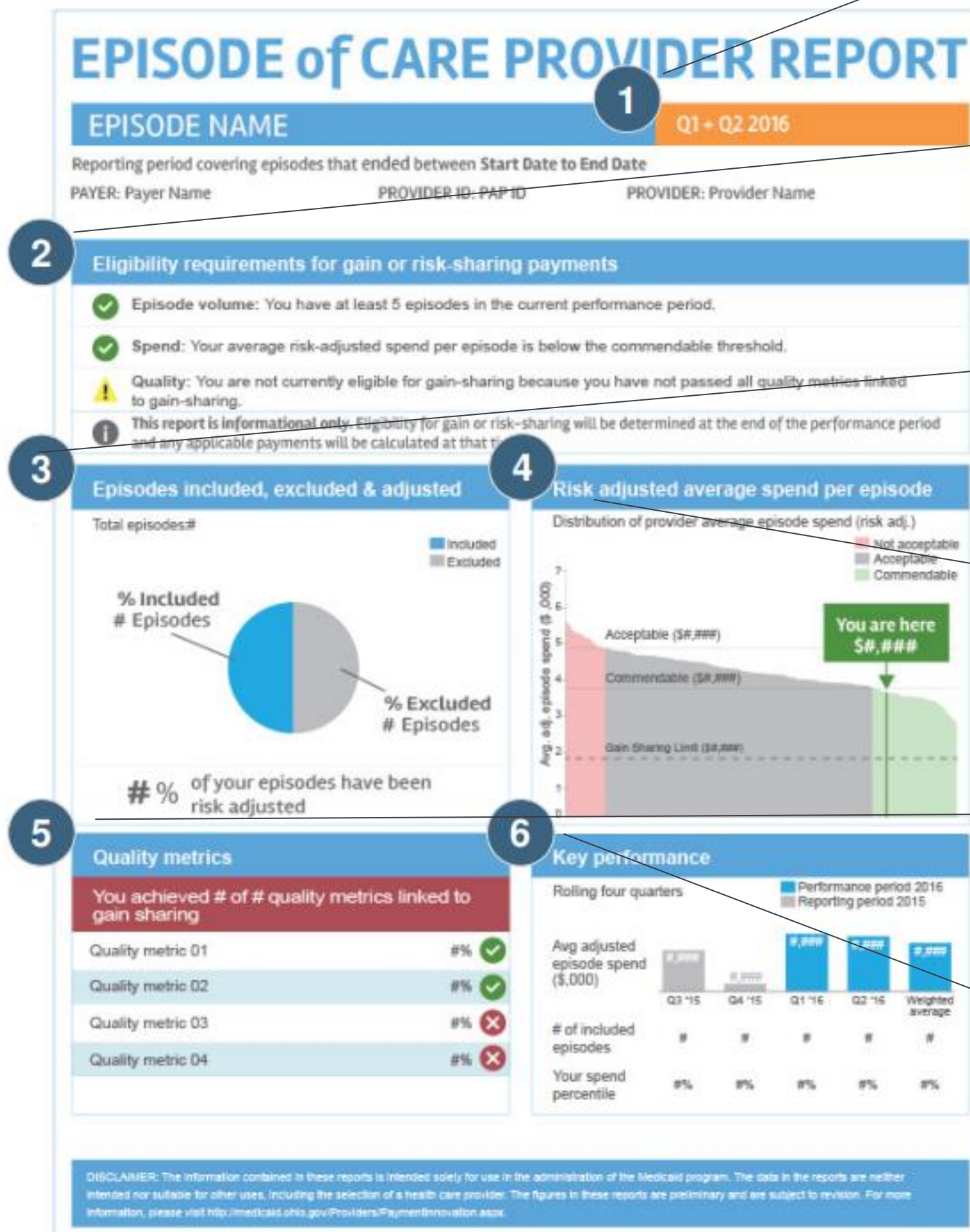
Episode of Care Journey



Uses for Episode of Care Enhanced Data

- Episode of Care Patient Journey
- Episodes of Care in Program Integrity
- Episodes of Care for predictive modeling
- Digital Integration of Episode of Care performance and patient data

Provider Performance Report



Performance Period

Requirements for incentives

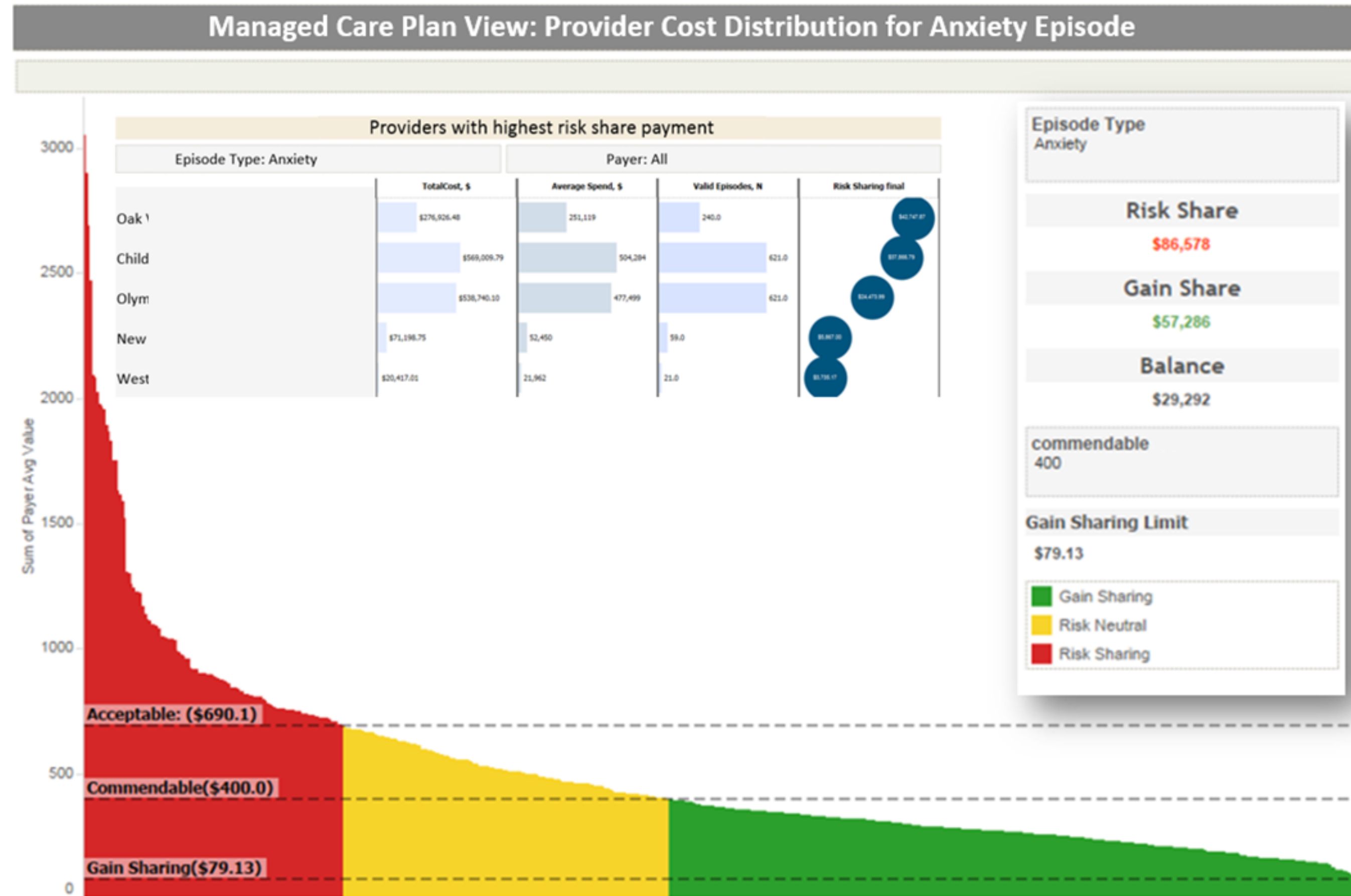
Valid and Invalid Episodes

Peer Spend Curve

Quality Performance

Rolling Quarter Performance

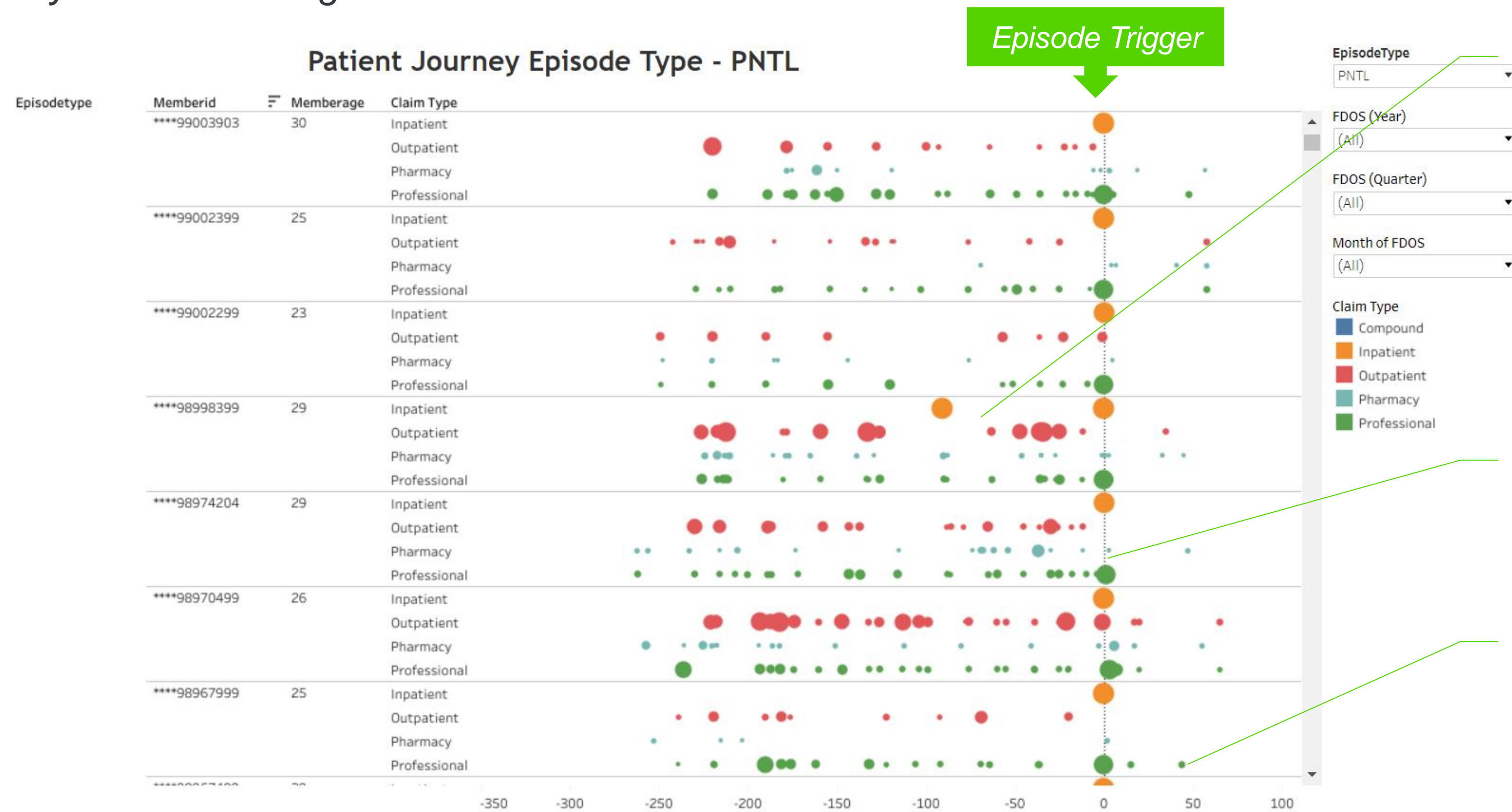
Episode of Care Thresholding: Payer View



Patient Journey

The Patient Journey Dashboard provides a visual representation of the claims and timing for each episode

- Compare care patterns between patients or providers
- Quickly identify outliers and high cost claims



Pregnancy-related care to improve and ensure the health of the mother and the baby, such as lab tests and screenings, ultrasound imaging, and support during labor and delivery.

Low to medium risk pregnancy and with birth to a live baby

Post-partum maternal care.

Episodes of Care in Program Integrity

Assumptions:

- *Majority of providers fall between gain and risk sharing levels and are unlikely to be exhibiting fraudulent behavior*
- *High outliers may be providing too many services*
- *Low outliers may not be providing services claims are filed for*

Profiling



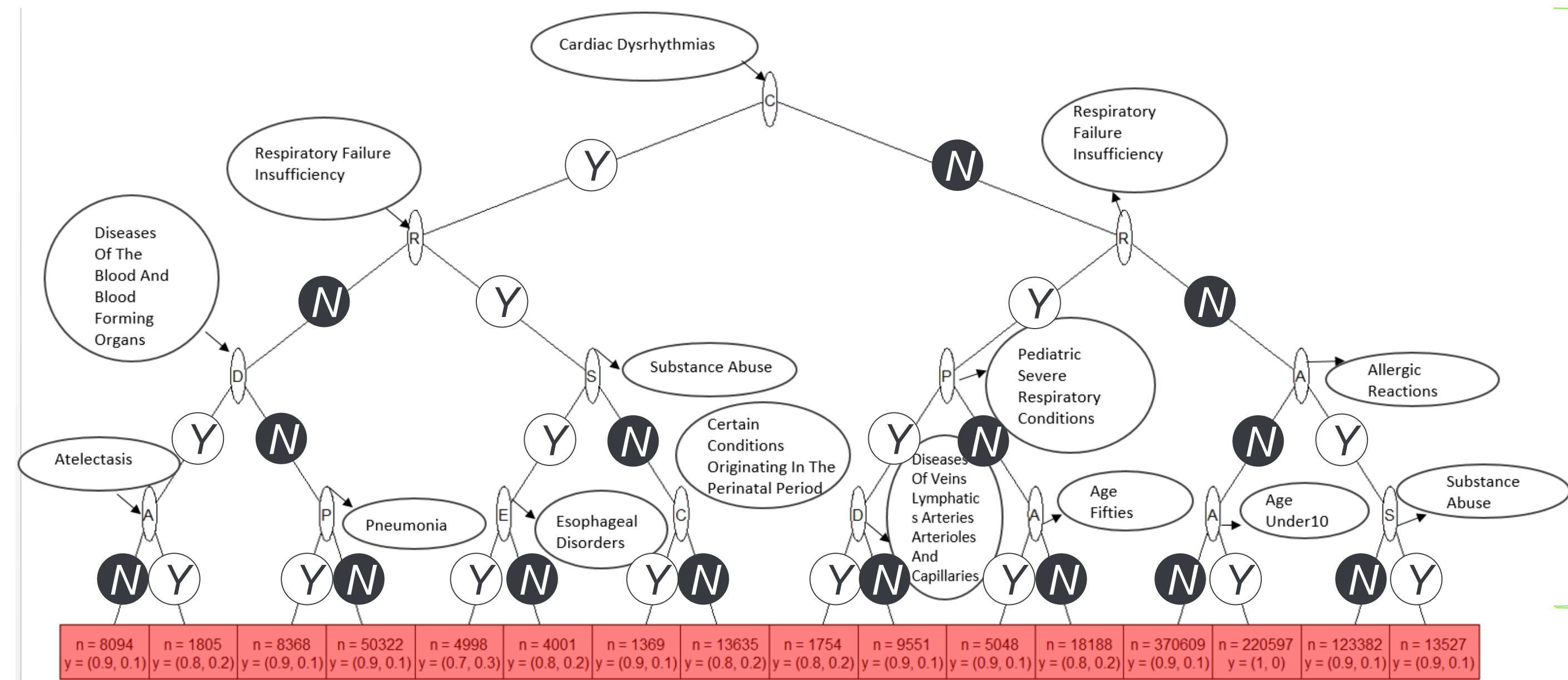
Identify Outliers
Compare Practice Patterns and
Care Profiles
Over Utilization of Services

Studies

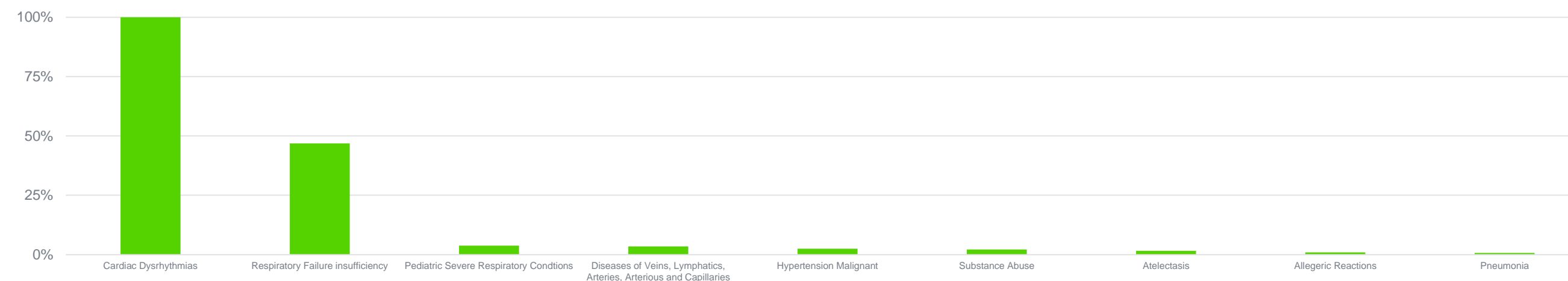


Over use of C-Sections
Tooth Extractions without prior
Imaging
Over prescription of Opioids

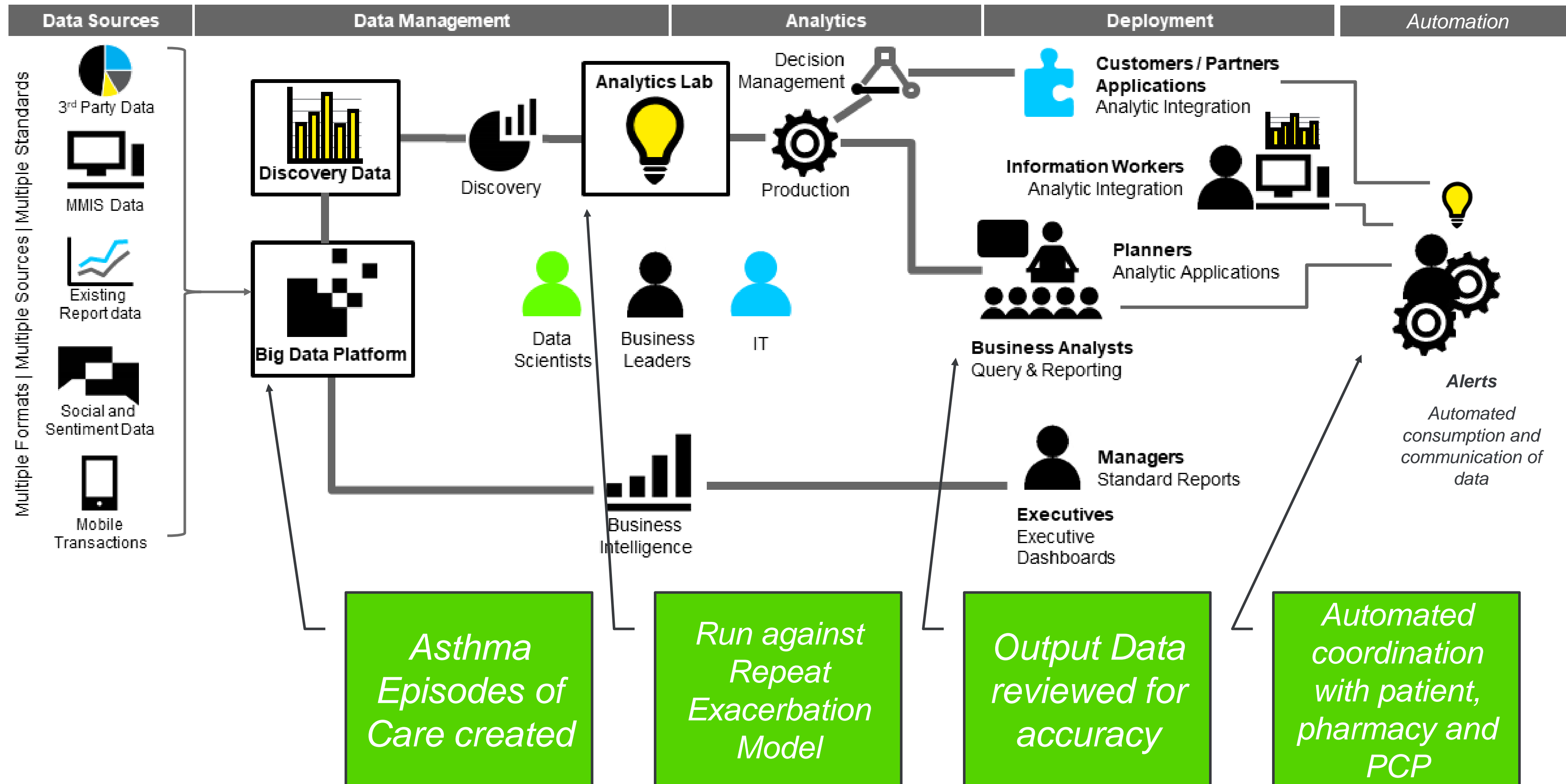
Predicting Repeat Asthma Exacerbations



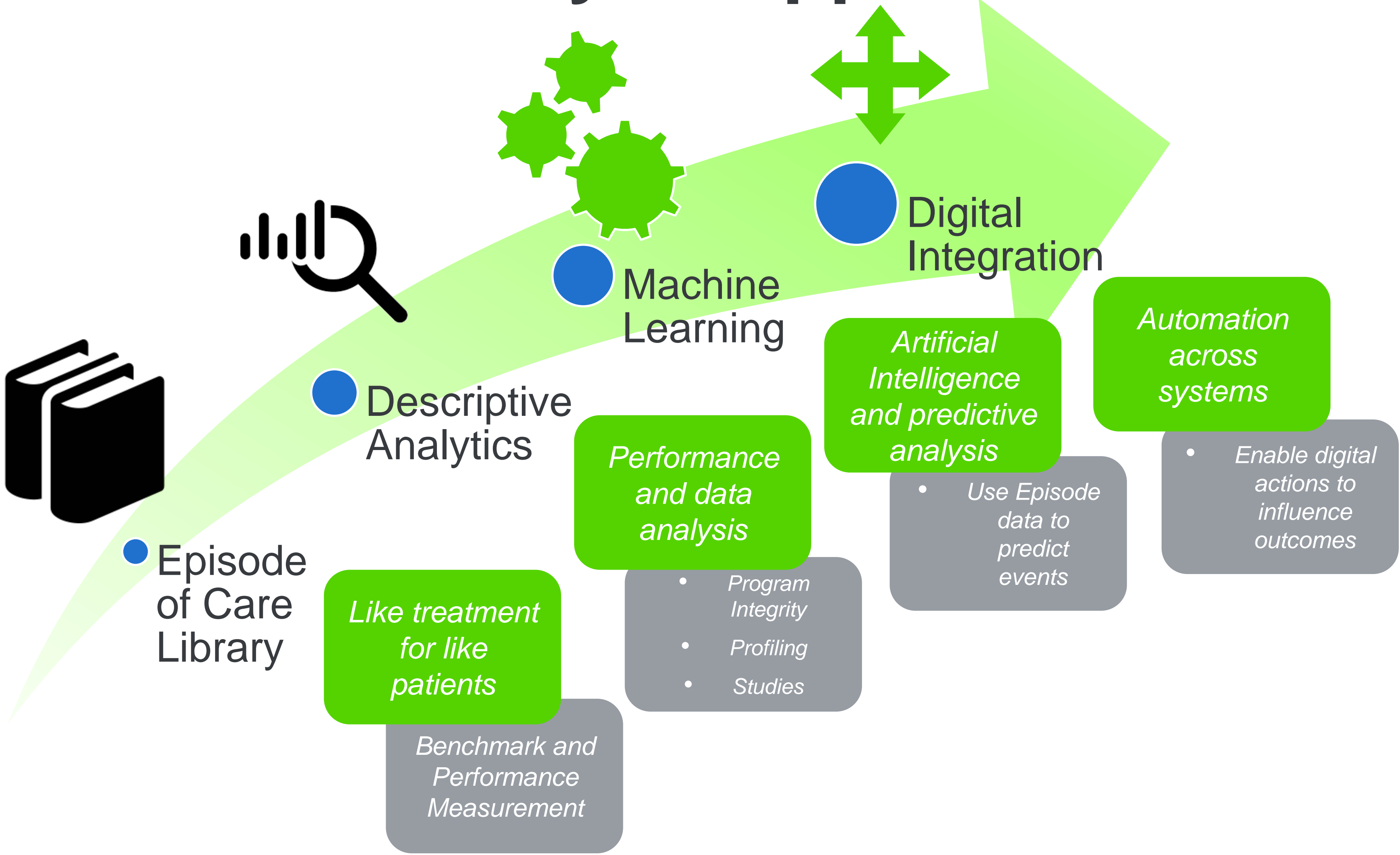
Identified
Key
Risk
Factors
Prediction



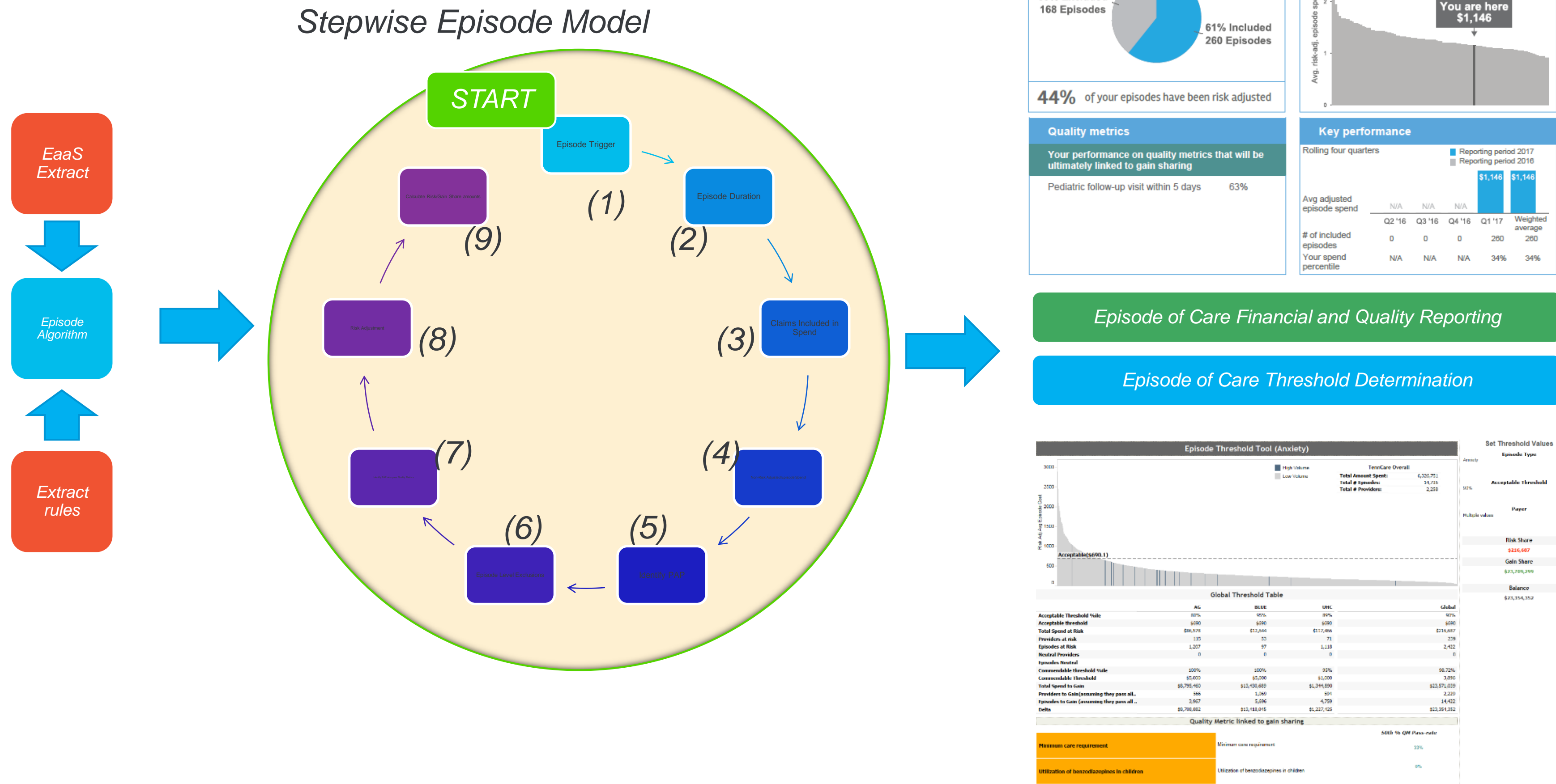
Digital Integration



Episode of Care Analytic Opportunities



Standardized Approach to Episodes of Care Development



Perinatal Episode: Screening for Hepatitis B Specific Antigens

The screenshot shows a rule configuration window for a perinatal episode. The 'Scope' tree on the left identifies the 'episode (Episode) [episode]' as the primary context. The 'Conditions' table defines the rule logic:

Condition	0	1	2
a claimDetail.claimWindow		{EPISODE, TRIGGER, PRE_TRIGGER, POST_TRIGGER}	
b claim.claimTypeInd		{OUTPATIENT, PROFESSIONAL}	
c Episodes.lookupCode('PNTL_TN','08 - Determine Quality Metrics Performance','Hepatitis B screening',claimDetail.detailProcedureCode)		T	
d			
e			
f			

The 'Actions' table below the conditions is configured as follows:

Action	0	1	2
A episode.qm06	'N'	'Y'	
B			
C			
D			
E			
F			
G			
H			

The 'Rule Statements' table at the bottom provides context for the rule:

Ref	ID	Post	Alias	Text	Rule Name
0		Info	Recipient	eoc01_R_08B06 - ENTERING	
1		Info	claim	eoc01_R_08B06 - Found professional/outpatient claim for Screening for hepatitis B specific antigens; procedure code={{claimDetail.detailProcedureCode}}, claim={{claim.internalControlNumber}}	

The episode has hepatitis B specific antigen screening assigned to the episode window, which is identified by an outpatient or professional claim with a specified procedure code in the input field Detail Procedure Code, as listed in the configuration file under "Hepatitis B screening"

AHDH Episode: Follow-up within 30 days of trigger

The screenshot shows a rule engine configuration for a quality metric. The 'Scope' tree on the left includes filters for 'episode (Episode) [ep]', 'includedClaim (Claim) [claim]', and 'claimDetail (ClaimDetail) [claimDetail]'. The 'Conditions' table lists several conditions: 'a claimDetail.isIncludedInEpisodeSpend', 'b ep.exclAny', 'c claimDetail.detailFromDateOfService >= ep.triggerWindowStartDate', and 'd claimDetail.detailFromDateOfService <= ep.triggerWindowStartDate.addDays(30)'. The 'Actions' table shows 'A ep.qm13'. The 'Rule Statements' table at the bottom shows two statements: '0 Info Recipient TN_R_08_2A913 - ENTERING' and '1 Info claim TN_R_08_2A913 - All the conditions for quality metric 13 are met'. Annotations with arrows point to the 'Conditions' table, the 'Filters' section, and the 'Rule Statements' table.

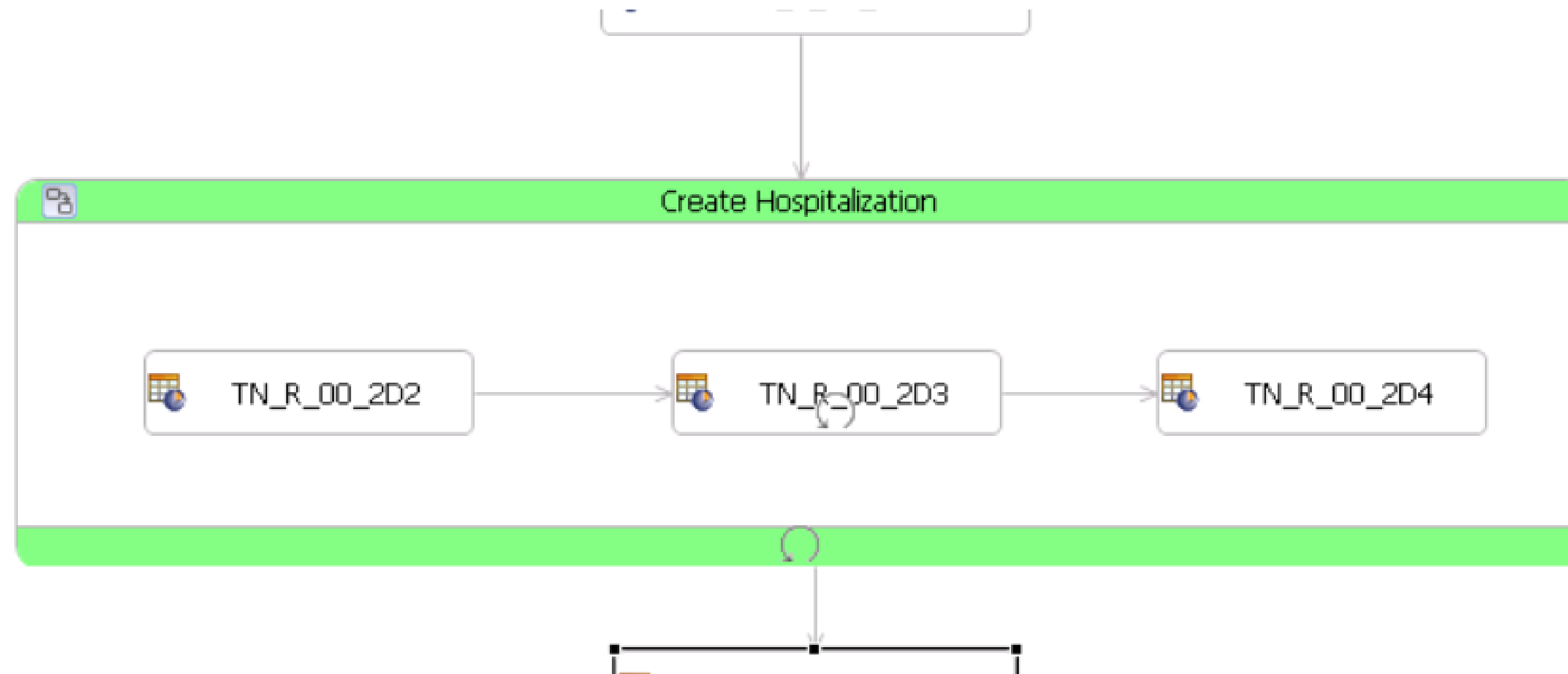
Conditions	0	1	2
a claimDetail.isIncludedInEpisodeSpend		T	
b ep.exclAny		F	
c claimDetail.detailFromDateOfService >= ep.triggerWindowStartDate		T	
d claimDetail.detailFromDateOfService <= ep.triggerWindowStartDate.addDays(30)		T	
e			
f			
g			
h			
i			
j			

Actions	0	1	2
Post Message(s)			
A ep.qm13	'N'	'Y'	
B			
C			
D			
E			
F			
G			
H			
I			
J			
K			

Ref	ID	Post	Alias	Text
				*** Dimension 08 - Determine Quality Metrics Performance: Quality Metric 13 – Follow-up within 30 days of trigger
0		Info	Recipient	TN_R_08_2A913 - ENTERING
1		Info	claim	TN_R_08_2A913 - All the conditions for quality metric 13 are met

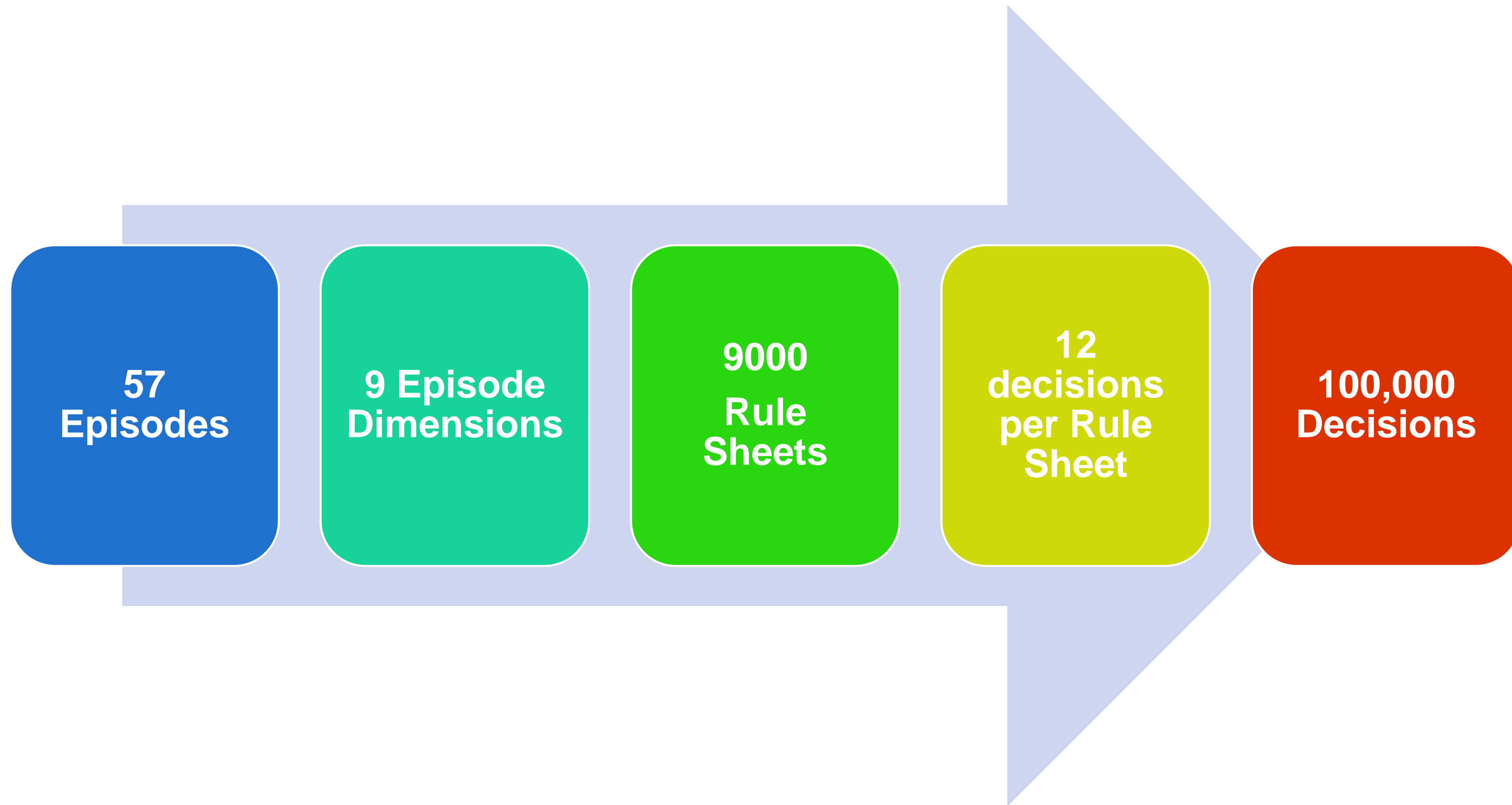
The episode is valid and it includes at least one E&M and medication management, or therapy visit that is included in episode spend within 30 days of the triggering visit.

Creating a Hospitalization in Corticon



We use nested iterative rulesheets within an iterative subflow to chronologically identify inpatient claims and group them into hospitalizations

Corticon Rules for Episodes of Care



Episodes of Care – High Level Metrics

> 800K ▲

Total PDF's, CSV's, Excel's created per year

3.4M ▲

of Members (Recipients requests) examined

19K ▲

of providers (PAP – Primary Accountable Providers) for Episode creation

9K ▲

Corticon Rules sheets created for **57** Episodes

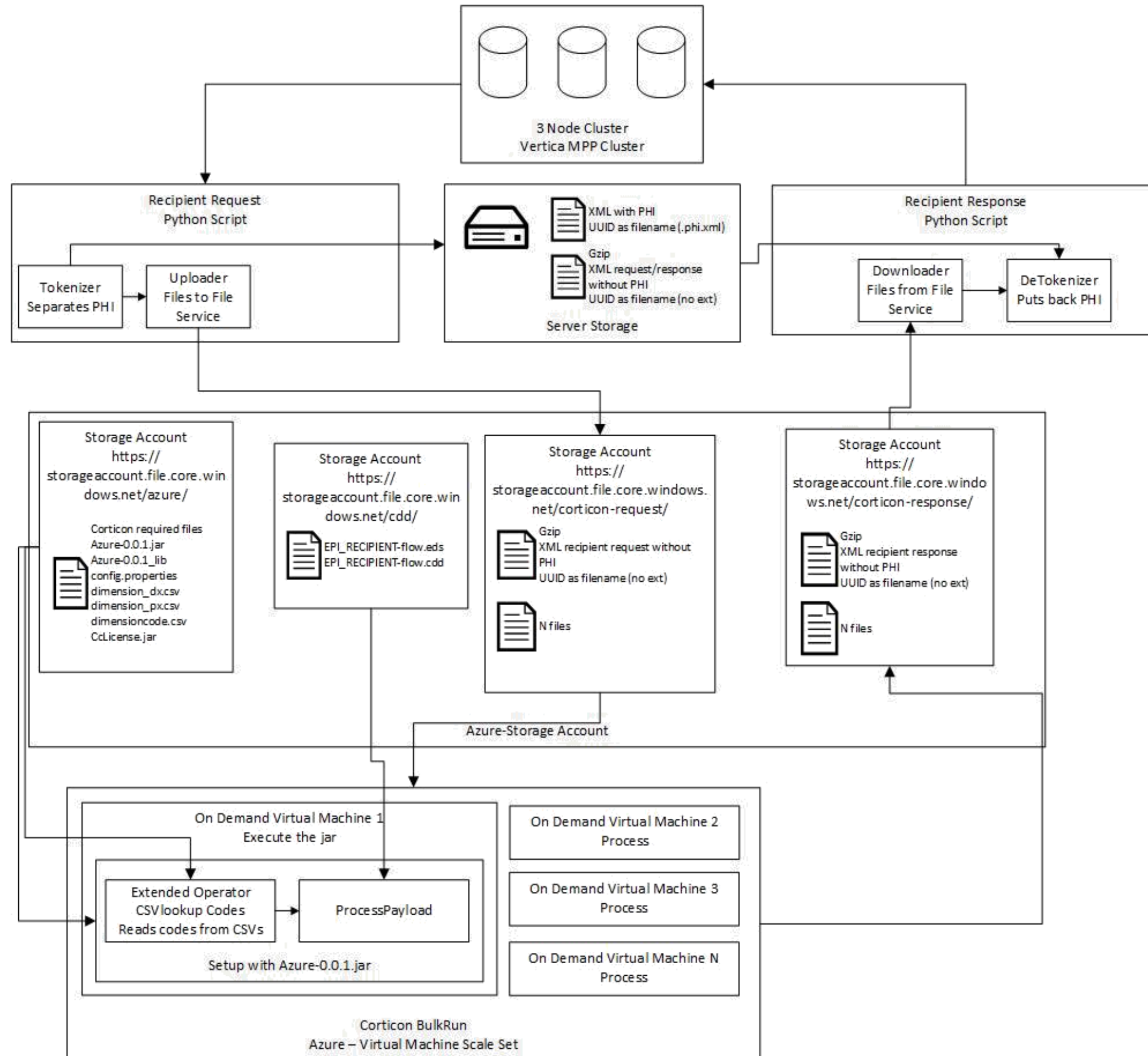
12TB ▲

Compressed data stored in Vertica Database

>5M ▲

Episodes generated

Burst Model



- Approach: CORE-HOURS from Corticon. Change in overall licensing model. Trade-In existing licenses, if necessary.
- Pay-as-you-use model with Azure machines providing complete de-identified data processing
- Licensing discussions needed with each vendor and Progress team

Thank You!

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You might also like to attend

Session Name

Speaker

Room

