Turning Lemons to Lemonade:
Advanced Claims Analytics With Big Data

A SCALABLE HEALTH WHITE PAPER

SCALABLE HEALTH

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EXECUTIVE SUMMARY

In Health Insurance, the claim is central to almost all parties involved in the patient care. It contains every detail of a patient's care – the diagnosis, status codes, procedure codes, condition codes and much more. 80% of all premiums are spent on claims' payment and associated handling charges. Therefore, efficient claims operations/management within the healthcare industry has a significant impact on profitability, solvency, and competitiveness. With so many claims to handle, payers don't have time to sift through all of that data to evaluate every claim and run the risk of missing valuable pieces of information in their decision making.

By leveraging a real-time claim analytics solution integrated with performance measurement scorecards and predictive analytics tools, a payer can derive insights from their data to make claim decisions faster. This level of depth coupled with the precision of insights on claim processing cycle also supports the payer organization to analyze millions of claims per day leading to faster revenue generation.

Millions of data can be mined based on several parameters such as the type of provider, procedure codes, and member eligibility. Claims need to be analyzed to understand the procedure codes, billed amount, and other important attributes to identify overpayment risks.

Payers must automate claims processing by integrating member benefit criteria and provide contract rates for rapid, accurate claim adjudication. This reduces costs, speeds payments and improves assessment accuracy. Data-driven claims units enhance cost control, efficiency, and business objectives. Future payers need performance-focused claims, like ACOs using analytics for bundled payments, to enable timely, cost-effective responses to market demands through automated decision-making.

This paper seeks to make the case for adopting analytic capabilities as part of a "next-generation advanced analytics" architecture for better business benefits and faster claim cycles.

CHALLENGES FACED BY HEALTHCARE INSURERS

Health insurance companies, Medicare and Medicaid are shifting or are wanting to shift from fee-for-service compensation to value-based data-driven incentives for focusing on high quality, cost-effective patient care by using electronic health records. **According to a recent State Street report, just 39% of payers say that they are effective at collecting and aggregating data, and turning it into actionable insights. The other 61% still need to make the change.**

This shift is not being effectively adopted as there are still challenges being faced by the other 61%.

1. The Sheer expanse of unstructured data. The healthcare industry is full of clinical, claim, patient, and hospital system data. Data is scattered and stored in multiple disparate formats, which are often overlooked or underutilized. As a result, the challenge is how to find the right data, or, how to position or the map the data to actionable KPIs. The process of analyzing this data collectively is hindered as data scientists have not embraced a means to aggregate the disparate data. The demand for the semantic data interoperability in claim management forms a barrier for payers' ability to derive clinical meaning from data.

2. Current technology environment. Insurance claims systems often consist of multiple, decades-old platforms, applications, and databases - each supporting a different part of the operation. New modern systems have been added to legacy platforms over the years to add functionality, further complicating the claims system. Different systems target different KPIs, causing huge process loopholes, and red flags. The vast divide in the technology landscape is not allowing systematic handshakes, hence other issues, such as security, are adding to the delays and confusion.

3. Confused supporting ideologies. Claims management is a complex process for the entire healthcare organization, especially as more payers are transitioning to data-driven value-based care models. Submitting a claim involves more than just pushing a button. Claim processing requires extensive data to be processed before any claim is approved. Manual processing of claims may involve significant delays (days/months) and sometimes may even involve human error. The entire process, end-to-end, needs a process mining and a coherent adoption of an archiving technology. Everyone and everything part of the entire claim cycle should embrace clean data practices, from partners to customers.

4. Progression of Policy. Health insurance payers are facing significant challenges due to evolving technology and regulatory changes. Amendments to the Affordable Care Act, specifically the mandatory acceptance of all applicants, constrain their ability to assess risk, requiring increased focus on deductibles, co-pays, disease management, and provider network optimization to maintain fiscal health.

5. Futuristic Myopia. Though the claim process might be somewhat automated, individual adjusters still make decisions at various checkpoints along the way. From initially assessing claims to evaluating a fraud, such business decision makers display futuristic myopia resulting from their unwillingness to evaluate and understand the potential of advanced claim analytics. Individuals have natural cognitive biases, which in turn affect the way they perceive automation. Those perceptions are more precautionary than negative. It is like the influence of probabilities and risk biases.

CHALLENGES IN MEASURING HEALTH OUTCOMES

Limited availability of outcome measures across different diseases and condition

Narrow application of particular measures for assessing health outcomes (e.g., mortality, admission, readmission rates)

Lack of integrated IT systems to simplify the process of capturing and measuring data on health outcome

THE NEED FOR ADVANCED ANALYTICS IN CLAIM MANAGEMENT

Advanced analytics enables the logical connection between data and effective action. With the growing adoption of automation, changes in policies and increases in populations claim data, there is an enhanced need for advanced claim analytics in claim management.

Analytics and data making the case

Payers have always used analytics to determine risk factors when calculating insurance premiums, assessing the probability and expected costs of specific exposures, illness, and death. However, today there is such an influx of data from various sources and advanced technology that leveraging this will enable greater insights.

Proper adoption of data technologies and having all the data in a streamlined process, connected effectively with the front and the backend, creates efficiencies. The result is a more accurate claims process. These increased efficiencies allow for a thorough analysis of medical and pharmacy claims data. Payers can assess the current situation creating measurable opportunities for reducing costs and implementing evidence-based best practices. Benefits of this approach include quicker claims processing, identifying claim trends, overpayment analysis, detection of fraud, and improving the healthcare plan.

Faster Claim Processing

Advanced analytics are playing an increasingly important role in improving the processing rates of claims in the healthcare sector.

Working alongside adjusters, analytics can flag claims for closer inspection, priority handling and more. To lower costs and ensure fairness, payers often implement fast-track processes that settle claims instantly. However, settling a claim on the fly can be costly if you overpay.

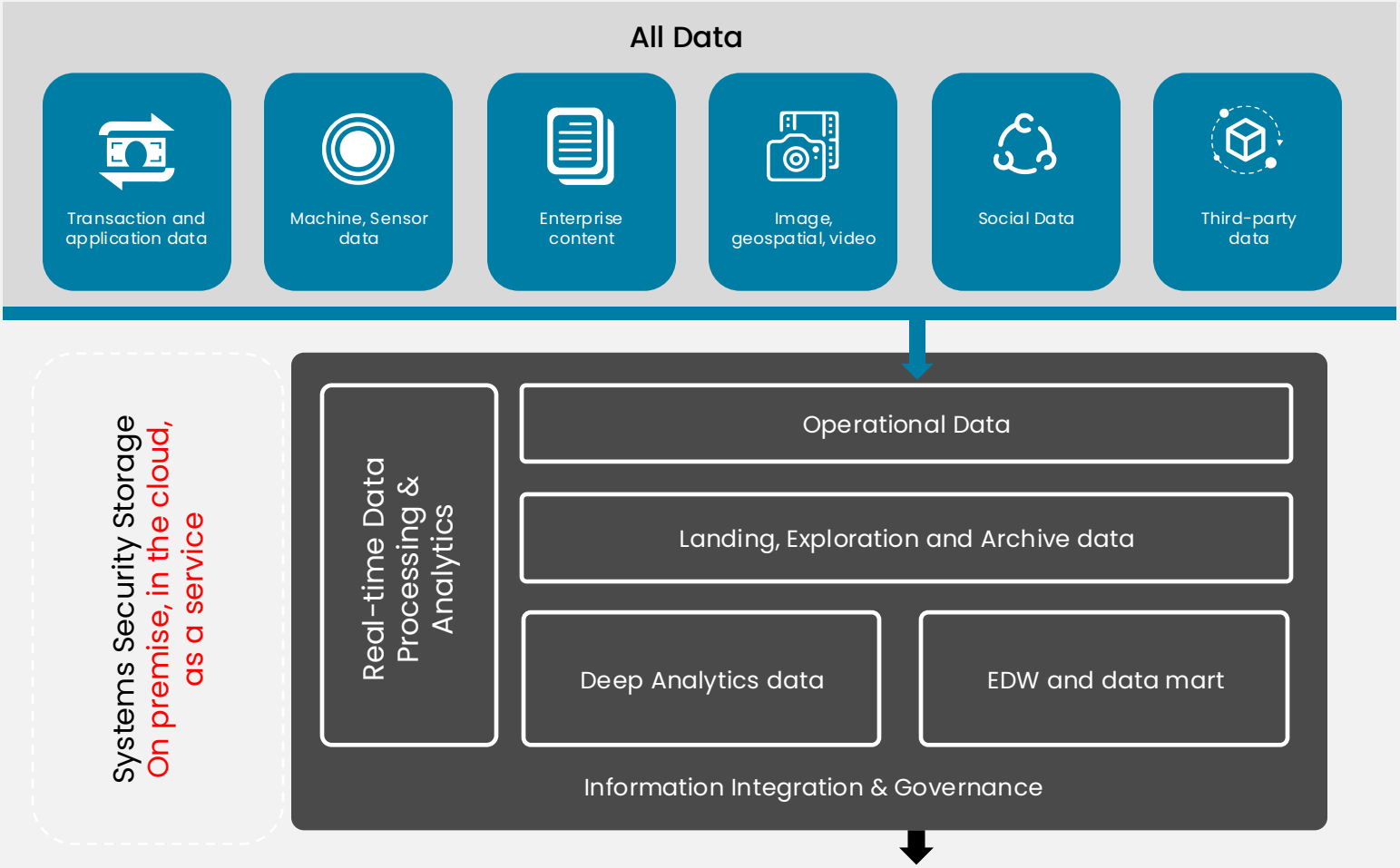
By analyzing claims and claim histories, payers can optimize the limits for instant payouts. Analytics can also shorten claim cycle times for higher member satisfaction and reduced health care costs. More structured automation and reliability on claim data is done in conjunction with the integration of the payer's proven KPIs. This makes claim processing accurate and hence faster.

Identify Claim Trends

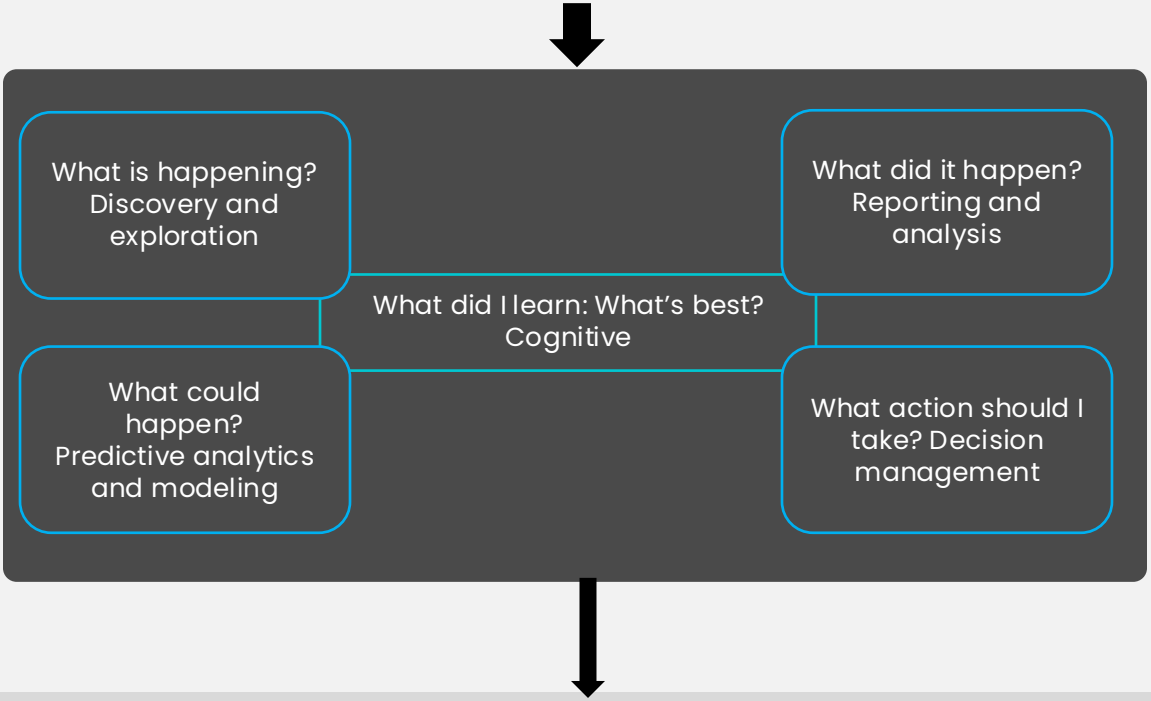
There are many possible explanations when a health plan's total paid claim increases. For example, the cost of goods and services may have risen, or due to an aging population utilization may have increased. Analytics forecast modeling of claim projections allows payers to understand what the driving trend is. This will enable logical predictions that help streamline future needs.

Once the trend flags are identified, the payer will be able to take a closer look at the data to further fine-tune the assumptions and garner further insights. These insights offer tangible information that relates to identifying gaps in care, engaging participants in their own care, and ultimately decreasing abuse & waste of any sort.

DATA IS DRIVING DEMAND FOR BOTH GREATER BUSINESS INSIGHT AND THE FOUNDATION TO DELIVER IT



Systems Security Storage
On premise, in the cloud, as a service



Customer Experience

New Business Models

Financial Performance

Risk, Fraud

Operations

Improve IT Economics

New/Enhanced Applications

Overpayment Analysis

Overpayment on healthcare claims costs payers millions of dollars making post-payment claim and overpayment and recovery solutions critical. The use of an advanced analytics solution allows payers to identify, eliminate, and recover overpayments. The technology allows a proper mapping and red flags without delaying the claims process. This process creates actionable insights enabling payers to identify and qualify KPIs associated with specific overpayment errors. By determining the root cause, payers can focus on situations that can be changed or eliminated.

Predictive Fraud Modeling

Claims scoring is a vital tool for payers combating fraud, with nearly half utilizing it to flag high-risk claims. Larger payers increasingly leverage advanced anti-fraud technology, while smaller carriers often rely on adjuster expertise. Combining claim scoring with analytics, automated alerts, and streamlined workflows enables efficient routing of suspicious claims for in-depth investigation. This process allows investigation units to identify fraud patterns, ultimately saving payers substantial costs by preventing fraudulent payouts. Advanced claim analytics are essential for maximizing fraud detection and minimizing financial losses.

Improving Decisions in Claim Management Process

From the first receipt of a claim through payment processing, there are many decision checkpoints in a claim management process. The process benefits when actionable advanced analytics creates efficiencies and offers claim trend analysis. Analytics can improve anywhere from one or two key decision points or the entire process.

Steering Data into Insights and Then Actions

Advanced claim analytics analyzes a lot of data, both structured and unstructured, and transforms the data into useful information. Rather than having disparate data across the organization, each point of data is made useful and converted into actionable insights. From these insights, IT professionals can take action to avoid data loss and prevent medical data aggregation.

Early Intervention

High-risk claims that require attention can benefit from early intervention while allowing lower-risk claims to be processed more quickly through automation and auto-adjudication. Analyzing existing claims data allows payers to identify potential red flags that create automated alerts. Being able to distinguish the risk up-front increases the overall efficiency of the claims processing.

Identifying fraudulent and high-risk claims allows payers to keep better track of claims being processed in their system. Advanced analytics allows insights before action, bringing the effectiveness of early intervention to the claims process. Dealing with these issues allows payers to reduce costs and improve claims processing efficiency.

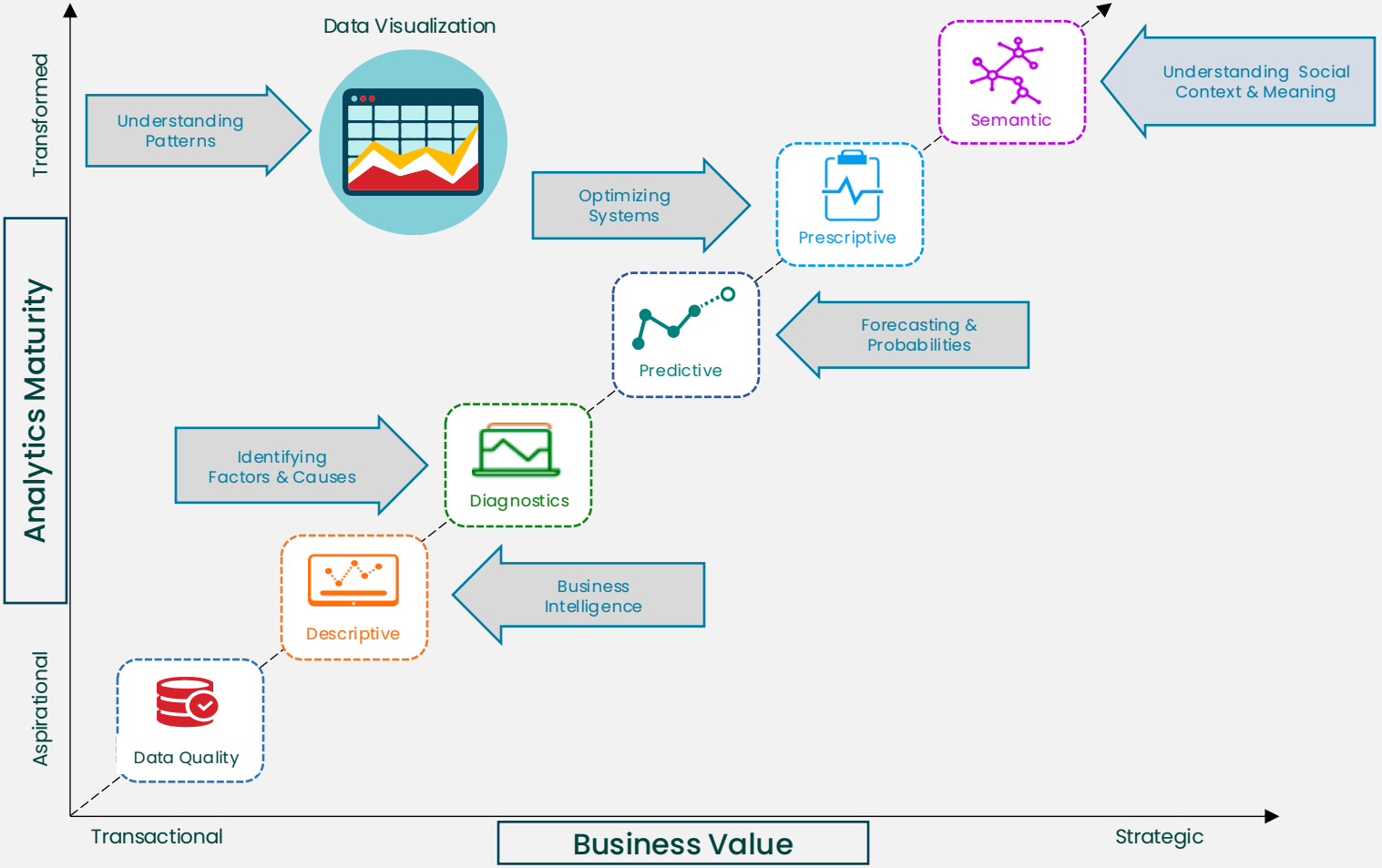
Call Center Analytics

Using big data and advanced analytics enables healthcare insurers to deliver better claim management while meeting transparency for regulatory and legal compliance. It helps to keep members informed of the progress of a claim so they don't have to inquire and remind them of an upcoming appointment. Making routine reminder calls to members helps address FAQs and reduce the frustration of new members. The process helps to actively manage clinical work distribution to speed up claims processing and obtain a unified view of the claim management process.

Improved Customer Experience

Advanced analytics enables the claims examiner to quickly assign the claims respectively to adjudicators or investigators based on the early detection of how suited they are in handling that particular claim. Examiners classify potential claims with models built using retrospective data to determine the complexity of each. This allows the assignment of claims to the relevant teams suited to handle the claims process. This allows the assignment of the correct adjuster required to handle the claims from the beginning, resulting in more timely settlements. This makes the customer experience smoother and allows payer firms to handle more and more cases efficiently.

ADVANCED CLAIM ANALYTICS



HOW SHOULD PAYERS IMPLEMENT THESE DATA TOOLS?

Healthcare payers should consider the following steps to implement data tools.

1. Determine who can perform data analytics: Only the large companies have the capability to handle data analytics on their own. Most need to decide if the analytics offered by the existing healthcare vendors are sufficient or whether they should outsource their data analytics.

2. Technology Landscape Mapping: First, all backend technology handling medical data must be assessed to determine its relevance.

3. Process Mining: We must identify areas where system integration is lacking or where medical record data systems are poorly connected.

4. Data Mining and Defining KPIs: Effective structuring of medical data through data mining operations and mapping them to the required KPIs of a claims process is primary.

5. Identify Clinical Risk KPIs: To identify and map the most prevalent clinical risk KPIs and associated costs in the plan population, one should implement data analytics and predictive modeling. Payers should evaluate the programs to address such risks.

6. Establish a Health Management Strategy: Healthcare payer should prepare a suitable health management strategy. This strategy must include a budget, specified goals, and related KPIs that should have a budget expected to increase over time to meet growing data demands.

7. Develop a Formal Participant Communications Strategy: Using data analytics will reveal cost outliers to plan payers, make effective communications to have an immediate, direct, and positive impact.

8. Detection of Claims for Quick Processing: To implement tools such as advanced analytics, and predictive modeling, payers should have a plan for proactive identification of fraudulent claims, and enhancement of processing efficiency at a lower cost.

9. Integration Into the Existing System: Predictive analytics streamline claims by identifying litigious cases, fast-tracking simple ones, and optimizing recovery, either through offline reporting or system integration.

DRIVERS FOR ADVANCED CLAIM ANALYTICS

Healthcare analytics is widely seen as a major advancement due to the industry's shift in payment and care delivery models. By leveraging growing data from EHRs, claims, devices, and demographics, analytics uncovers hidden patterns, providing actionable insights. This enables systems to predict, infer, and innovate, ultimately improving costs, quality, population health management, consumer engagement, and performance understanding.

Healthcare has experienced rapid growth in the demand for data analytics as more organizations use healthcare analytics tools to gain insights into their operations. Using healthcare analytics tools has become as simple as uploading a few data sets to the provider and letting them discover and share any valuable findings they uncover. According to the healthcare insurance industry estimates, analytics technology solutions return $16 for every dollar invested. Having an intelligent, end-to-end analytics solution allows payers to shift from a backward-looking model to one that is preventive, yielding tremendous time and cost savings as a result.

When the analytics platform is embedded in the enterprise infrastructure and workflow, payers gain the upper hand with adaptive models that can learn and improve, unsupervised, the more they are used. Real-time and predictive analytics provide the insights needed to approve or reject a claim at the pre-payment stage. The analytics platform provides the scalability to tackle massive volumes of structured and unstructured data and analyze billions of records in milliseconds.

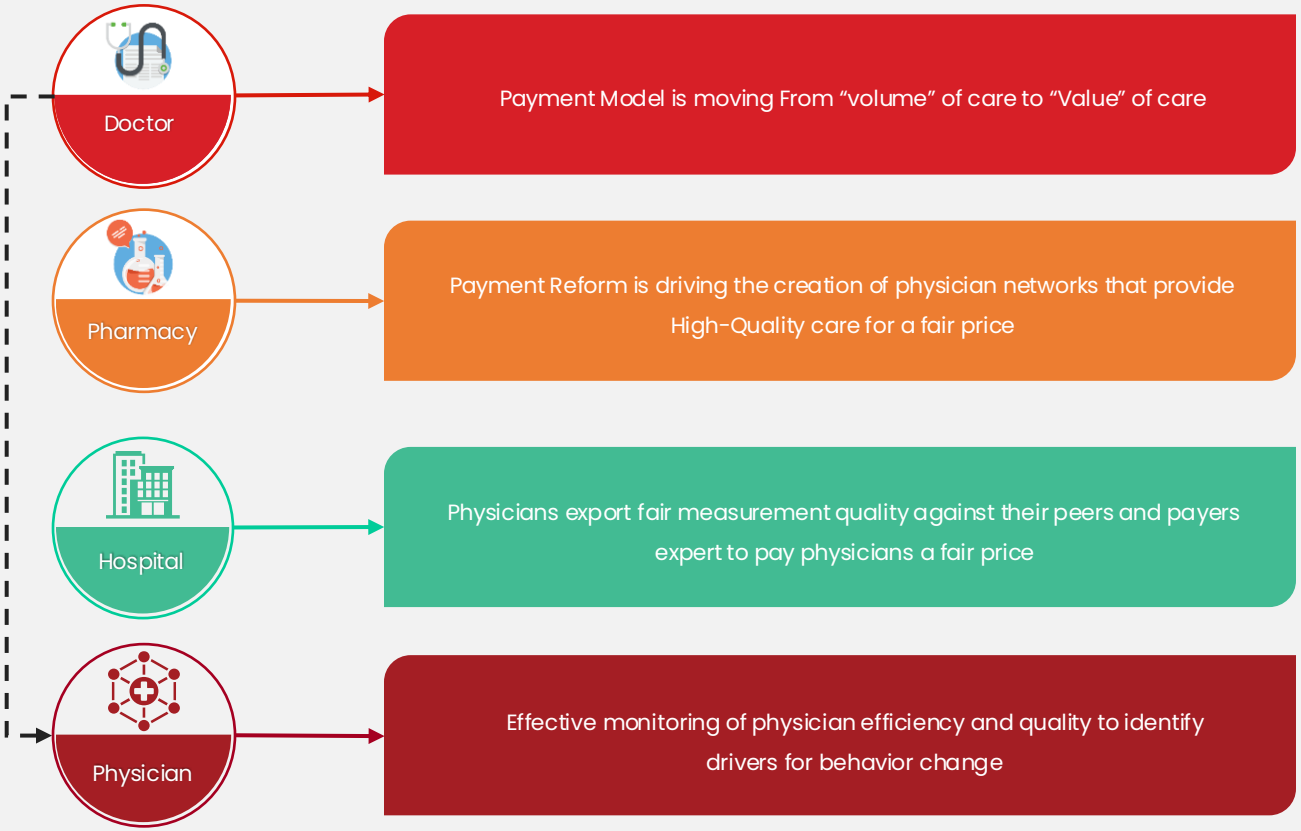
• Connect, integrate, and analyze big data including medical and pharmacy claims.

• Extend domain knowledge to detect similar patterns unsupervised – allowing the data to “speak for itself”

• Provide a single platform for rules validation, graphic and link analysis, text analytics, medical coding inference, and outlier detection, delivering a list of fraudulent activities.

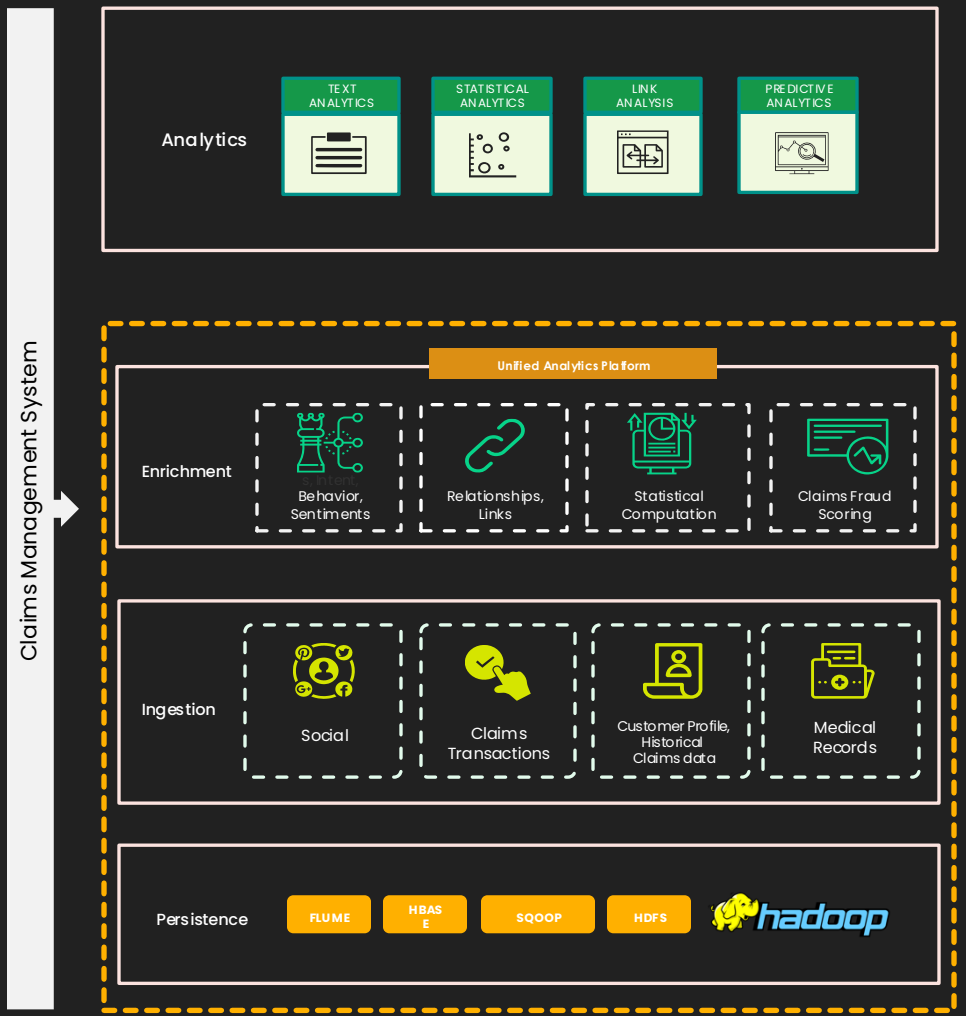
• Embed analytics with the investigator’s workflow and learn new patterns through machine learning, a user feedback loop from observing the investigator’s interaction with the data.

MARKET DRIVERS ARE INCREASING THE DEMAND FOR MEASURING PHYSICIAN COST & QUALITY PERFORMANCE



MODERN ARCHITECTURE OF ADVANCED CLAIM ANALYTICS

The modern architecture provides healthcare payers with complete control over the healthcare claims adjudication process from set-up to processing. It helps to manage electronic claims submission in real-time while accommodating manual entry and imaging solutions. Using a modern claim management architecture can help payers to replace manual or batch review processes with rules and real time workflow, and reduce or eliminate duplication errors while avoiding costly clinical review and prior authorization processes.



LEVERAGING ANALYTICS INTO MEDICAL INSURANCE FOR COMPETITIVE ADVANTAGE

An analytical and practical approach helps healthcare payers transform claim operations through a practical use of advanced analytics. Analytics offers insights focused on reducing the administrative cost of claims, minimizing claims leakage, and improving provider and member satisfaction. Major components of the claims handling process include developing strategies to cut costs and reduce fraud while keeping members happy.

Using a data integration and management platform, payer companies can collect and measure data related to patient, safety, care quality, utilization, cost, and healthcare outcomes. This helps payer companies make claims processing more efficient. It introduces advanced analytics within the process to drive decision-making by providing claims managers with the full spectrum of information required to monitor and manage claims activity effectively. The following are the benefits of using analytics in payer organizations for competitive advantage:

- Healthcare claims management extends beyond just settlement. A claims management system enhances efficiency and reduces expenses. Automation simplifies the process, leading to further time and cost savings
- Better Member Satisfaction
- Increased Efficiency in Processing of Claim
- Immediate Responses to Providers on Potential Co-payments Due by Members
- Improved Patient Safety, as Duplicates and Potential Drug Interactions are Eliminated
- Members are informed at the point of service and can make decisions on the utilization of their healthcare benefits

COST PRESSURE

New services (personalized Medicine, Hep-C. etc.), Aging Population, New payment models

VALUE BASED CARE

Shifting risk, Value not volume, Purchase by IDNs, Change in POS

SIZE & COMPLEXITY OF DATA

New Data Type, Integration of Claims & Clinical data, Lack of Standardization

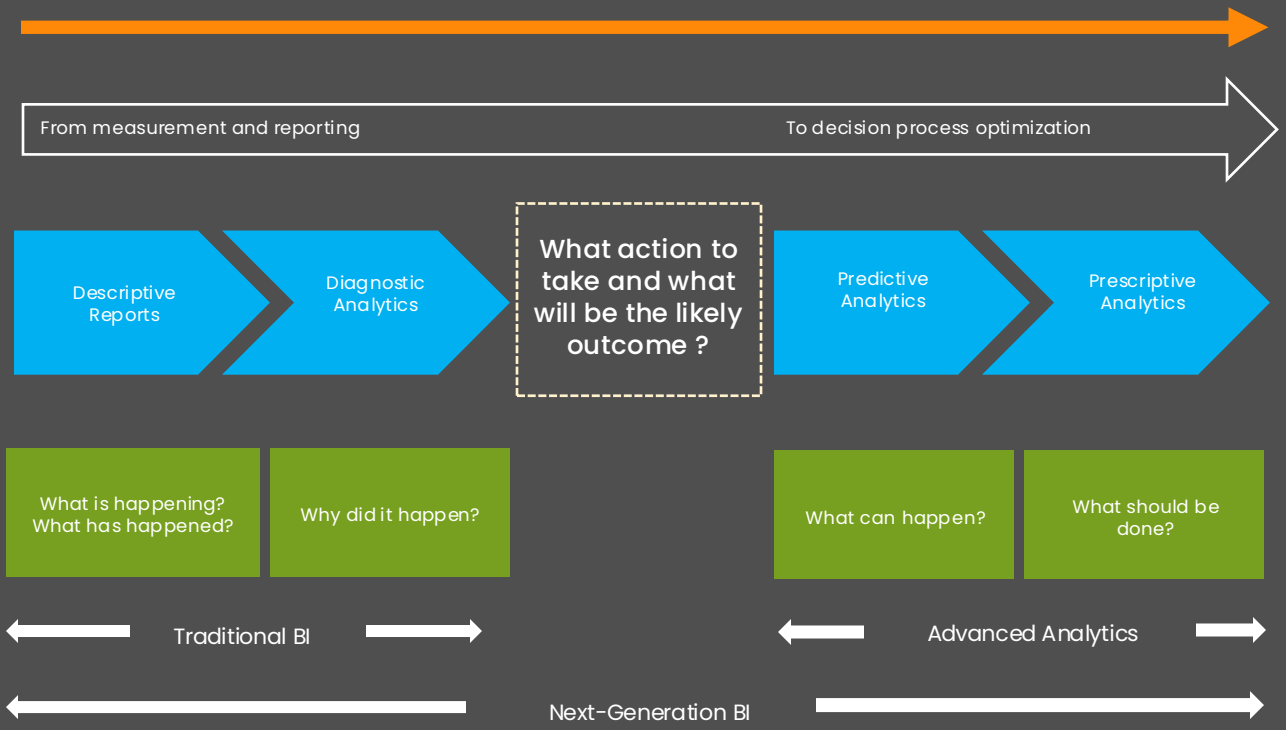
STRATEGIES

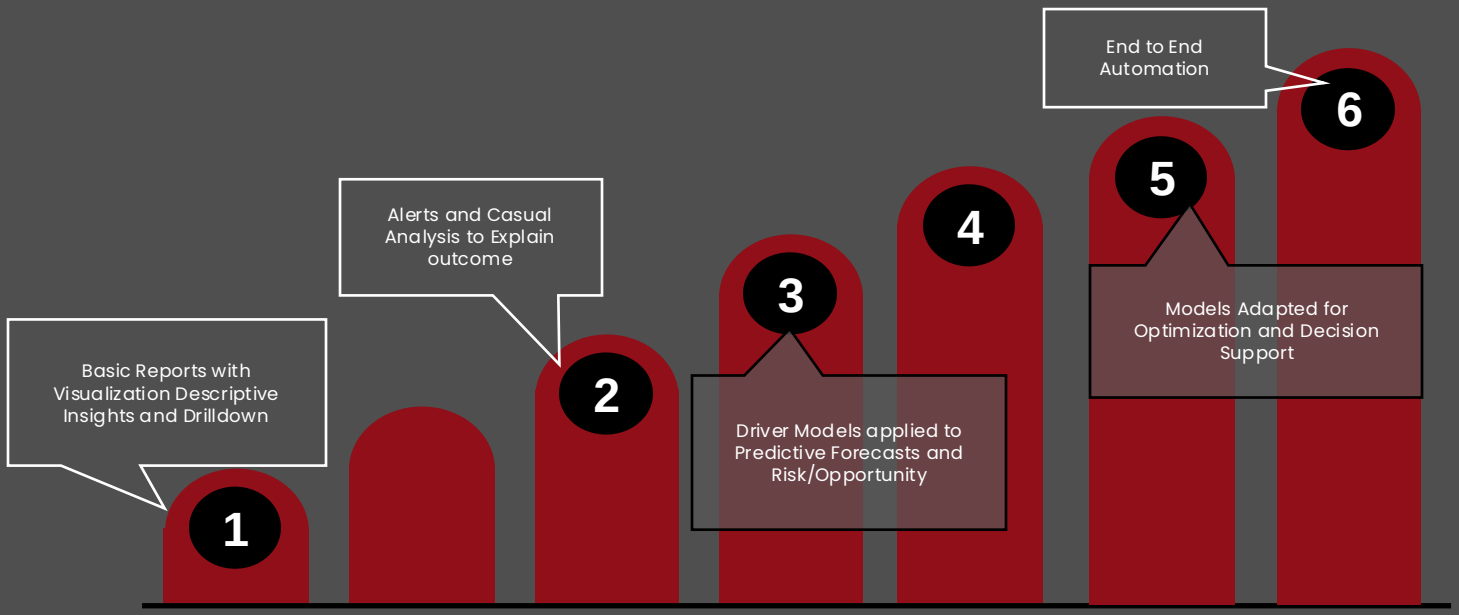
New/Different Gatekeepers Episode & Risk Based Contracting

Push To Lower Level Of Care Data Sharing Provider Consolidation Vertical Integration

Flexible Delivery & Engagement Models Insight & Technology As A Key Enable

Business agility, value, and competitive advantage





CONCLUSION

As payers face the challenges of increased competition and member satisfaction, the ability to execute highly effective claims management has become critical for success. Using a big data and advanced analytics platform is an exceptionally valuable approach for helping payers improve claims processing to accelerate operational efficiency, control costs, and enhance member retention and satisfaction. Combining predctive analytics with business intelligence and claims management systems helps payers fully reap the benefits of a better claim processing cycle and significantly improves their bottom line.

About Scalable Health

Scalable Health is healthcare division of Scalable Systems focused on providing innovative products and solutions in healthcare and life sciences market.

www.scalablehealth.com

About Scalable Systems

Scalable Systems is a Data, Analytics & Digital Transformation Company focused on vertical specific innovative solutions. By providing next generation technology solutions and services, we help organizations to identify risks & opportunities, achieve sales and operational excellence to gain an innovative edge.

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