

HIGH LINE
HEALTH

Accountable Care Enterprise Analytics Platform Overview

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Accountable care is a transitional model on the path to true population health management. In that sense, it is a way station that we must successfully navigate to reach our ultimate goal. High Line Health was founded on this challenge.

Our accountable care analytics are designed to deliver the enterprise population-based analysis you need to effectively manage your value-based transition, optimize your performance under accountable care contracts and prepare your organization for true population health management.

Our experts at High Line Health understand this challenge and have architected our cloud-based solution with modules, data and analytic models, and technology that are calibrated to the accountable care transition.

The purpose of this white paper is to articulate our solution vision, demonstrate our in-depth knowledge of the challenges accountable care organizations face when standing up enterprise analytics and to describe how our solution meets those challenges.

The HLH platform consists of the following components:

Flexible, Scalable and Aligned Analytic Model;

Focused, Robust Analytic Modules That Identify Actionable Opportunities; and

Superior Solution Technology Architecture:

- Fast and Agile
- Visual Analytics for Insights and Collaboration
- Power OLAP for In-depth Analysis

In the next page we will briefly explore each of these components.

As depicted in Picture 1, below, the HLH analytic model is composed of the following:

Entities

The organizational entities that comprise the enterprise. Hospitals, physician organizations, ACO(s), Clinics, etc. Entities may have sub-entities e.g., physician organizations may have multiple geographic locations or be comprised of multiple practices, an ACO will also have multiple sub-entities.

- The model can support an unlimited number and types of entities.

Two Playgrounds

- A Payer Accountable Care Playground where each accountable care contract resides. Note that there can multiple contracts associated with each payer.
 - Entities are associated with each contract. The playground can easily expand to support an unlimited number of contracts and contract as contracts expire.
 - Metrics for each contract are payer/contract/population specific. For example, the performance metrics (quality measures, financial targets, etc.) for the Blue Cross/Blue Shield Plan contract are exactly those that are enumerated in the contract for that member population. The metrics for any specific contract can change from year to year.
 - The model provides for consolidated analytics across all payer contracts using either a custom set of metrics and/or a mix of payer specific metrics.
 - The model also supports the option of selecting a standard set of metrics across all contracts for internal organizational purposes while maintaining the payor/contract/population specific metrics for payer-specific analysis and reporting.
- An Entity Custom Analytics Playground where any accountable care organization entity or combination of entities can deploy custom analytics and metrics based on their individual requirements.

HLH Analytic Model 360°, Scalable, Aligned

Entities	Metrics				Metrics	
	Payor / Contract-Specific			Mixed	Custom	Custom
Ocean Medical Center	•	•	•	•	•	•
Ocean State Hospital	•		•	•		•
Ocean State Physicians			•	•	•	•
Ocean State ACO	•	•			•	
Coastal Care ACO					•	
Upstate ACO			•		•	

Contracts / Populations	Contracts						Populations		
	Blue Cross / Blue Shield Plan	Regional Health Plan	National Commercial Plan	Contract A	Contract B	CMS MSSP	Consolidated Analysis	Ocean Medical Center	Employee Population

In summary, the powerful HLH analytic model:

Provides a 360 degree view for easy performance analysis of:

- Any entity or combination of entities for any contract or across multiple contracts.
- Any contract or combination of contracts for any entity or across multiple entities.

Scales to accommodate any number of entities, payors, contracts and populations.

Creates alignment by providing two playgrounds:

- One that ensures all payer accountable care contracts are in perfect alignment with the specific metrics associated with each contract.
- One that provides for custom entity analytics based on each client’s unique requirements.

HLH analytic modules depicted in Picture 2 deliver population-based analytics within the accountable care model. HLH architected these specific modules to meet the unique challenges of emerging accountable care organizations:

[Optimizing Shared Savings Pay-for-Performance Reimbursement](#)

[Reduce Leakage](#)

[Identifying Low-Hanging Utilization Reduction Opportunities](#)

[Understanding Organizational Costs and Cost Drivers](#)

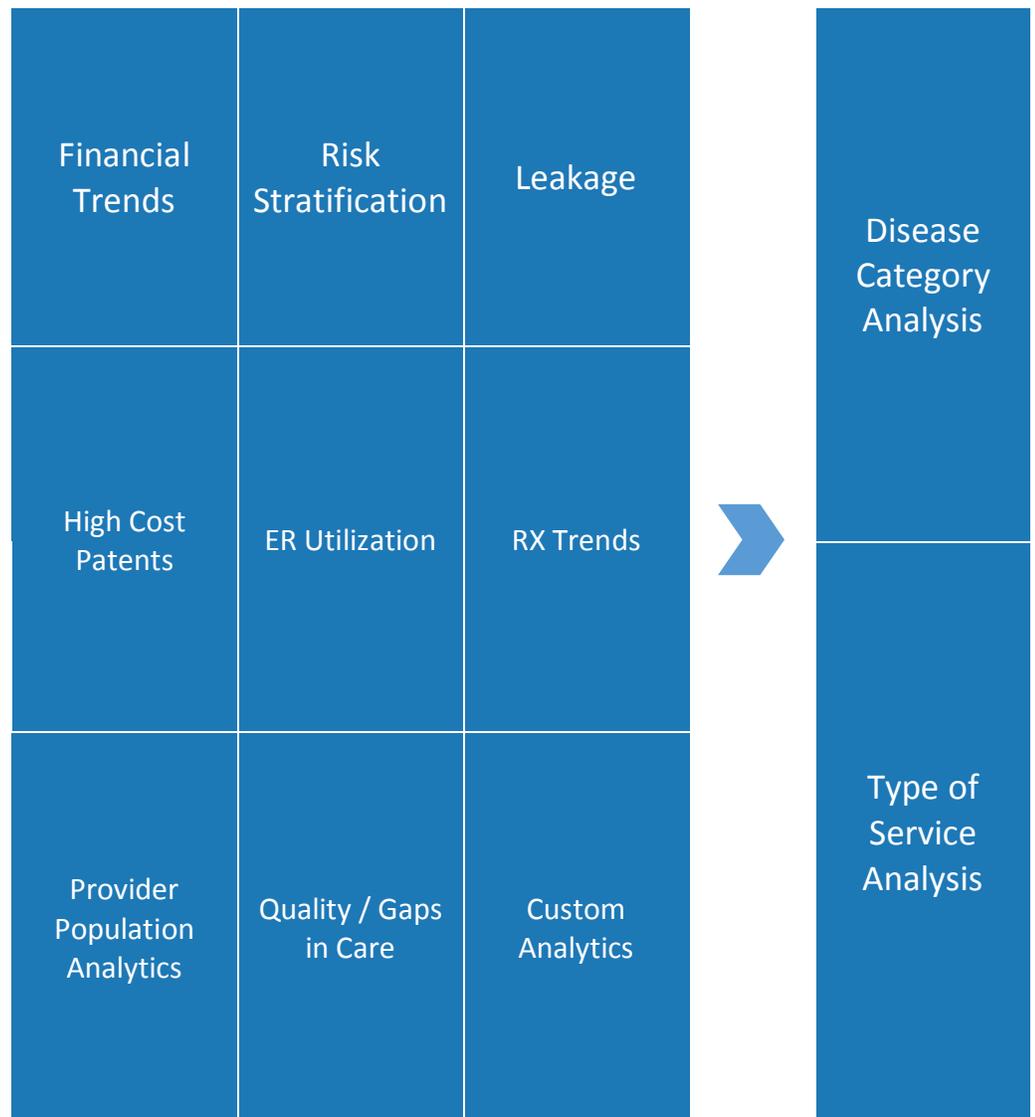
[Informing Disease and Chronic Care Management Programs](#)

They are designed to ensure optimal performance and 100% alignment with each accountable care contract by incorporating the specific metrics and methods specified by each contract. For example, if “Payer One” contract has 21 quality measures then the Quality/Gaps in Care module for that contract will incorporate exactly those measures. If “Payor Two” has 33 measures, the module for that contract will reflect those specific measures and so on. This design concept applies to all HLH analytic modules. HLH clients can add customized analytics to each module on top of the contract-specific content to reflect their unique organizational requirements.

HLH clients can also design and deploy totally custom analytics independent of any accountable care contract to meet any analytics requirement(s) outside the accountable care model.

Each HLH module:

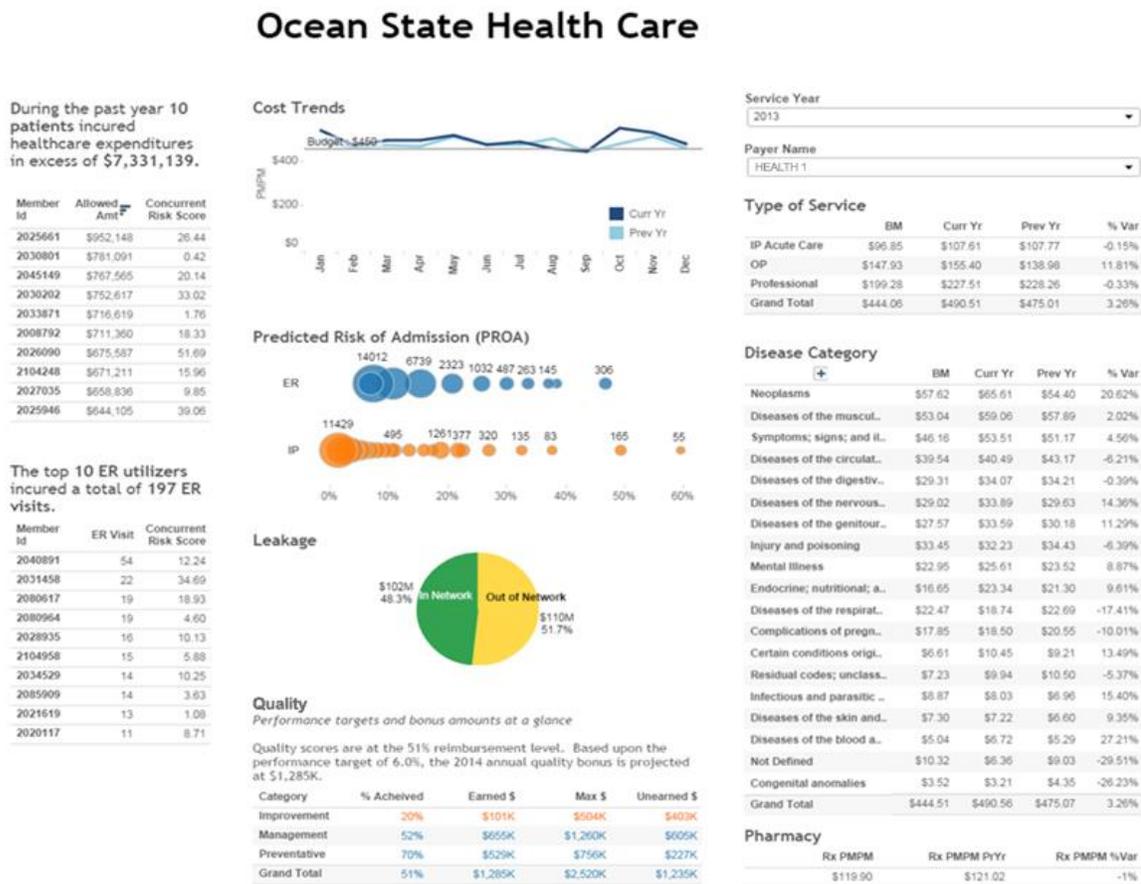
- Supports all accountable care reimbursement models
- Embeds evidence based clinical and process measures, and benchmarks required by each contract and / or client
- Is linked to a type of service/disease category variations analysis that identifies changes in medical costs at any level down to the ICD9 or claim levels for current and prior periods.



Collectively, the HLH analytic modules offer a 360 degree view of network utilization and cost of care delivered under any reimbursement method.

All HLH modules are accessed via a single Visual Analytics Executive Dashboard (more about this technology later) as depicted in Picture 3. This single dashboard provides seamless navigation across and within each HLH module allowing users to zoom in and out at will, providing a 360 degree view of all populations. As indicated by the arrow in Picture 3, below, end users begin a session by simply selecting the specific payor contract or organizational entity they wish to work with and then selecting the year(s) of data appropriate to their analysis. The dashboard is then oriented to these selections and the session begins. The Visual Analytics Executive Dashboard enables the user to efficiently identify and quantify actionable opportunities for quality improvement and cost reduction across the entire care continuum:

- Specific to any accountable care arrangement;
- Consolidated across accountable care contracts; and
- For any organizational entity or combination of entities.



Below is a brief summary of each HLH module accessible by the

Financial Trends

Financial trends are projected on a rolling basis in order to provide a stable base of comparison. Trends are further delineated by place of service with comparisons on a risk adjusted budget basis. Current vs prior period comparisons are also included in order to provide an historic context

Quality Measurement/Gaps In Care

Gaps in care mirror the specific contractual requirements of each payer. Quartile measures and bench mark comparisons are expressed in terms of the actual financial rewards assigned to each measure, thus completing the link between quality improvement and value based payments. Every metric is drillable down to the PCP/ member specific level, thus providing an immediate ability to initiate improvement.

Leakage

Managing network utilization is one of the key elements to maximizing early financial performance. We provide clients with the ability to customize their provider networks and assess the financial impact of leakage at the service level. Differentials in utilization patterns during day of the week or hour of the day are readily discernable using this powerful dynamic dashboard. Users can identify leakage by:

- Disease category and type of service; and
- Professional and hospital providers that are out of network for any Payer contract that are rendering services to any covered patient.

Risk Stratification

Every member is assigned both a prospective and retrospective risk score. High risk patients are flagged in order to maximize the impact of early intervention. Prospective risk scores are based on previous 12 months of claims, while retrospective scores are based on an algorithm of a member's given diagnoses. Interactive Prospective Risk of Admission (PROA) graphs also allow grouping of members with high risk of ER and IP utilization. All graphics link directly to a member healthcare timeline for more detailed member information

Rx Trends

The entire range NDC data elements are built into our Rx analytic platform. We also include at least three years of historic data so that clients can track trends over time. Standard comparisons encompass current and prior utilization of brand vs. generic drugs. We also identify high-cost and top prescribed drugs by member, disease and prescribing physician. In order to provide clinicians with the complete context of a member's healthcare utilization, users, with a simple click of a mouse, can view both the medical and pharmacy utilization simultaneously by simply using the Member Healthcare Timeline dashboard. This affords the ability to identify and investigate prescribing patterns within the context of the patients

ER Utilization

For the first time, medical managers are provided a view of 100% of patients medical and pharmacy claims. Immediate opportunities to reduce ED use are identified through the use of the visual analytic dashboards. Trends in inappropriate ED use are also readily identifiable.

High Cost Patients

Ranks all members by total cost and splits total cost into Inpatient, Outpatient, and Professional claims. Also included at member level is the highest cost diagnostic category and ICD code associated with the last 12 months of that member's care. Drillable to member healthcare timeline for additional detail.

Provider Populations Score Card

Summarizes spend, risk scores, generic prescribing rates, and age/gender distributions for a given physician or physician group population. Also includes year over year PMPM analysis by both type of service and diagnostic categories, and identifies quality measures and gaps in care. Graphs are included for each of the metrics to aid users and highlight notable data points.

Custom Analytics

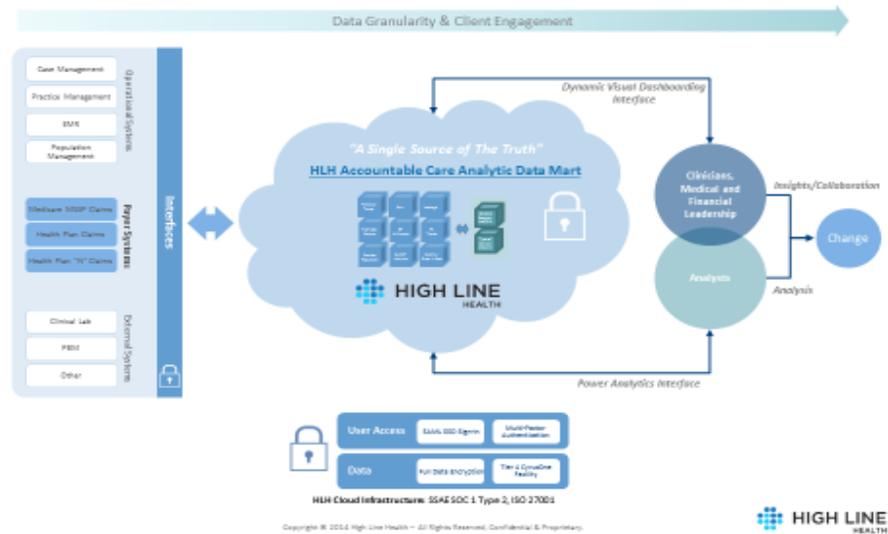
Clients have access to the entire HLH comprehensive, client-customized library of measures, dimensions, methodologies, and business rules and can generate customized queries to supplement HLH modules or deploy new modules totally independent of HLH provided modules, with or without HLH assistance.

The High Line Health Enterprise Analytics Platform is a cloud-based solution that delivers comprehensive insight into your critical business information. Picture 4 below depicts the solution functional architecture components and how they fit together: payer claims and associated data is submitted via secure FTP, enterprise integration is achieved through interfaces for both external and internal data sources and the data mart is updated and all analytic modules are refreshed.

There are two interfaces:

Visual Dashboard Analytics used by executives, administrators and physicians presents information in interactive visual dashboards.

Power Analytics used by analysts for custom query and application development



Neither of these interfaces are based on “traditional” business intelligence software approaches and represent a significant departure from the way analytic solutions have historically been designed and deployed. They provide an innovative visual approach to data analysis and an “Agile BI” approach to developing custom queries and analytic modules that do not require specialized teams to implement or maintain. High Line Health incorporated these new interface technologies because they are best suited to meet the needs of evolving accountable care organizations.

Active, hands-on participation in analyzing data driven results by senior management, physician, and administrative leadership within a “culture of analytics” and trust is essential to success in the accountable care marketplace.

Financially oriented reporting structures coupled with traditional business intelligence analytics and both of their requisite learning curves tend to alienate business users and physicians in particular.

Traditional analytics:

Focuses on collecting and simply presenting data for analysis

Requires highly trained users with the specific skill set in being able to augment, manipulate and gather insights from data

Offers difficult analytic interfaces that have a significant learning curve

Do not offer the tools that business users need to actively engage and create a “culture of analytics” across the organization

Have an estimated user adoption rate of only 3-8% according to Forrester Research

Deploying traditional business intelligence analytics in the accountable care environment is a prescription for failure. No matter how “powerful” the analytics your senior managers, physicians and administrative leadership will not engage, hands-on to use the information to gain insights into improving organizational performance. Dressing up traditional “textual, tabular” analytics with charts and graphs will not solve the problems listed above.

The HLH solution overcomes the shortcomings of traditional analytics by incorporating visual dashboard analytics in an easy to use interface designed specifically for business users. Visual analysis means presenting information in ways that support visual thinking and collaboration. The right presentation makes it easy to organize and understand the information. Critical information may be quickly found, and features, trends and outliers may be easily recognized. For example, the Risk Dashboard in Picture 5 displays the probability of an ER visit or impatient admission in the next 12 months. It displays information at the individual and population levels simultaneously. Individuals and populations that have a high level of probability are easily identified. The highest risk members are ranked and listed.

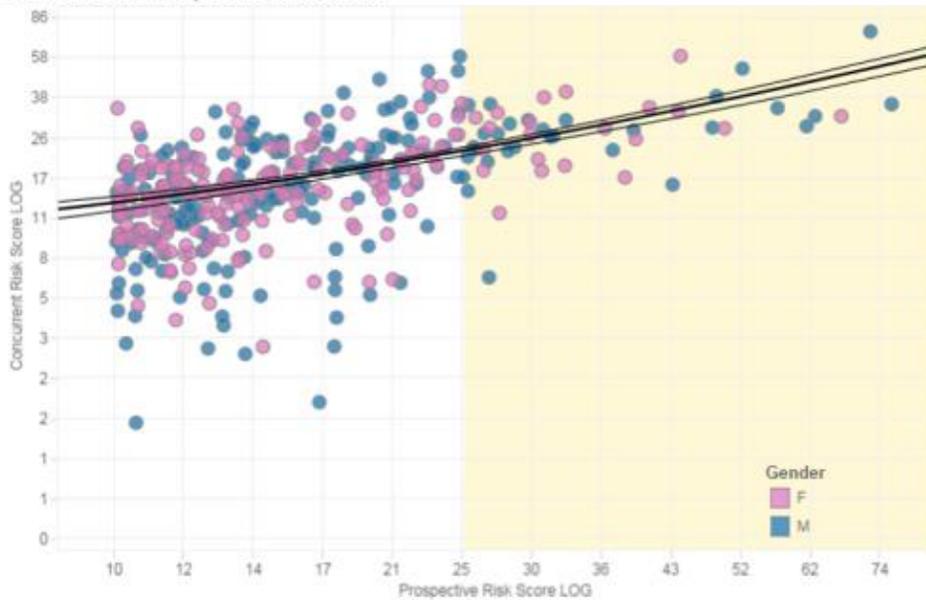
By simply pointing and clicking the user can drill down to more detailed information and drill through to other views at either the population or member levels. Furthermore, the interface

“saves” the drill down paths for each session so the end user can easily navigate up and down as needed.

Visual analytics shifts the focus from overview of metrics to discovering causes and effects of the phenomena the metrics express and reveals insights not possible through conventional analytics.

Risk Dashboard

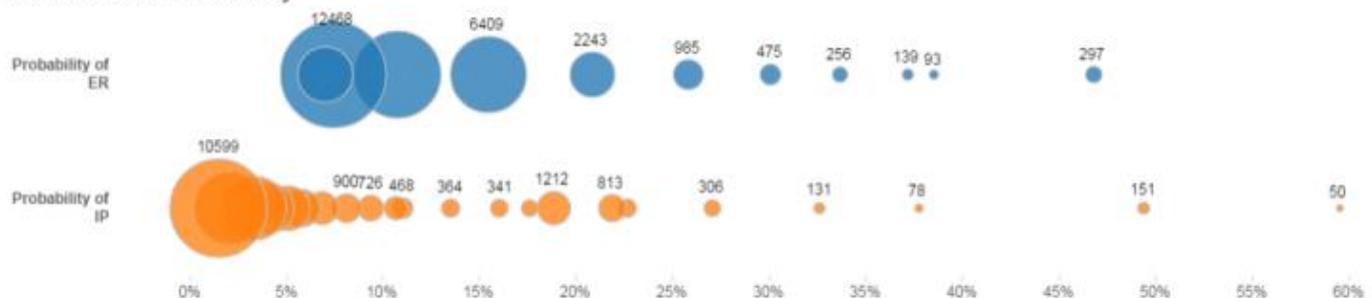
Concurrent / Prospective Risk Score



Risk Member List

Member Id	Gender	Concurr...	Pros...
2032365	M	36.04	76.63
2051761	M	75.33	72.48
2023112	F	31.90	67.17
2067502	M	31.89	62.72
2064992	M	28.83	61.33
2031458	M	34.69	56.83
2026090	M	51.69	51.83
2049458	F	28.23	49.48
2025946	M	39.06	48.43
2070474	M	28.45	47.92
2056931	F	58.69	44.10
2047570	F	33.51	43.83
2104248	M	15.96	43.17
2037644	F	34.87	40.65
2022465	F	25.29	39.20
2028792	M	27.65	39.01
2033791	F	17.16	38.11
2043816	M	22.83	36.92
2066384	F	28.21	36.17
2064514	F	40.85	32.65

ER/IP Admission Probability



“Data visualization dashboards will enable users to quickly understand data trends, significantly enhancing ease-of-use while streaming and organizing vast amounts of data.”

-Frost and Sullivan/Chime, 2014

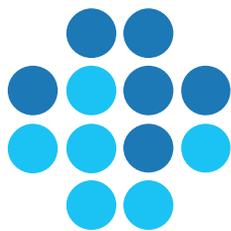
The HLH Visual Dashboard capability unites data exploration and visualization in an easy to use interface that anyone can use without formal training. It gives your business and clinical leadership a full seat at the analytic table.

HLH Visual Dashboard Analytics will create an environment of ubiquitous collaboration across your senior management, physician and administrative leadership, foster an analytic culture and allow your team to:

Gain collective insights and raise general analytic awareness;

Ask more, deeper, better questions; and

Identify, quantify and collaborate on real actionable opportunities



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