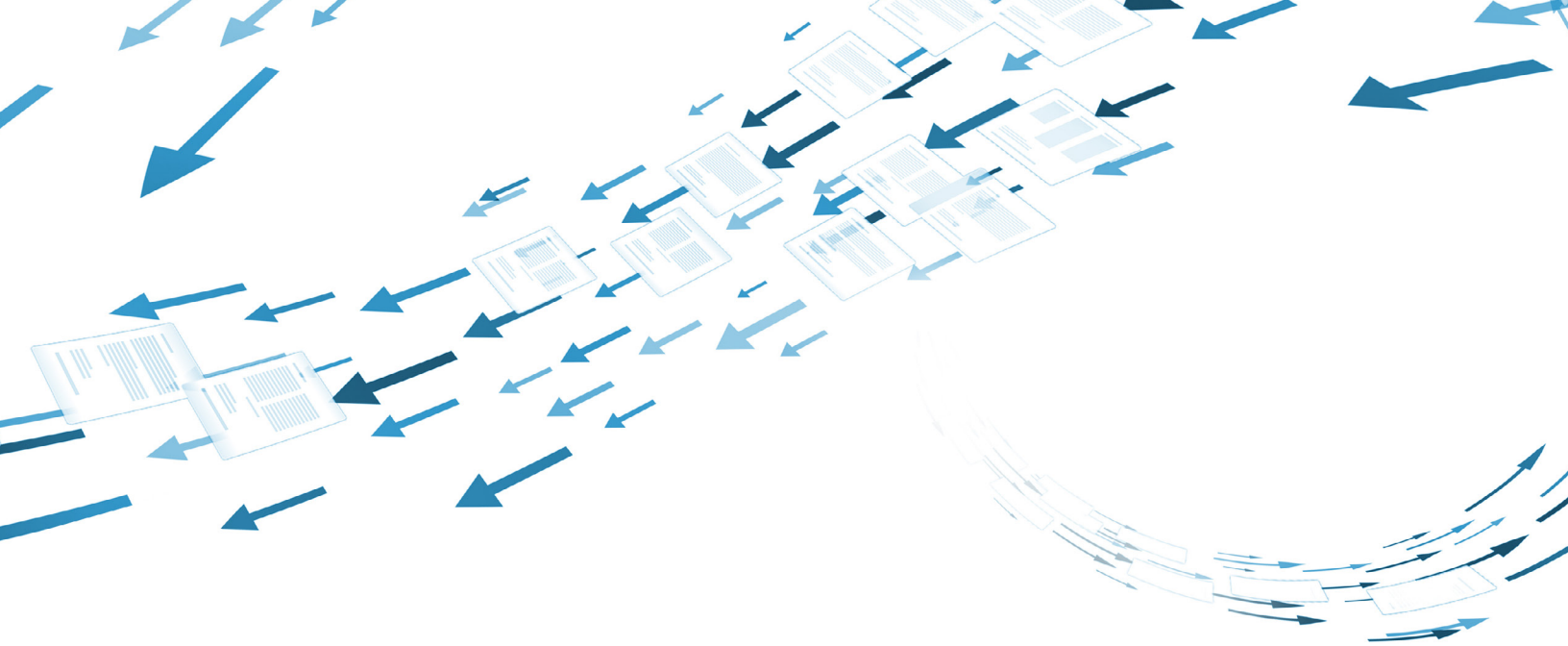
Population Health Management

Made Simple

A prescriptive approach to managing value-based contracts

Lesson 04 - Identifying Your High Risk Patients

Lightbeam Health Solutions



Identifying Your High Risk Patients

The foundation for a successful Population Health Management (PHM) platform starts with an Enterprise Data Warehouse (EDW). An EDW serves as a unified patient registry which stores clinical, claims, social, and other data from multiple sources. Once the EDW has been established, healthcare organizations can begin to stratify their patient population using a Risk Stratification engine. Risk Stratification is the process of prioritizing patients based on risk. This tool is useful for providers and healthcare organizations who are responsible for managing patient populations and want to focus care management resources on those patient groups where they can make the biggest impact for population health. In this Lesson, rather than explaining what Risk Stratification is or how to build an engine, the reader will learn in detail about Lightbeam's Risk Stratification Engine.

The Lightbeam PHM Platform uses a two-method approach for organizing patients into different categories of risk. The first method assigns a Risk Score to each patient using the Johns Hopkins Adjusted Clinical Groups® (ACG®) System for Predictive Modeling. The second method utilizes the Lightbeam ATI ("Ability to Impact") Score to distinguish patients with like Risk Scores. In the Lightbeam application, both the Risk and ATI Score are relative to the patient population being analyzed.

Risk Scoring

The Johns Hopkins Adjusted Clinical Groups® (ACG®) System offers a unique approach to measuring morbidity and stratifying risk that improves accuracy and fairness in identifying patients at high risk, forecasting healthcare utilization, assessing provider performance, and evaluating payment contracts. The unique value of the ACG® System derives from the measurement of the morbidity burden of patient populations based on disease patterns, age, and gender. It relies on age, sex, and diagnostic codes, but can be supplemented with costs and pharmaceutical code information, all found in insurance claims and electronic medical records. This approach provides the user with a more accurate representation of the morbidity burden of populations, subgroups, or individual patients - as a constellation of morbidities, rather than a reflection of individual diseases.

The Johns Hopkins ACG® System has a uniquely clinical perspective on health that emphasizes the inter relationship of multiple diseases or comorbidity burden to explain healthcare utilization both retrospectively and prospectively. Each individual in the population is assigned an actuarial risk prediction, which is the Adjusted Clinical Group based on their unique morbidity burden. Using this ACG® assignment as a point of reference the individual patient can be compared to the local population or to an age appropriate reference population producing a set of valuable risk

scores, both concurrent and predictive. In addition to this core capability, the ACG® System delivers tools and model reports for:

- Evaluating and representing the weight and distribution of morbidity and risk across entire populations.
- Grouping clinically related conditions into meaningful clusters in order to understand the prevalence of these conditions in the population and for identifying specific patients or patient cohorts that might benefit from more intense clinical intervention or care management activities.
- Generating valuable insights into trends within a population including, but not limited to, patients with emerging risk, patient at risk for high pharmacy spend, and patients with significant care coordination risk.

Resource Utilization Bands (RUBs)

The ACG® actuarial model divides all patients into five bands of predicted resource utilization. The Resource Utilization Bands rapidly identify patients that are predicted high utilizers of healthcare services based on the illness burden each patient carries. The RUBs are useful in many ways, such as to subdivide populations in search for care management groupings, or to look at the case-mix load of different providers within a group.

The value of the ACG® System is supported by three decades of academic research, rigorous peer review, and global clinical and financial end user validation, which is why Lightbeam leverages the ACG® System. It has withstood the financial and clinical pressures of the modern-day healthcare marketplace to become a statistically valid and industry standard risk adjustment and predictive modeling methodology. However, the ACG® system is based primarily on claims data and does not account for a patient's clinical profile or family history.

ATI Score

The Lightbeam ATI or "Ability to Impact" is a patent-pending Score based on a proprietary Lightbeam algorithm. The ATI technology considers social factors that include marital, employment, transportation status and many more. Lightbeam developed this method considering extensive studies linking social and behavioral health conditions to unprecedented rises in resource utilization and costs. With the ATI Score, Lightbeam aims to identify those patients where the ability to impact outcomes is greatest. The algorithm applies data which is not typically contained in claims including the data elements listed below. The ATI Score also uses data such as variability of spend for given or similar conditions. The higher the variability of spend, the higher the ATI score. Over time, Lightbeam will continue to test and refine the ATI algorithm.

In a world of limited Care Management resources, the ATI capability enables providers to maximize their tools by focusing care coordinators on the best candidates for outcome improvements.

Factors currently used to calculate the ATI Score:

- Most Recent BMI (Normal, > 30, >40)
- Most Recent Blood Pressure
- Most Recent Blood Oxygen Saturation (Pulse Oximeter reading)

- Most Recent HbA1c
- Most Recent LDL
- Presence of Chronic Conditions:
  - CHF
  - COPD
  - Cancer/Oncology
  - Diabetes
  - Hypertension
  - Asthma
  - ESRD
  - Mental Health
  - Chronic Pain
- Risk Level
- Marital Status
- Smoking Status

Risk Stratification will help prioritize patients to optimize care management efforts based on the ability to impact future health outcomes and utilization within a defined group.

Optimizing Searchlight

Risk stratification as a component among broader population health initiatives is very important as it helps focus limited resources on patients with the highest predicted resource utilization (i.e., cost) over the next 12 months. Unlike other population health platforms, Lightbeam offers an additional layer of clinical, social, claims, and other data sources. Searchlight will then take the high-risk patients and further prioritize that population to optimize care management efforts based on the ability to impact future health outcomes and utilization within the defined group. Full information can be customized into a variety of formats but many providers prefer a single-sheet summary for efficient interpretation and planning. The ability to combine the ACG® predictive cost multiplier and the Lightbeam ATI score on a single dashboard allows providers to view their patient population in a valuable and intuitive way. In a world of limited Care Management resources, the ATI capability enables providers to maximize their tools by focusing care coordinators on the best candidates for outcome improvements. Combining the ATI results with automation tools will empower care management to reach out to patients with gaps in care and optimize patient outreach efforts in many ways.