

## Ayasdi Population Risk Manager

### Using Artificial Intelligence to Predict Patient Risk

Today's new health economy is bringing a profound shift from volume-based care to value-based care, where providers are now being paid on the value of care they deliver to individuals. With this new focus on value, it is critical for both healthcare providers and payers to effectively manage the risk of patients and share risk as they participate in value-based payment models. What is profit today may very well be cost in the future, and without a proactive strategy for managing population health, health systems risk the financial wellbeing of their organization.

Traditionally, risk assessment has been reactive, based on predetermined historical characteristics, such as chronic conditions or hospital admissions. Further, risk assessments are often limited to claims data and are unable to discern modifiable risk factors, such as prescription drugs and individual procedures, that if identified, can help improve an individual's course of care.

### Next Generation Risk Prediction

Ayasdi Population Risk Manager is an application that uses machine intelligence to automatically discover nuanced subpopulations, predict future risk trajectories and drivers of risk, and inform the most effective interventions for delivering the best outcomes – all while understanding your patients' multifaceted characteristics. Through analyzing patient records, financial data, and socio-economic data, Ayasdi Population Risk Manager allows healthcare organizations to manage population health proactively and continuously.



Discover



Predict



Justify



Act



Learn

## Discovery

Often times, the patients that are high risk today are those that are deemed to be high risk in the future. It is more important, however, to understand those patients who will have the greatest escalation, or change in risk over time, to truly preempt negative events and costs. With the size and complexity of patient data, though, it is impossible to manually discover, with accuracy, patient groups that share similar risk factors that could lead to escalation.

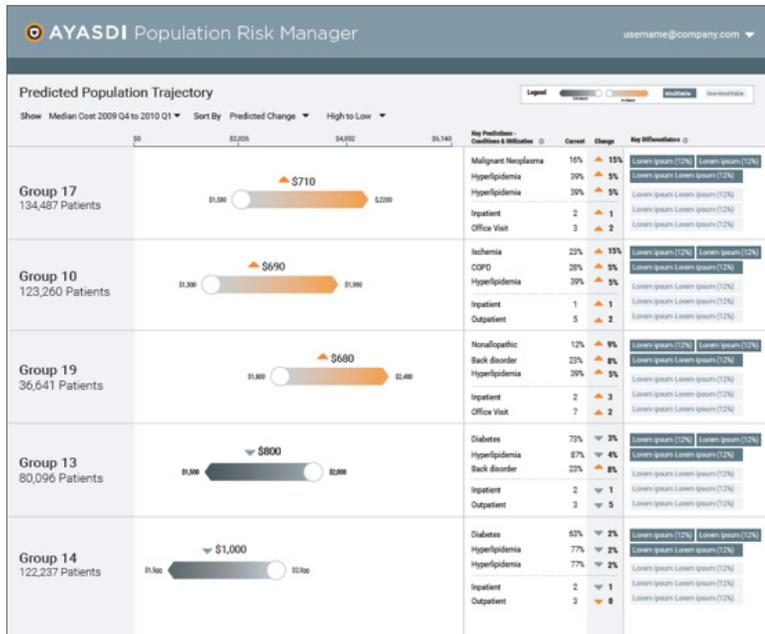


Figure 1. Discover patient risk trajectories

Ayasdi Population Risk Manager enables the discovery of even the most nuanced sub-populations to automatically identify unique groups of patients that share similar risk trajectories. These predictive signatures are based on a holistic view of the patient population and consider a multitude of determining characteristics, whether it be treatments received, medications prescribed, or type of medical coverage. This type of holistic discovery is unique to AI and improves prediction and makes operational insights possible.

## Prediction

Holistic discovery enables highly-accurate predictive models of individual and subpopulation risk trajectories to identify who will escalate to a riskier state over time, and to gain foresight into the future costs and drivers of patient risk. Ayasdi Population Risk Manager not only determines the groups and individuals projected to have the highest escalation of costs over time, but also a range of other outcomes such as the conditions likely to appear for each group, and an individual's predicted change in utilization. Predictions can be made across multiple targets and are multi-faceted, considering all factors whether they're health or non-healthcare related.

It is not just the current disease state of a patient, but rather, the unique combination of factors that determine future risk.

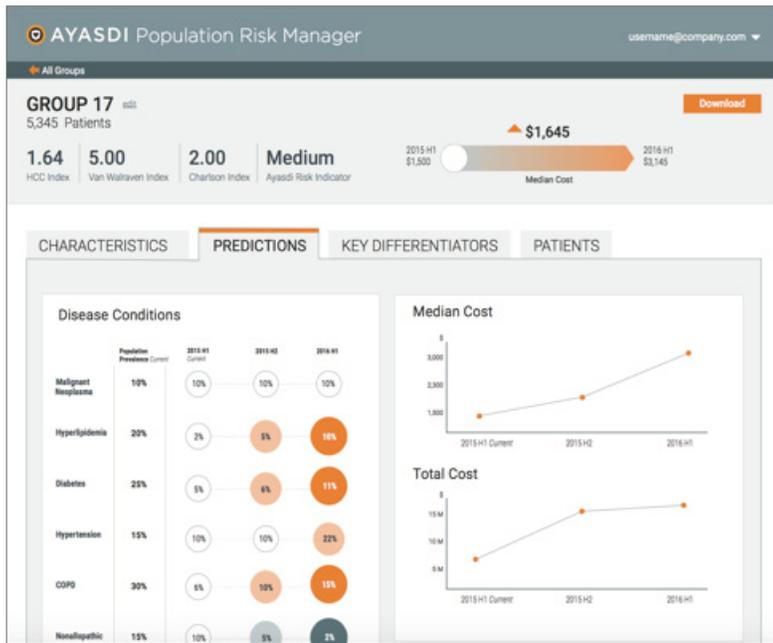


Figure 2. Predict multiple risk outcomes

## Justification

In order for clinicians and others to bring AI into their day-to-day operations, transparency into predictions is critical. Ayasdi Population Risk Manager makes AI consumable by revealing the details of its assertions such as differentiating characteristics of patient risk trajectories, what factors make them high or low-risk, and descriptions of individual factors that lead to variation in cost and quality. What drives these differences does not have to be a diagnosis, but could be a combination of factors such as the time they received treatments, lifestyle factors, and their type of medical coverage.

With a thorough understanding of the “why” behind predictions, healthcare organizations are able to adopt AI into day-to-day decision-making.

## Action

The key is to use an application to push this intelligence to the field for use by medical directors, care managers, and case workers. Intelligence that is restricted in PowerPoint or in PDF cannot transform an organization or its population.

## Learning

As more multifaceted financial, clinical, and socio-economic data is collected, Ayasdi Population Risk Manager develops more accurate and detailed predictions of risk factors and cost, and measures the impact of interventions over time.

## Conclusion

With the shift to value-based care, a comprehensive population health strategy is more critical than ever. By leveraging the key attributes of artificial intelligence – discovery, prediction, justification, action, and learning, Ayasdi Population Risk Manager creates a proactive approach to managing health, helping health care organizations to succeed in today's new health economy.

# AYASDI

4400 Bohannon Drive, Suite 200  
Menlo Park, CA 94025 USA  
sales@ayasdi.com  
ayasdi.com | @ayasdi