

# Risk Stratification

WITH MACHINE LEARNING & PREDICTIVE ANALYTICS

## HEALTHCARE SPENDING

### **\$3.6 trillion**

Annual cost of US healthcare spending in 2018, an increase of 4.6% from the previous year.

### **\$5,000**

How much the average American household spent per person on healthcare in 2018.

### **75%**

Percentage of total health care costs that is attributed to chronic disease.

### **35.7 million**

Estimated number of hospital stays in the United States in 2016.

### **145.6 million**

Estimated number of emergency department visits in the United States.



PREDICTIVE ANALYTICS SOLUTIONS FOR HEALTHCARE

## Improving Care Management for Better Patient Outcomes

Healthcare is often reactive in nature. But with healthcare spending increasing every year—ranging in the trillions—the medical field needs to adopt a proactive and dynamic approach to patient care. As they say, prevention is better than cure. Several diseases and clinical conditions can be managed better if identified ahead of time.

It has become increasingly crucial for healthcare professionals to:

- Identify patient's risk of disease early on
- Match risk with levels of care
- Individualize treatment plans and interventions
- Control growth of healthcare costs
- Reduce hospitalizations and emergency department visits
- Improve quality of care
- Improve the overall patient experience



## ANALANCE SOLUTION: Predicting Risk to Improve Health Outcomes

Using predictive analytics and machine learning, determine the likelihood of individuals to develop a certain clinical state (such as heart disease, diabetes, cancer, or sepsis). Comb through patient medical history, vitals, clinical laboratory results, and other clinical and lifestyle indicators to identify variables associated with risk of the disease.

Build a classification algorithm that will classify patients into certain risk profiles—with summaries and findings easy to explore through dashboards and reports.

### Next Steps

By adopting a predictive approach, the healthcare industry can develop insights into how patients are progressing along common disease trajectories. And with clear risk profiles, healthcare facilities can identify those who are most likely to benefit from care management—enabling early detection and optimal intervention. Personalized care plans can then be initiated for these patients in order to improve outcomes and ultimately reduce high healthcare spending (which is often an indicator of inadequate quality of care).

### SOURCES:

1. Centers for Medicare & Medicaid Services, "[National Health Expenditure Data](#)"
2. CNBC, "[Americans now spend twice as much on healthcare](#)"
3. HCUP, "[Overview of US Hospital Stays in 2016](#)"
4. CDC, "[Emergency Department Visits](#)"
5. The American Journal of Medicine, "[Health Care 2020: Reengineering Health Care Delivery to Combat Chronic Disease](#)"

### ABOUT DUCEN

Ducen helps Business and IT users of Fortune 1000 companies with advanced analytics, business intelligence and data management through its unique end-to-end data science platform called Analance. Analance is an enterprise-class, state of the art integrated platform that delivers power and ease of use to business users and data scientists with a seamless experience and platform scalability to support business growth and strategy.

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