

# Stay a step ahead with an advanced look at health risks

Assessing patient risk is critical in today's healthcare environment. Milliman Advanced Risk Adjusters (MARA)™ lets you stay a step ahead.

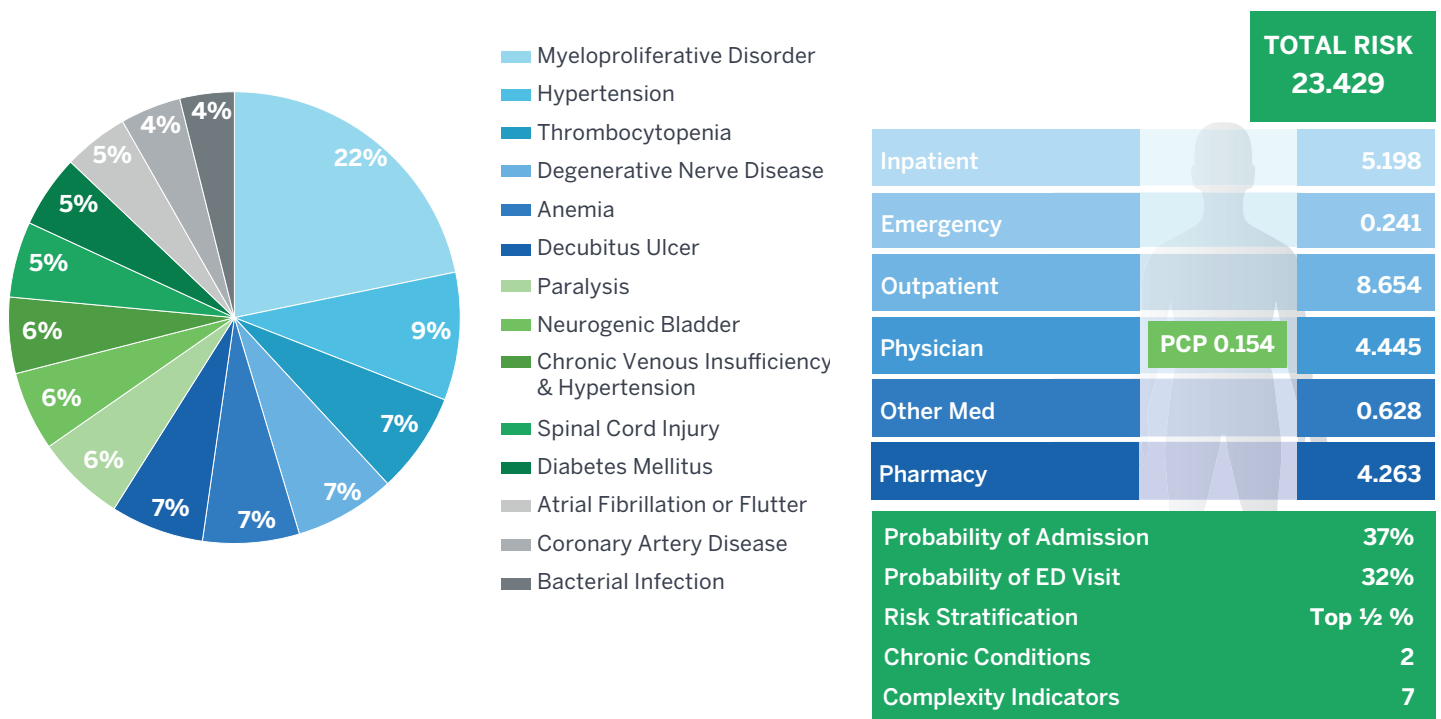
MARA is at the heart of today's leading population healthcare analytics platforms. It provides patient risk insight in the electronic medical records at the point of care. Available since 2009, MARA supports more than 300 healthcare organizations. Government healthcare programs, not-for-profits, mutuals, and for-profit plans and providers rely on MARA models to evaluate risk for financial and medical management applications.

MARA delivers a complete, high-value risk profile without the need to run multiple models.

- **Analyze** clinical risk drivers using clinical categories
- **Identify** members likely to have admissions or ED visits
- **Rank** populations by level of resource utilization

## YOUR HEALTHCARE DECISIONS NEED THE BEST RISK ASSESSMENT.

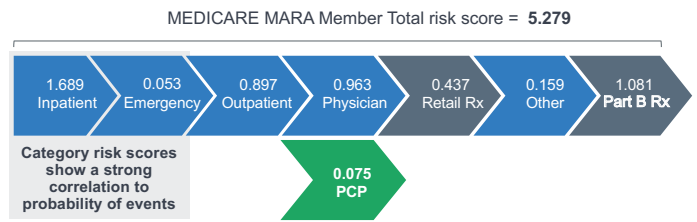
Risk tabulation by service categories, condition drivers, probability of events, chronic and complexity indicators.



## Gain insight from MARA's Medicare risk scores

Unique Medicare models show category risk scores that provide a strong correlation to the probability of events. MARA also provides risk scores for two pharmacy categories. Superior models for Medicare Advantage support segmentation to improve care planning and care transformation.

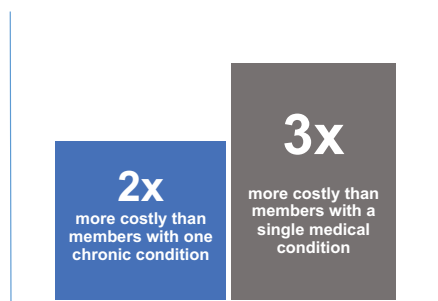
### SCORES EXPLAIN RISK BY HEALTH SERVICE CATEGORIES. PCP SCORE IS A SUBSET OF THE PHYSICIAN RISK SCORE



## MARA's Case Complexity Indicators improve stratification

MARA Complexity Indicators help case managers prioritize members who are both high cost and clinically complex. In a Medicare population study, members identified with just one Complexity Indicator were expected to be twice as costly as members with one chronic condition and three times more expensive than members with a single medical condition.

### MEMBERS WITH ONE COMPLEXITY INDICATOR ARE MORE COSTLY

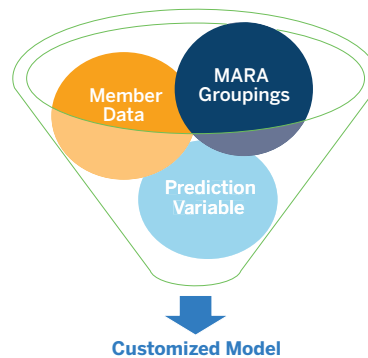


## Customize to your specific populations

For unique situations or valuable data that is not available from administrative claims, MARA models can be customized. A MyMARA™ model can:

- Reflect your own population
- Incorporate unique data variables
- Predict specific outcomes

### CUSTOM CALIBRATIONS



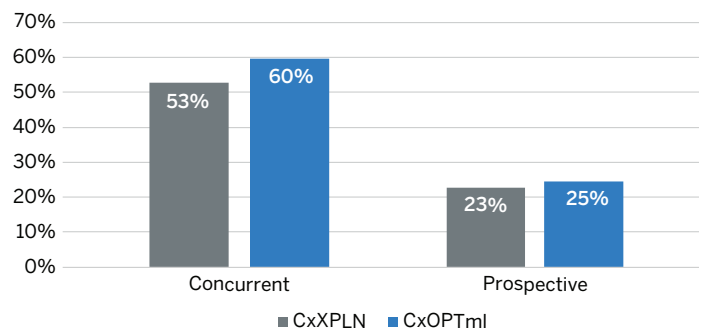
## Recognized performance excellence

The importance of predictive accuracy cannot be overstated, especially as more healthcare organizations are implementing risk-based performance measures, value-based payment systems, or pricing health benefits.

The superior performance of MARA's risk adjustment models has encouraged the industry to move decisively away from demographic-based premium and payment systems. Predictive accuracy of risk adjustment models is typically judged by the R-Squared statistic, or the percentage of variation explained by the model. When used to stratify the population, MARA is 65% accurate in identifying the top 1% of utilizers. For additional metrics, contact [MARA@milliman.com](mailto:MARA@milliman.com)

### MARA MODEL PERFORMANCE

R<sup>2</sup> – pharmacy and diagnosis-based models



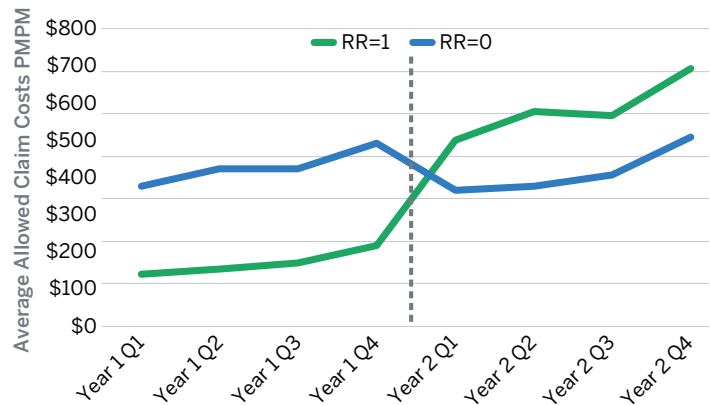
**LIBRARY OF MODELS**

MODEL TYPE	MODEL NAME	METHODOLOGY	INPUT REQUIRED	CONCURRENT	PROSPECTIVE	OUTCOME	USE
<b>COMMERCIAL AND MEDICAID POPULATIONS</b>							
Risk Adjuster	RxXPLN	Regularized Regression	Demographics Pharmacy	✓	✓	Risk Scores	When your application needs an early indication of risk. Best for new enrollment, or when medical data is incomplete.
	DxXPLN		Demographics Medical	✓	✓	Risk Scores Clinical Conditions	Best when your application needs to avoid influence of drug utilization, such as profiling providers, risk based payment where pharmacy services are excluded from capitation and risk management outcomes.
	CxXPLN		Demographics Medical Pharmacy	✓	✓	Risk Scores Clinical Conditions	Best performance. Use for care management, identification, segmentation by risk strata.
	RxOPTml	Optimized Machine Learning	Demographics Pharmacy	✓	✓	Risk Scores	Optimized for best possible predictions. Machine learning models have higher performance. Use when the application does not require a transparent explanation.
	DxOPTml		Demographics Medical	✓	✓	Risk Scores Clinical Conditions	
	CxOPTml		Demographics Medical Pharmacy	✓	✓	Risk Scores Clinical Conditions	
<b>MEDICARE POPULATIONS</b>							
Risk Adjuster	MCRRxXPLN	Regularized Regression	Demographics Pharmacy	✓	✓	Risk Scores	Similar to the commercial versions. Service categories include Total plus Rx, Part B Rx, IP, OP, ER, PHYS, PCP, Other Med
	MCRDxXPLN		Demographics Medical	✓	✓	Risk Scores Clinical Conditions	
	MCRCxXPLN		Demographics Medical Pharmacy	✓	✓	Risk Scores Clinical Conditions	
	MCRRxOPTml	Optimized Machine Learning	Demographics Pharmacy	✓	✓	Risk Scores	
	MCRDxOPTml		Demographics Medical	✓	✓	Risk Scores Clinical Conditions	
	MCRCxOPTml		Demographics Medical Pharmacy	✓	✓	Risk Scores Clinical Conditions	
<b>MARA MODELS AND TOOLS FOR POPULATION ANALYTICS, MEMBER SEGMENTATION, CASE MANAGEMENT</b>							
Model	Rising Risk	Predictive Model	Rising Risk + CxXPLN		✓	Member Rising Risk Identification; Risk Strata	Early indicator of rising risk
Segmentation Group	Chronic / Non-Chronic	Group	All medical models	For concurrent or prospective results		Groups MARA Conditions into Chronic/Non-Chronic Conditions Based on AHRQ	Segment chronic members for DM programs
Segmentation Group	Complexity Indicators	Group	All medical models	For concurrent or prospective results		Member Complex Conditions	Identify and segment clinically complex cases
<b>HEALTH EXCHANGE POPULATIONS</b>							
Risk Adjuster	Federal HHS-HCC	HCC	Demographics Medical Pharmacy	✓		Risk Scores by Metal Level, HCCs, RXCs, Demographic Components	MARA implementation handles data without pre-processing. Includes models for 2015, 2016, 2017, 2018, 2019

## What if future high-risk members could be identified before they incur those costs?

The ultimate goal for care management is finding the rising risk cohort before costs escalate. While it is only natural to focus attention on the highest cost members (the 20% in the 80/20 rule) in order to reduce those costs, focusing on members who will regress to the mean can be inefficient. Rising risk prediction can prioritize the remaining 80% of the population more efficiently to identify the opportunity cases. Using advanced analytics, the MARA Rising Risk™ model offers a fresh perspective on the question of member prioritization and stratification.

### A MORE PRECISE METHOD TO PROACTIVELY IDENTIFY INDIVIDUALS FOR EARLY INTERVENTION



## Enjoy flexibility with high-value results.

MARA supports your financial and medical management initiatives by giving you the option to license models from the extensive MARA Library. Select models based on your organization's business applications, population types, and available data. MARA models are optimized for medical and/or pharmacy input to assure you achieve the best possible risk assessment for your applications.

## Experience the lowest risk implementation with technically friendly software.

MARA Software was intentionally designed for client-site installation with user-controlled data security and processing. The product is platform-independent, designed to deploy easily in Windows, Linux, and Unix environments. MARA offers multi-threading for rapid processing, APIs for tight integrations, and an easy-to-learn graphical user interface is available.



Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in life insurance and financial services, property & casualty insurance, healthcare, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

[milliman.com](http://milliman.com)

### Learn more

For more information about MARA or to schedule a demonstration of the software, contact or visit us at:

[MARA@milliman.com](mailto:MARA@milliman.com)  
[milliman.com/MARA](http://milliman.com/MARA)