

# Library of Models

## Commercial and Medicaid populations

Model Type	Model Name	Methodology	Input Required	Concurrent	Prospective	Outcome	Use
Risk Adjuster	RxXPLN	Regularized regression	Demographics Pharmacy	✓	✓	Risk Scores, Drug Classes	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, Risk Drivers	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, Risk Drivers, Drug Classes	Best performance. Use for most applications when pharmacy data is available. Can be best for care management, pricing and budgeting.
	RxOPTml	Optimized machine learning	Demographics Pharmacy	✓	✓	Risk Scores, Drug Classes	Optimized for best possible predictions. Machine learning models have higher performance. Use when the application does not require transparent explanation.
	DxOPTml		Demographics Medical	✓	✓	Risk Scores, Clinical Conditions, Risk Drivers	
	CxOPTml		Demographics Medical Pharmacy	✓	✓	Risk Scores, Clinical Conditions, Risk Drivers, Drug Classes	
Segmentation and Prioritization	DxRising	Optimized machine learning	Demographics Medical		✓	Rising Risk Indicators, Rising Risk Score, Probability of PMPM change, Clinical Conditions, Risk Drivers	Used to prioritize individuals based on expected change in costs from year one to year two; care and disease management.
	CxRising		Demographics Medical Pharmacy		✓	Rising Risk Indicators, Rising Risk Score, Probability of PMPM Change, Clinical Conditions, Risk Drivers, Drug Classes	

## Medicare Advantage and MSSP populations

Model Type	Model Name	Methodology	Input Required	Concurrent	Prospective	Outcome	Use
Risk Adjuster	MCCRxCPLN	Regularized regression	Demographics Pharmacy	✓	✓	Risk Scores, Drug Classes	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, Risk Drivers	
	MCRxCXPLN		Demographics Medical Pharmacy	✓	✓	Risk Scores, Clinical Conditions, Risk Drivers, Drug Classes	
	MCCRxOPTml	Optimized machine learning	Demographics Pharmacy	✓	✓	Risk Scores, Drug Classes	
	MCRDxOPTml		Demographics Medical	✓	✓	Risk Scores, Clinical Conditions, Risk Drivers	
	MCRxCXOPTml		Demographics Medical Pharmacy	✓	✓	Risk Scores, Clinical Conditions, Risk Drivers, Drug Classes	
Segmentation and Prioritization	MCRDxRising	Optimized machine learning	Demographics Medical		✓	Rising Risk Indicators, Rising Risk Score, Probability of PMPM Change, Clinical Conditions, Risk Drivers	Used to prioritize individuals based on expected change in costs from year one to year two; care and disease management.
	MCRxCXRising		Demographics Medical Pharmacy		✓	Rising Risk Indicators, Rising Risk Score, Probability of PMPM Change, Clinical Conditions, Risk Drivers, Drug Classes	

## 4CAst models for completion and annualization of risk scores available in v4.11

Model Type	Model Names	Methodology	Input Required	Concurrent	Prospective	Outcome	Use
Risk Adjuster	Rx4CAst Dx4CAst Cx4CAst MCCRx4CAst MCRDx4CAst MCRxC4CAst	4CAst models are available as XPLN or OPTml	Refer to input required for commercial and Medicare Rx, Dx, and Cx models	✓	✓	Completed and Annualized Risk Scores, Total, IP, OP, ER, Phys, Other, PCP, Rx, and BRx (for Medicare only) Clinical Conditions, Risk Drivers, Drug Classes (depending on the input)	Use when you need to estimate the final risk score for individuals based on a partial year of incurred claims or claims without full runoff.

## Social Deprivation Index model assists in the surveillance of social factors in healthcare based on geography

Model Type	Model Name	Methodology	Input Required	Concurrent	Prospective	Outcome	Use
Social Deprivation Index (See: <a href="https://graham-center.org/maps-data-tools/social-deprivation-index.html">https://graham-center.org/maps-data-tools/social-deprivation-index.html</a> )	SDXPLN	Index	Demographics, ZIP Code or Census Tract	N/A	N/A	Social Deprivation Index percentile score and contributing percentiles: below FPL, single parent family, no high school degree, no car, renter occupation, crowding, and non-employed.	The SDXPLN model provides socioeconomic information using member geographic data to enhance understanding of population health and social factors.

## Chronic and Complexity Indicators are available with MARA models that use medical data

Grouper	Feature	Methodology	Input Required	Concurrent	Prospective	Outcome	Use
Segmentation Grouper	Chronic Condition Indicators	Grouper	All MARA medical models			Groups MARA Conditions into Chronic/Non-Chronic Conditions based on AHRQ	Segment chronic members for DM programs.
	Complexity Indicators	Grouper	All MARA medical models			Complex Conditions are flagged	Identify and segment clinically complex cases for coordinating care, and care transition planning.

## Individual and Small Group On/Off the Health Exchanges are available in MARA Software

Model Type	Model Name	Methodology	Input Required	Concurrent	Prospective	Outcome	Use
Individual and small group on/off Exchanges - Risk Adjuster	Federal HHS-HCC	HCC	Demographics Medical Pharmacy	✓		Metal Level Total Risk Scores, HCCs, RxHCCs	MARA implementation handles data without pre-processing. Includes current and historical model years.

## Customized models – bring your own data, predict different outcomes

MyMARA™	Type	Methodology	Input Required	Concurrent	Prospective	Other Outcomes	Use
Model customization service	Based on your use case	Varies, can use XPLN, or OPTml models as foundation for customization	Use our industry research claims data, bring your own data, and/or use data sourced from third party vendors	✓	✓	Outcomes may include risk scores, readmission probabilities, or other outcomes based on need, or to address a program, such as capitation or VBP program that has unique features	When you want to predict other outcomes, or when your data/population is unique and calibrating a MARA model on your own data, with or without additional variables can improve predictions for the specific use case, such as Medicaid capitation payments.