

How to Select the Best Population Health Analytics Software for your Organization

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MEDICINE

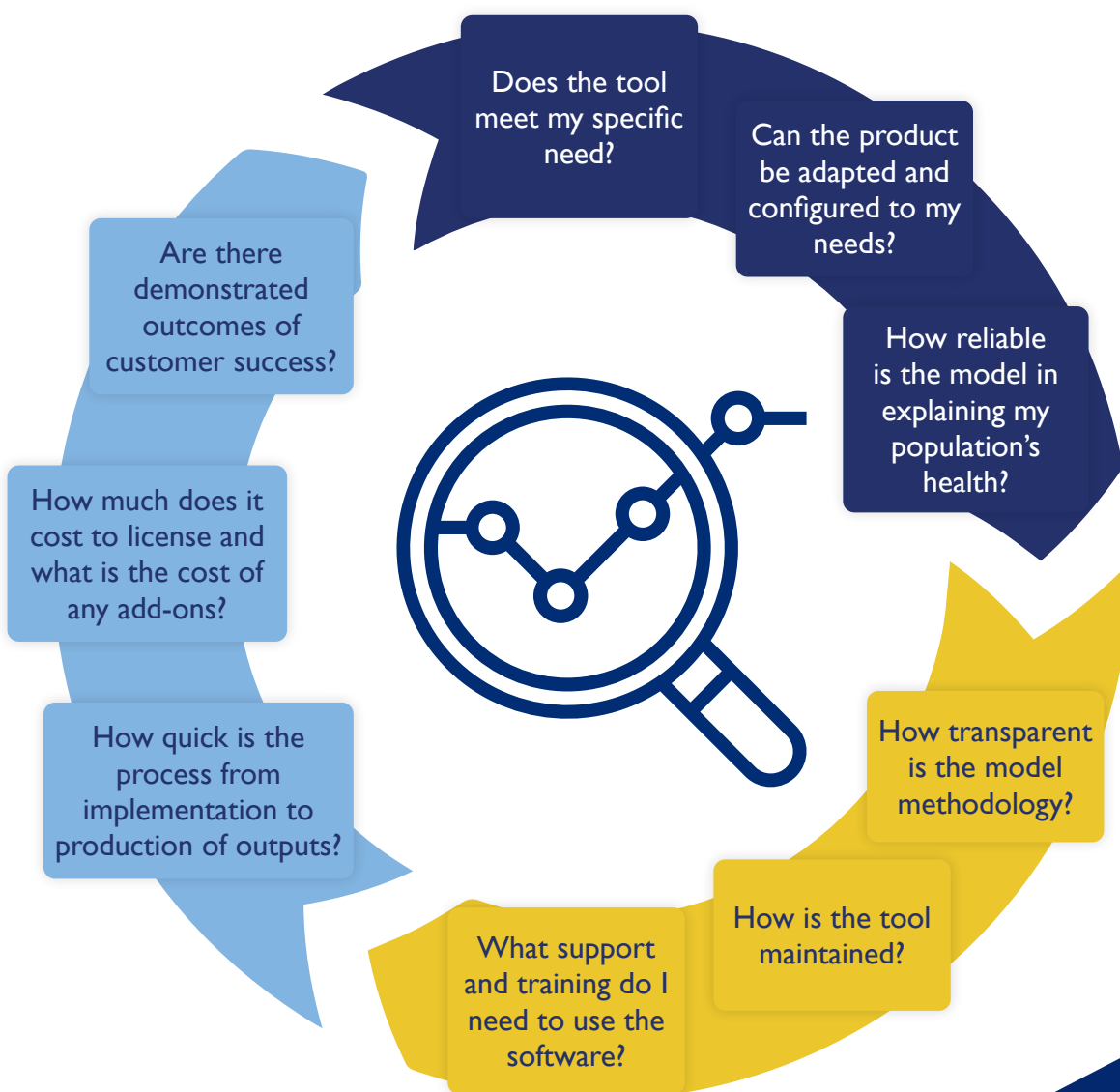
Introduction

To be successful in your population health management approach, you need the right set of population health analytics tools to analyze and identify your population's needs. Having a suite of tools that are both comprehensive and reliable in their methodology, yet simple and easy-to-apply, is key.

When acquiring and deploying new analytical software, there are many issues to consider, beyond just the purchasing cost. In this short guide, we help you to navigate these decisions as you evaluate the best population health analytics software for your needs.

How to Evaluate and Select Population Health Analytics Software

Deciding which population health analytics software is right for you can be a complex process. We recommend involving a team of people who will be involved in using the software and its outputs, including clinical teams, population health data analysts, IT teams and financial teams. Here are some suggested questions to consider asking:



What is population health analytics software?

Population health analytics (PHA) software offers a suite of tools, packaged together to process and make sense of your population's health care data, powered by underlying algorithms that classify and categorize clinical and cost data into meaningful groupings. The software is applied to help health care decision-makers, clinicians and financial teams manage the health of a group of individuals within a defined population.

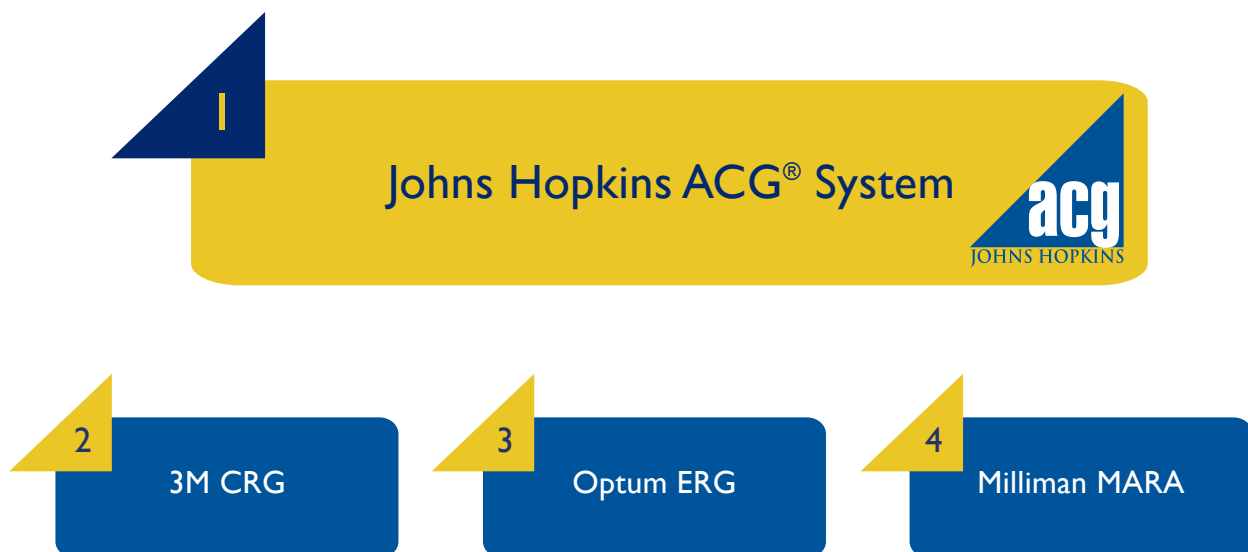
PHA software typically intakes some combination of diagnosis, pharmacy, social and activity or cost data to produce a set of descriptive and predictive models that compare a population's needs to a similar reference population.

Populations can be risk stratified based on their level of health risk or likelihood of experiencing certain health outcomes and then segmented into distinct groups based on specific health needs, individual characteristics or behaviors. Both risk stratification and segmentation can help population health management teams develop and refer individuals into tailored care management programs and prioritize resources for individuals who are at a higher risk of poor health outcomes.

Population Health Analytics Software Solutions

Many PHA solutions exist, including free models. The free models can be helpful for calculating risk scores but are often more limited in their application to population health management. Some organizations also choose to build tools in-house, leveraging internal skill-sets. This can be cost-effective upfront, though requires effort to maintain the models on a regular basis.

A multitude of commercial population health management solutions are available that use reliable and trusted population health analytics tools and methodologies. Here, we compare some of the most common commercial risk stratification and segmentation tools to help you understand which is best for your organization's population health management needs.



Johns Hopkins ACG System

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Best for comprehensive population health management, providing insights into clinical outcomes and financial performance. The ACG System incorporates clinical and social data to stratify and segment the population and predict individual health risks, disease burden and costs.

Developed and maintained by clinicians and experts at the Johns Hopkins Bloomberg School of Public Health, the tool has a 35+ year history and the methodology made publicly available via multiple publications. It is the most widely published and independently validated system.

The patient-centric approach is based on patterns of comorbidities and health care utilization, categorizing individuals into simple, mutually exclusive categories – Adjusted Clinical Groups (ACG). Clinical [patient segmentation models](#) enhance current and predictive cost risk models, using data from primary and secondary health care settings, including diagnosis and pharmacy data.

[Used globally](#) by government payers (Medicare, Medicaid, NHS); health systems, ACOs and large analytic software companies with validated use cases showing stability and reliability of models in over 30 countries [worldwide](#).

3M CRG

3M's CRG product is known for its clinical applications of population health management, including care planning and identifying patients with complex chronic conditions.

Developed over 20 years ago, Clinical Resource Groups (CRGs) group patients into a large number of complex, mutually exclusive categories based on individuals' clinical conditions and predicted health care needs. Risk stratification models analyze current and predicted health care utilization at the individual and group level.

Used globally by government organizations, hospitals and managed care organizations who value the clinical care management models.

Optum Symmetry ERG

Optum Symmetry ERG is known for predicting financial cost risk and planning resource utilization, based on specific patient events and episodes of care (e.g. surgery, cancer treatment).

Developed by clinicians, the Episode Resource Group (ERG) methodology has a 20+ year history and focuses on individual patient treatment episodes to analyze current and future health care utilization. The methodology combines clinical and procedural activity data to create medically relevant episode treatment groups (ETGs). Episode of care risk markers are used to create clinical risk profiles for each individual.

Used primarily by health insurance plans (payers) and health systems for assessing financial health cost risks across individuals' episode of care and for utilization management. Used predominantly in the U.S. with some limited international usage.

Milliman MARA

Milliman MARA is known for providing the financial analysis of a population and medical underwriting and actuarial rate setting at the individual and group levels.

Developed by clinicians and actuaries, the risk adjustment tools have been used by medical underwriters for over 15+ years. The suite of tools incorporates multiple different models and includes machine learning to analyze both current and predicted cost risk. Models rely predominantly on claims data.

Used primarily by payers (commercial, Medicare and Medicaid) for assessing health cost risks across individuals and groups, and by organizations focused on cost management and financial outcomes. Used predominantly in the U.S. with some limited international usage.



	ACG System	CRG	ERG	MARA
Application	• Clinical and financial aspects of population health management • Focus on patterns of disease and health care utilization at any level of the risk pyramid	• Clinical aspects of population health management • Focus on chronic conditions and high-risk/high-cost individuals	• Clinical episodes of care • Focus on financial planning and utilization management for clinical events	• Financial aspects of population health management, including actuarial rate setting • Focus on financial risk adjustment and resource allocation
Methodology	• Person-centric • ~100 mutually exclusive ACG categories • Applicable for all-age populations • Segmentation methodology: Patient Need Groups • Social needs markers	• Person-centric • ~1,400 mutually exclusive categories • Applicable for all-age populations	• Episode-centric • ~900 risk markers • Focus on episodes of care or specific events (e.g. surgery, cancer treatment)	• Person-centric • ~1,000 mutually exclusive categories • Rising risk models
Data inputs	• Dx codes from primary and secondary care data • Rx codes • Cost and activity/procedure data • Lx codes • Social data	• Dx codes • Rx codes • Procedure codes • Cost data	• Dx codes • Rx codes • Procedure codes	• Dx codes including Z-codes for social markers • Rx codes • Cost data
Use cases	• Clinical and financial risk stratification • Patient case finding • Predicting high-risk/high-cost individuals and events • Population segmentation and profiling • Measuring provider performance • Casemix adjustment • Risk-adjusted resource allocation	• Clinical risk stratification • Patient case finding • Predicting high-risk/high-cost individuals and events • Measuring provider performance • Casemix adjustment	• Clinical risk stratification • Episode-based care management • Resource allocation across episodes of care • Utilization management • Bundled payments	• Financial risk stratification • Rate setting (e.g. patient insurance premiums) • Patient case finding • Actuarial analysis

	ACG	CRG	ERG	MARA
Concurrent and predictive models	- Concurrent and predicted cost risk - Pharmacy cost - Hospitalization and readmission risk - Avoidable ED use (expansion of NYU model)	- Concurrent and predicted cost risk - Preventable admission - Potentially preventable ED use, admissions and services	Concurrent and predicted cost risk by episode of care	- Concurrent and predicted cost risk - Rising risk models
Model reliability maintenance	- Globally validated models with peer-reviewed publications - Continuous development out of Johns Hopkins Bloomberg School of Public Health - Dx and Rx mapping updates multiple times per year and recalibration of models	- Globally validated models with peer-reviewed publications - Methodology is updated annually	Real-world data	- Validated models with peer-reviewed publications - Regular Dx and Rx code updates
Deployment	- Locally on premises or run on customer cloud provider - Built-in after-sales customer support and training	- Local on premises or in cloud - Optional consulting services available for after sales support and training	Local on premises or in cloud	- Local on premises or in cloud - Optional consulting services available for after sales support and training
Customizable	- Local model recalibrations adapt to local geographies - Incorporates SNOMED, ICD-10 AM, ICPC data feeds	Integrates with other 3M analytics products	Integrates with other Optum analytics products	- Modular licensing - Customized predictive models
Market segments served	- In use globally across 30+ countries - Government organizations, commercial payers, health systems and analytics software companies - Academic researchers	- In use globally - Government organizations, commercial payers, hospitals - Academic researchers	- Government organizations, health systems, commercial payers - Some limited international use	- Government organizations, commercial payers - Some limited international use

To learn more about the ACG System, please contact acginfo@jh.edu.

ABOUT THE JOHNS HOPKINS ACG SYSTEM:

The ACG System is a flexible, transparent set of tools developed and validated by scientists and clinicians at the Johns Hopkins Bloomberg School of Public Health. Customers use the ACG System to segment their patient populations and to process their organization's existing medical, pharmacy and lab data to generate clinical risk markers and predictive models at the population and patient level.

The ACG System provides health care analytics teams with the insights they need to inform rapid decisions about patient care, resource planning and service design.

