



FIVE STRATEGIES

TO IMPROVE POPULATION HEALTH
USING THE ACG SYSTEM

The Johns Hopkins ACG® System is relied on by health systems, health plans, accountable care organizations, health care analytics companies and others across the globe for analytics and insights into population health. This guide explains five key features in the ACG System that can help you evaluate and segment your unique patient population with the goal of providing better care.

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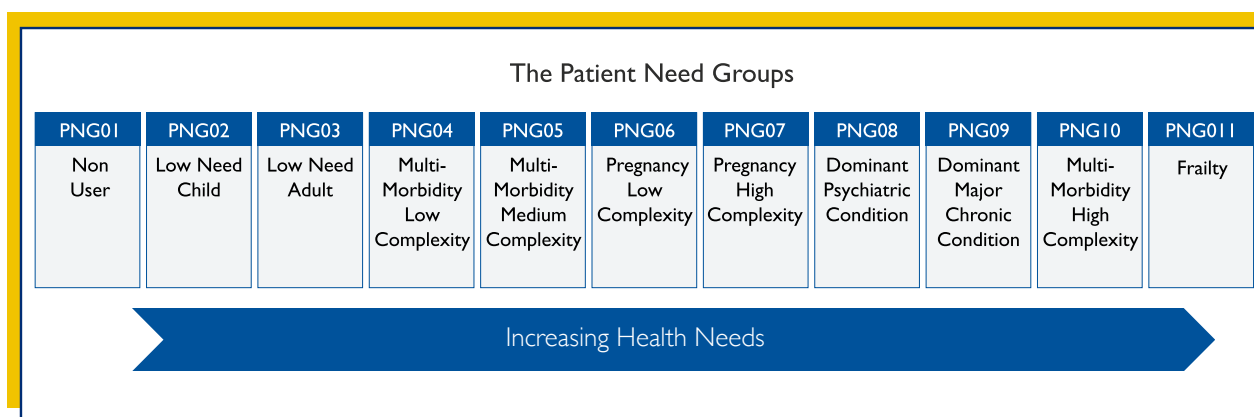
STRATEGY #1

SEGMENT YOUR POPULATION BASED ON HEALTH NEED

The ACG System allows you to stratify your population based on their unique health needs. Segmenting patients gives you incredible insight into the current and emerging needs of a narrow population, instead of the broad needs of a larger group.

The ACG System's [Patient Need Groups \(PNGs\)](#) are available exclusively within the System and assign patients into one of 11 mutually exclusive, hierarchical and clinically-relevant categories. PNGs allow users to enhance their population health strategy creation, implementation and monitoring using an intuitive new lens into the unique patterns of patient health needs.

This grouping is an innovative approach to patient categorization from Johns Hopkins. PNGs ensure patients aren't reduced to just one disease (heart failure) or one incident (a hospital readmission). PNGs consider the whole person and their medical history, among several factors. The image below shows how PNGs represent an ascending set of health needs, beginning with low-need individuals and rising to multimorbid and frail.



Each individual has unique health needs, requiring a tailored approach to improving overall health. Our PNG methodology allows ACG System users to gain deep insights and take focused action. As patients move in and out of various levels of need on the PNG scale over the course of their life, the ACG System assigns them to a group appropriate to their current and future predicted needs.

THE WIN



Categorizing a population based on their needs is critical to understanding trends and deploying an effective population health strategy. Patients with rising health needs can benefit most from actionable interventions and other strategies to prioritize appropriate and high-quality care. Our PNG segmentation, in conjunction with other key ACG System features (such as Emergency Department Visit classification), helps you understand where to quickly focus your population health strategy for optimal, effective results.

STRATEGY #2

IDENTIFY ACTIONABLE OPPORTUNITIES

The ACG System's [Care Modifiers](#), overlayed on PNGs, are a proprietary feature that identifies an individual's traits with actionable opportunities for intervention. For every impactable factor, there is an opportunity to improve care and patient health.

Care Modifiers add additional stratification and granularity so users can identify issues that are modifiable – such as substance use, tobacco use, severe polypharmacy (or the simultaneous use of multiple prescription drugs), care coordination and lack of primary care. If addressed, these patient attributes can generate meaningful improvement in overall patient health and prevent individuals from moving into a higher PNG category.

- » Patients using tobacco can benefit from a smoking cessation program.
- » Those with impactable cardiometabolic risk factors, such as hyperlipidemia or pre-diabetes, have opportunities for intervention to improve their care and quality of life.

THE WIN



When forming a population health strategy, it can be difficult to discern where to make meaningful advances in the patient population. By addressing actionable opportunities, doctors and patients can see real improvements in patient health. These indicators can also be used to refine a care management or outreach strategy, focusing on where actions can be taken to help patients live healthier lives.

STRATEGY #3

ANALYZE MEDICATION USE AND OPPORTUNITIES

The ACG System's Medication Management Suite includes a number of beneficial pharmacy-driven markers to examine medication use, predicted cost and utilization. These measures provide robust information individually, or in combination with, diagnosis, lab results or other factors.

Medication Possession Ratio (MPR) is a standard measure using pharmacy administrative data to calculate medication adherence. This marker looks at the ratio of days' supply to total prescribing days. MPR is calculated as the total number of days for which medication is dispensed (excluding the final prescription) divided by the total number of days between the first and last prescription.

- » MPR values of $\geq .80$ indicate good adherence.
- » MPR values > 1.0 indicate the patient consistently refills prior to exhausting supply on-hand.
- » Consistent MPR values substantially > 1.0 could indicate potential overuse.

Continuous, Single-Interval Measure of Medication Availability (CSA) is the ratio of days' supply to days until the next prescription, averaged across all prescriptions. CSA is calculated for patients taking at least one chronic medication.

- » CSA values > 1.0 could indicate the patient consistently refills prior to exhausting the supply on hand.

Proportion of Days Covered (PDC) is the ratio of the number of days' supply divided by days between first prescription fill and end of observation period. PDC indicates the rate of possession from the first dispensing event in the period through the observation period end date. Within the U.S., PDC is the most common measure for adherence calculations of medications that require chronic administration.

While MPR and CSA measure the distance between fills, PDC considers the time period from the first prescription through the end of the observation period, regardless of the timing of the last prescription fill.

- » The closer the PDC value is to 1.0, the higher the percent of days within the period that the patient had medication available (the rate of possession).

Additionally, Care Modifiers can identify **polypharmacy** (5+ active ingredients) and severe polypharmacy (10+ active ingredients) in a patient. Patients with high medication needs are profiled using numerous opioid use measures within the ACG System, such as dosage flags, use without medical indication and concomitant use. This feature helps providers identify individuals ripe for intervention, for example, patients experiencing severe polypharmacy have a higher likelihood of falls, and could benefit from a de-prescribing initiative.

The ACG System's novel **Medication Complexity Score** offers yet another unique view into a patient's medication usage and overall risk. Patients are scored in consideration of their overall regimen complexity (medication count, dose form and doses per day), number of risky medications (those with high risk of complications), and highly complex medications in order to help predict adverse outcomes. Higher medication complexity scores are tied to patients with higher medication gaps, those more likely to be opioid dependent, and those with higher medication costs or more readmissions.

THE WIN



The ACG System's Medication Management Suite is a proprietary feature that provides System users with a comprehensive view of patient medication use. Insights gleaned from the Medication Management Suite support providers in improving their patients' medication adherence, optimizing medication therapies, and preventing polypharmacy and adverse events and outcomes. This unique functionality also supports a provider in monitoring the success of a treatment plan or intervening appropriately.

STRATEGY #4

PREDICT FUTURE RISK

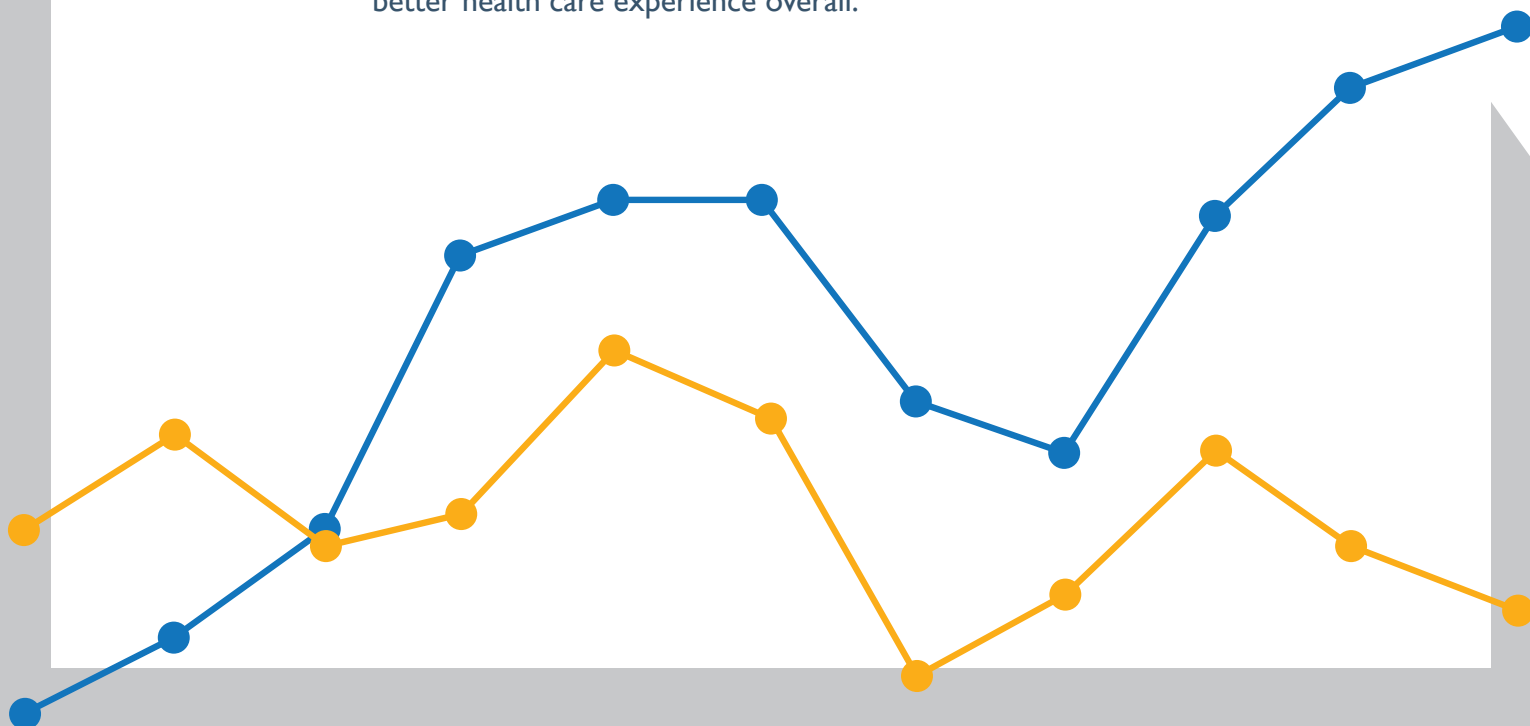
Risk stratification within the ACG System allows you to view a population's predicted health risk for a certain time period. This helps providers zero-in on patients at highest risk for hospitalization, ER visits or high pharmacy use. By stratifying the population based on these key risks, the ACG System allows providers to employ differing strategies for engaging patients based on their risk level – such as in preventative primary care, to improve quality of life or combat soaring health care costs.

Predictive models determine the future need of an individual. The ACG System includes models that predict the likelihood of an event within the next 12 months, based on a patient's historical data. A high predictive score for likelihood of hospitalization can signify a greater chance of a medical episode over the next year. Additionally, System users can set custom cut-points to risk stratify their populations on predicted risk. This feature can be used in combination with other ACG System features to easily identify high-need high-cost patients.

THE WIN



Risk stratification benefits providers and health systems by helping them to deploy targeted interventions to improve health outcomes and lower cost. By controlling cost, health care organizations are able to control (and even prevent) unnecessary care. Additionally, the ACG System helps providers identify at-risk patients before an event happens, so they can potentially avoid unnecessary utilization or negative outcomes, lowering cost for the organization and the patient alike and providing a better health care experience overall.



STRATEGY #5

ASSESS YOUR POPULATION'S SOCIAL DETERMINANTS OF HEALTH

Social Determinants of Health (SDoH) – where we live, how we're raised, where we go to school and what we eat – are increasingly recognized as essential factors that influence health outcomes. Growing evidence reveals that medical care alone cannot improve health at a population level; SDoH play a large role in our overall health and well-being. When environmental factors that surround certain communities are not conducive to a healthy lifestyle, future medical issues can arise as a result.

The ACG System's [Social Need Markers](#) and [GeoHealth](#) functionalities create a meaningful view of individual attributes that are relevant for population health.

Social Need Markers were developed to give users a comprehensive view of social needs for individuals within their populations. These markers capture pressing health care needs for an individual, measuring social need and barriers to optimal health, and can be used alone or with other ACG System features.

Social Need Markers consist of five domains that capture some of the most documented social needs of individuals coming in contact with health care systems. Each social need domain is a separate marker to identify the prevalence for individuals within their population.



Social



Education



Health Care System



Economic



Physical Environment

Working alongside the ACG System's Social Need Markers is **ACG GeoHealth**. This unique component uses a patient's address to uncover SDoH risks related to their geography. ACG GeoHealth provides cleansed and curated data, along with in-system capabilities, to:

- » Identify the concentration of disparities in patient populations
- » Measure health disparities, outcomes and cost based on geographic variables
- » Develop needs-based plans to provide essential care in a geographically targeted way
- » Understand disease prevalence, quality of care and utilization trends by geography
- » Support resource allocation, case management and community health worker activities

THE WIN



Understanding SDoH enables organizations to craft an intelligent and accurate population health strategy and can be pivotal to unlocking areas for better patient care and cost savings. Social Need Markers and ACG GeoHealth provide valuable insights into how a patient's geography impacts their health. Users can measure outcomes based on geographic variables, develop programs and partnerships targeted to neighborhoods, support appropriate resource allocation and gain more understanding about their patient population.

CONCLUSION

The ACG System's toolkit allows health care organizations and providers to understand their population in multiple ways. **Opportunities for proactive outreach and positive impact increase efficiency, improve quality of care and lower costs.**

PNG segmentation allows users to understand the full volume of health needs of their patients at the individual, group or population level. Individual patients at highest risk for negative outcomes are identified using risk stratification, and when combined with Care Modifiers, allow providers to intervene on patients with impactable opportunities to avoid a negative future outcome.

Information from Social Need Markers and ACG GeoHealth allows users to understand the SDoH factors that impact a population's health status, disease frequency and health outcomes. This information is needed to formulate a strategy to address these factors and drive action. The addition of ACG GeoHealth to the existing suite of ACG System tools is a significant advancement to help users achieve better health outcomes, reduce disparities and better serve their populations.

Through this layered approach, System users can segment an entire patient population down to a smaller impactable population and develop strategies to help those patients live healthier lives.

Best of all, these features allow ACG System users to stay a step ahead of their population's needs with an advanced view of segment-level performance and trends, improving resource allocation by directing precise efforts towards the specific patients most likely to benefit.





ABOUT THE **ACG SYSTEM**

The Johns Hopkins ACG System is the world's leading population health analytics software. The ACG System continues to evolve throughout the U.S. and across the globe, from commercial health plans and governments to health systems and large employers. The beauty of the ACG System is its ability to combine data from an array of sources to reveal powerful insights that go beyond just medical records.

By identifying risk and tracking patients over time, the ACG System can help you plan ahead and reduce health care costs – goals that are especially valuable to risk-bearing health systems and provider organizations. Most importantly, the ACG System allows you to be proactive, rather than reactive, when it comes to your population's unique health care needs. The ACG System helps you combine a population-level perspective with patient-level behaviors and conditions. And because the ACG System is incredibly flexible and responsive to new information, you can rest assured that no matter what comes next, the ACG System will continuously adapt to your health care management needs.

To learn more about how the ACG System can support your organization, visit: hopkinsacg.org or contact us at acginfo@jh.edu. If you are an ACG customer, reach out to your Account Manager.

