

# JOHNS HOPKINS ACG® SYSTEM PATIENT NEED GROUPS SEGMENTATION



## How Johns Hopkins HealthCare Used the ACG System's New Patient Need Groups to Help Their Case Management Team Focus on Actionable Patient Groups

Johns Hopkins HealthCare (JHHC), the managed care division of Johns Hopkins, has been a long-time user and test site for the Johns Hopkins ACG System. JHHC's clinical and financial analytics teams routinely use the ACG System for risk prediction, disease tracking, casemix adjustment and patient identification for disease and care management purposes, among others.

### The Challenge

In 2019, the JHHC clinical analytics team wanted to take their population monitoring a step further. They could accurately identify patients at high risk of cost, admissions or readmissions, but found that prediction scores needed to be more meaningful for the case management team. So JHHC analysts decided to test the ACG System's Patient Need Groups (PNG) approach, to help clinicians understand population needs through a segmentation lens – including why a patient was identified as high risk – and to assist case management and clinical leadership in focusing efforts on more actionable patient groups.

### The Solution

The ACG System's PNG segmentation feature is an innovative approach to patient categorization. Patients have unique health needs driven by their medical conditions and social factors, requiring a tailored approach to improving their health. The PNG methodology assigns individuals into mutually exclusive groups, allowing ACG System users to gain deep insights and take focused action. Our PNG segmentation, in conjunction with other key ACG System features (such as Emergency Department Classification), will allow users to understand where to quickly focus their population health strategy.

### The PNG Module Has Three Components:

#### Patient Need Groups:

a core set of 11 population segments

#### Care Modifiers (CM):

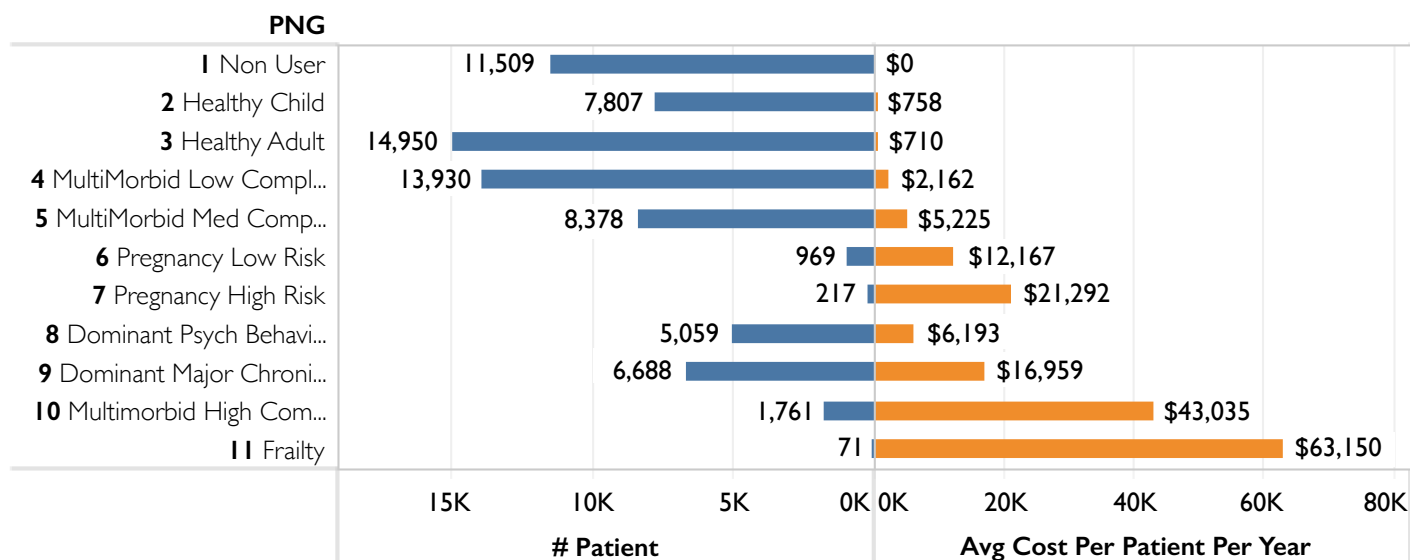
individual traits with opportunities for clinical intervention

#### Predicted Total Cost Risk:

levels used for insightful overlay of predicted cost with current health needs

To better inform medical management and strategic planning, JHHC's analytics team developed a production dashboard using the PNG segmentation model as its analytic backbone. The dashboard provided clinical leadership with at-a-glance understanding of population needs for each of four product lines, pertinent financial and utilization metrics and highlights distinct opportunities to improve care. Combining the PNG and Care Modifier features, financial information and already-available ACG System metrics created a holistic view used for population monitoring and strategic planning.

## Patient Count and Cost



This new approach allowed clinical leadership to understand population distribution across health need groups and easily understand the volume of patients in high-needs segments who were driving the plan's cost and utilization.

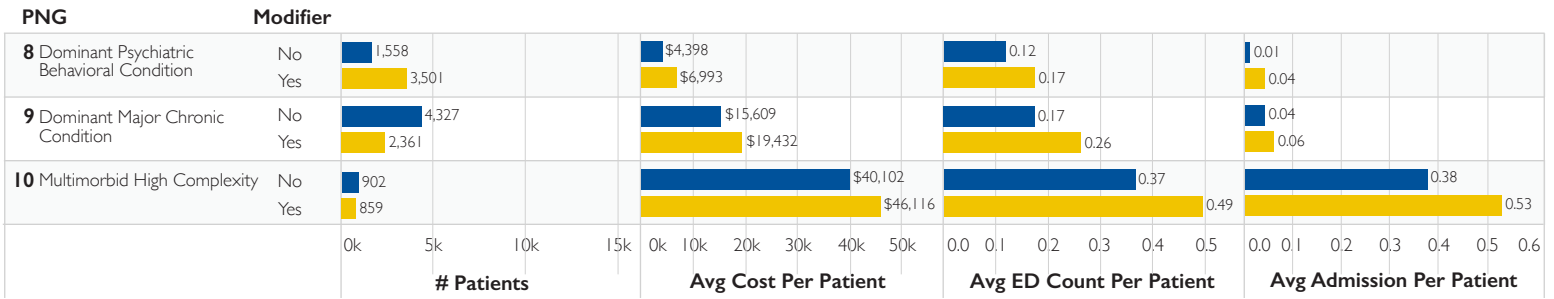
Across populations, patients with highly complex, multimorbid diseases account for the most resource use, especially when measured by avoidable and unplanned utilization. Patients with a single, dominant major chronic condition also demonstrate high costs. Frail patients are a cost driver in Medicare, but less so in commercial and Medicaid populations.

## Describing Actionable Opportunities with Care Modifiers

To meet the leadership's need to understand actionable, patient-specific opportunities to improve health and reduce cost, the analytics team leveraged the ACG System's PNG Care Modifiers component to visualize the frequency of these impactful factors within population segments. Highlighting the difference between PNG segments shows, at a glance, the cost magnitude driven by the Care Modifier – a potentially impactful patient factor. Within Johns Hopkins, these factors drove clinical decision-making and allocation of resources.

**Care Modifiers are impactful factors that can be leveraged to filter down and further stratify a particular PNG segment.**

## Impact of Non-Major Psychiatric Condition on Cost/Utilization by Segment:



For example, commercial population patients with a mental health condition Care Modifier demonstrated higher costs, and higher Emergency Department visits and inpatient admissions within each PNG. Understanding the magnitude of mental health conditions' impact on overall health outcomes led Johns Hopkins HealthCare to offer the [Balance™ mental health program](#) to its own employees.

## Conclusion

For Johns Hopkins HealthCare, a dashboard built upon the ACG System's PNG segmentation model provided key insights into the overall population's varying hierarchy of clinical need and allowed for rapid drill-down into a sub-population's specific risk factors. Having this information at decision makers' fingertips allows for rapid identification of how to meet the population's need.

Overall, PNG segmentation model-derived dashboards provide critical, quick-look analytics to health care organizations that support clinical management development. By combining PNG population segments and Care Modifiers with other outputs from the ACG System, a health care organization can isolate populations and derive clinically meaningful and actionable insights within a few clicks, driving their clinical management strategy towards precise goals that are reflective of their unique population.

To learn more about PNGs and the ACG System, please visit [HopkinsACG.org](https://HopkinsACG.org), or email [info@HopkinsACG.org](mailto:info@HopkinsACG.org).  
If you are a current ACG System user, please contact your account manager.