JOHNS HOPKINS ACG® SYSTEM

Reducing Emergency Department Visits in South Africa

The Challenge

Discovery Health is a large medical scheme administrator in South Africa providing administration and managed care services to over 3 million beneficiaries. They believe primary care sits at the center of all strong health care systems and should offer the first point of contact for their members.

However, in the largely fragmented, hospital-centric, private health care system of South Africa, care is rarely driven by the primary care provider. This not only negatively impacts patient outcomes but also limits the system more broadly in its ability to offer value-based care at an acceptable cost. The use of an emergency department as a first point of care before consulting a primary care provider has been a specific challenge in the South African health care system.

Emergency department visit rates and the consequent admission rate from emergency department visits have been increasing. From 2010 to 2015, there was a 26% increase in the admission rate to hospitals via emergency departments.

A simple model adjusting for age, gender and the presence of a chronic condition on 2010 data showed that there was a potential savings opportunity of 500 million Rand ($33 million U.S. dollars) if better utilization of primary health care was encouraged.
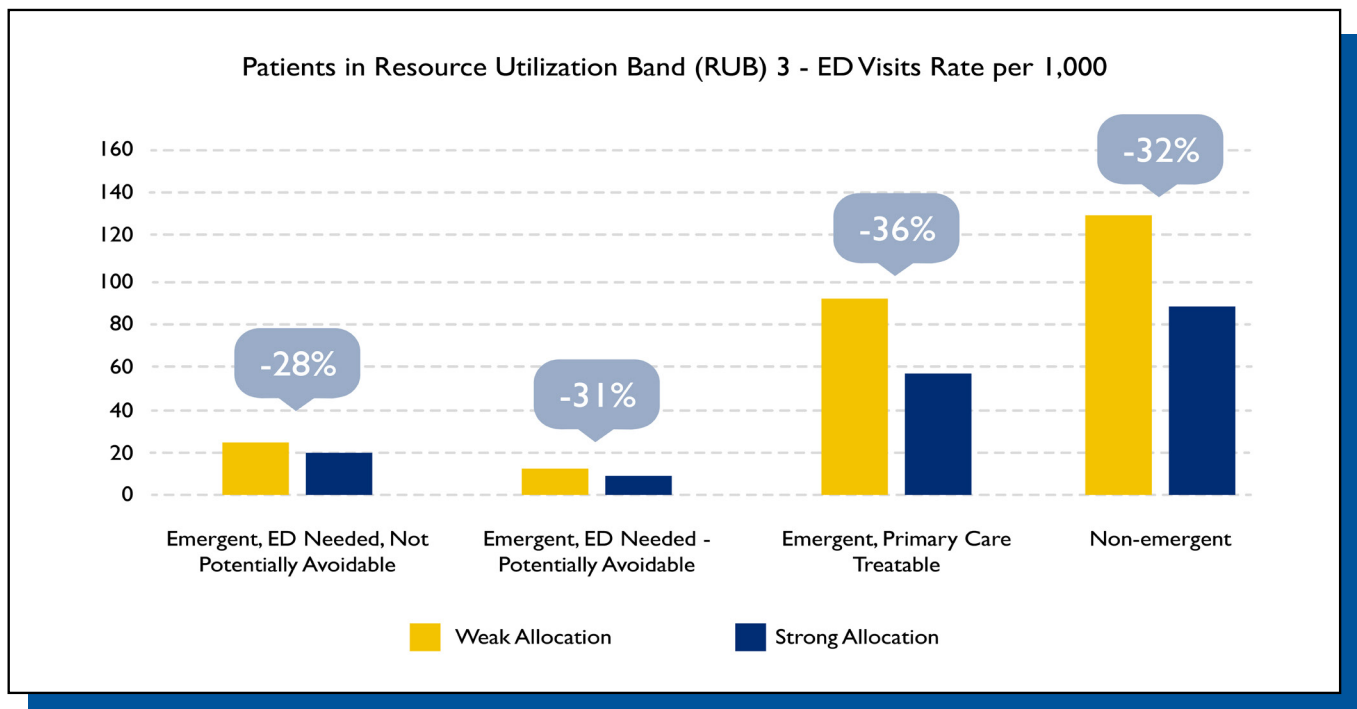
The Solution

Discovery Health wanted to find a way to improve patient access to Primary Care Providers (PCPs) to both improve health outcomes for patients and keep costs affordable by reducing unnecessary Emergency Department (ED) visits. The use of the ACG System and its ED classification system played a role in helping Discovery achieve their objective.

The team at Discovery developed a model calculating the expected admission rate for members visiting an emergency department. Part of this model utilized pre-existing ACG System variables. The team then examined the nature and strength of the relationship between each member and a primary health care provider based on how much of their care they sought from the PCP. The team examined whether a stronger relationship with a PCP impacted emergency department visits and subsequent hospitalizations.

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The team found that members allocated strongly to a PCP (those with a high number of PCP interaction/visits) had a lower-than-expected admission rate to the ED. In fact, there was a significantly lower amount of ED visits per 1,000 claimants for strongly allocated patients compared to weakly allocated ones.

This is illustrated in the graphic below.

Patients in Resource Utilization Band (RUB) 3 - ED Visits Rate per 1,000

Weak Allocation
Strong Allocation

The ED classification system within the ACG System was used to validate the outputs of this model and to gain further insights on the reasons patients visited the emergency department and whether these visits were avoidable.

With this key finding in hand, Discovery Health launched a new benefit plan which required members to see a primary care provider first before they could "unlock" access to secondary and tertiary levels of care. This strategy dovetailed with Discovery's philosophy that primary care sits at the center of all strong health care systems and should be the first point of contact for its members. So far, the strategy has some promising findings.

As shown in this graphic, patients in Resource Utilization Band 3[1] (RUB 3) - those with a moderate level of complexity - who used Discovery's plan had a significant decrease (up to 64%) in ED visits per 1,000 claimants compared to those using a comparative plan not requiring PCP visits.

Patients in RUB 3 - ED Visits Rate per 1,000
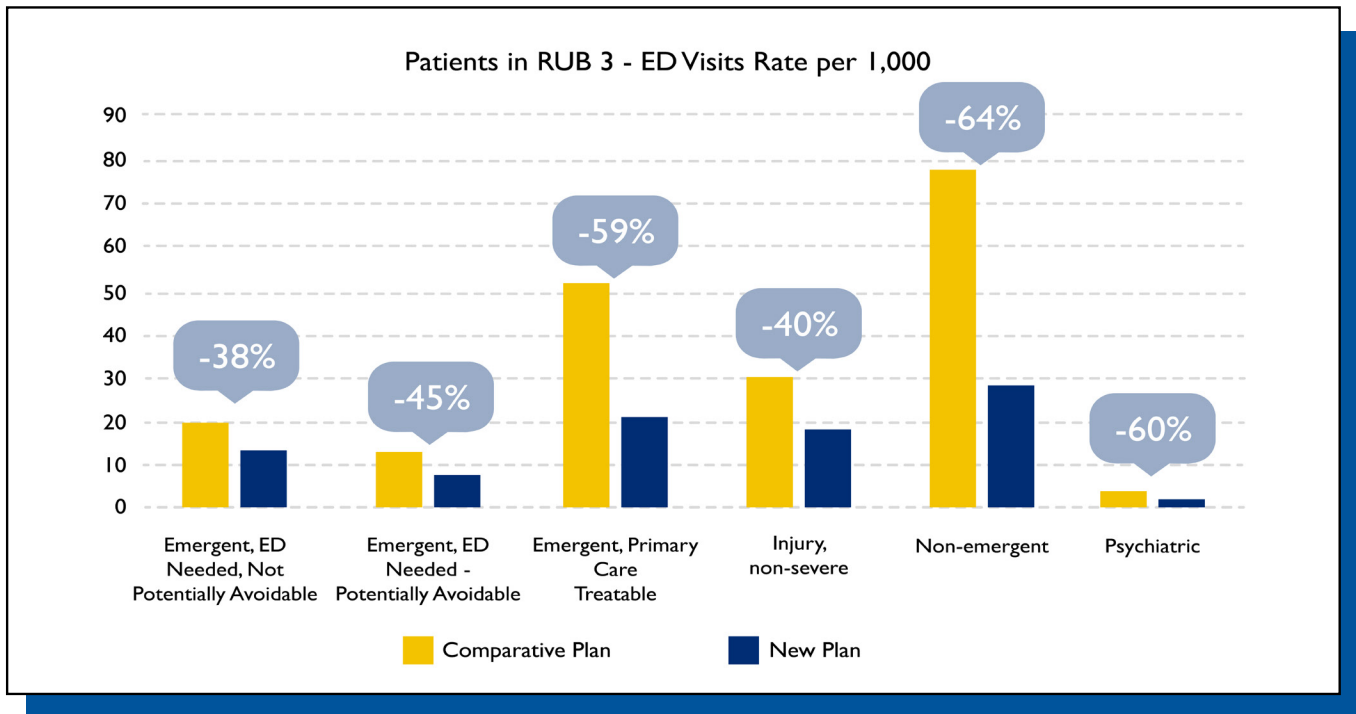
Conclusion

Discovery Health's innovative work combining existing ACG System variables and the new ED classification system paid off: their health care plan not only increased access to primary care for their members, but it also reduced unnecessary ED visits, maximizing health resources and keeping costs lower for everyone.

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A closer relationship with a primary health care provider leads to a reduction in emergency department visits and subsequent admissions from the emergency department, resulting in better patient outcomes and lower health care costs.

- Lizelle Steenkamp, Head of Risk Intelligence Discovery Limited

In 2020, this project won Discovery Health the prestigious Starfield Award, presented in honor of Dr. Barbara Starfield for projects that use the ACG System to address multi-morbidity in patients and populations, reduce disparities in the delivery of primary health care or improve population health. Read more about Discovery Health's award-winning project here.

This is just one example of the ACG System's ED Classification tools at work.
Read more about our ED Classification tools here.

[1]Resource Utilization Bands (RUBs) are collapsed versions of the ACG categories and as such, group people together who have similar morbidity profiles. There are five RUBs ranging from 1 (healthy-users) to 5 (very high degree of morbidity).

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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. The ACG System is used by Medicare, Medicaid and commercial health plans in the U.S.; health care providers; and technology companies. 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.

To learn more about the ACG System, please visit hopkinsacg.org or email info@hopkinsacg.org