# Improving Population Health Outcomes for Complex Care Patients Through Segmentation and Risk Stratification

## At a Glance

In 2020, Slough Clinical Commissioning Group (CCG) — now part of Frimley Integrated Care System (ICS) — used the Johns Hopkins ACG® System to analyze their population and identify high-cost patients to understand what was driving health care utilization. By applying risk stratification and segmentation tools, they were able to group patients based on similar health needs and implement a targeted complex care management program, reducing unnecessary hospitalizations and emergency department visits.

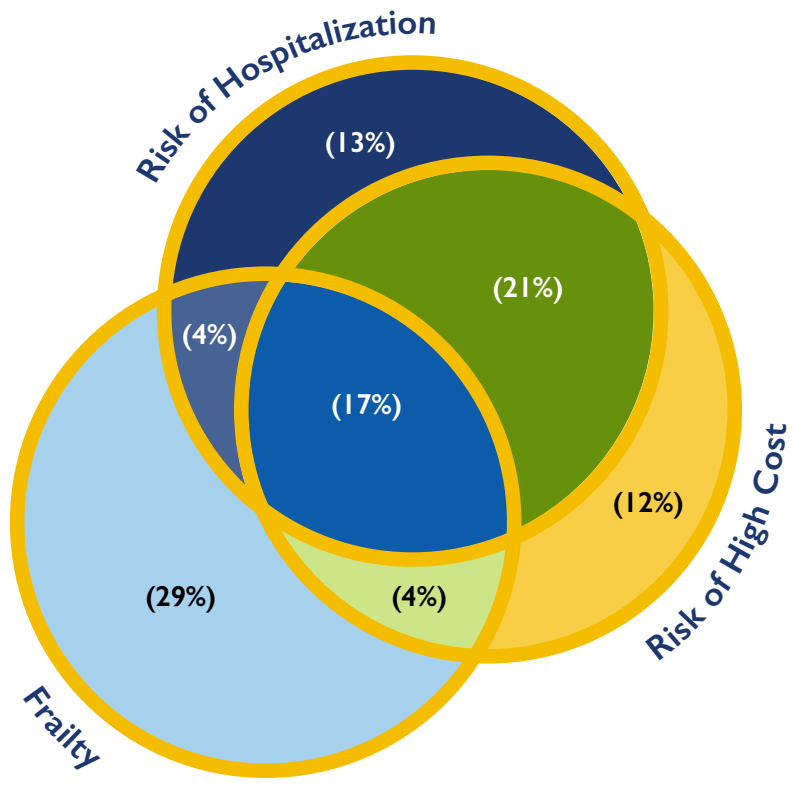
## Challenges

Slough CCG sought to understand which health risks were driving high costs and hospitalizations and whether these were primarily related to frailty or other risk factors. The CCG also wanted to understand whether frailty was always associated with high costs, in order to evaluate the effectiveness of a National Health Service (NHS)-led initiative to improve care and reduce costs for people living with frailty.

## Solutions

Using the ACG System, Slough CCG segmented their population and discovered that **multimorbidity was a key driver of both high cost and risk of hospitalization,** more so than age or any single high-impact chronic condition such as diabetes or heart failure. They also examined the relationship between frailty, risk of hospitalization and risk of high cost. The insights from this analysis produced a 'Venn diagram of need' and showed that if they only focused an intervention on patients with severe frailty, they would miss nearly half the patients who were at risk of high cost or hospitalization.

Slough CCG identified the 17% of patients with overlapping frailty, hospitalization risk and high costs and then invited them to enroll in a complex care management program. Approximately 600 patients enrolled, receiving longer visits with their GP every three weeks to address and prevent emergency visit risk factors and support self-care. This resulted in reduced hospitalizations and ED visits.




## Key Metrics

- Analysis showed that the top 5% of sickest patients accounted for over 40% of total costs
- After just 18 months in the complex care program:
  - o Unplanned hospitalizations were reduced by 18%
  - o Emergency department visits were reduced by 19%
- The program was expanded further to cover 450,000 patients

## Benefits

1. **Better Patient Outcomes** – Targeted care interventions based on patients' needs provided more tailored and cost-effective support, reducing avoidable hospital visits and strengthening the patient relationship through more intensive and frequent GP visits.
2. **Cost Savings** – Reduced hospitalizations and emergency department visits lowered overall health care expenditures for the highest-cost patients within the system.
3. **Scalability** – The success of the pilot program led to an expansion, proving the effectiveness of segmentation-based care management across multiple populations.
4. **Prevention** – Anticipating and managing risk factors prevented avoidable emergency visits and hospitalizations.

*To learn more about the ACG System, please visit hopkinsacg.org or email acginfo@jh.edu.*

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