



POPULATION SEGMENTATION CASE STUDY – GOVERNMENT

CASE STUDY

“Costs and resource use increase as the degree of frailty increases, but not all frail patients are high cost and not all high risk patients are frail.”

– Alan Thompson  
Johns Hopkins HealthCare Solutions

**THE ENGLISH NATIONAL HEALTH SERVICE (NHS)** is the publicly-funded national health care system. The services provided by the NHS are commissioned by regional Clinical Commissioning Groups (CCGs), which decide which services should be resourced in their local communities. The CCGs use the Johns Hopkins ACG® System output to help them understand their communities and connect patients to appropriate care.



### OVERVIEW

Three CCGs analyzed their local populations as part of a new national initiative to address the care of people who are frail. In parallel, the NHS promoted the use of the Electronic Frailty Index (eFI), a cumulative deficit model that categorizes people by their degree of frailty. This study examined the relationship between frailty and multi-morbidity and their impact on costs and resource utilization.



### CHALLENGES

The initiative to support the frail population stems from evidence that resource use increases with an increasing degree of frailty and that addressing frailty in a population would reduce costs and resource use. However, the CCGs posited that frailty is only one of the drivers of cost, in addition to other factors, including multi-morbidity.



### METHODS USED

The CCGs conducted a cost and utilization analysis using the following approach:

- Segmented the population into five categories based on their degree of multi-morbidity using the ACG System Chronic Condition Count
- Segmented the population into the four frailty categories used by the Electronic Frailty Index
- Explored resource use and future risk of adverse events such as unplanned hospitalization and mortality in the next 12 months



### RESULTS

The segmentation analysis showed that multi-morbidity, more than frailty, was the main driver of unplanned hospitalization and high costs. As a result, the three CCGs gained insights into their populations, which highlighted that they should focus their attention on the highest risk and highest cost groups: populations who are not frail, but multi-morbid, as well as those who are frail and multi-morbid, and require intensive support and proactive management.



### RECOMMENDATIONS

As a result of the population segmentation analysis, the three CCGs changed their approach to managing their populations and prioritized the need to effectively match care programs to appropriate population segments, based on their needs.