

# **A STATISTICAL ANALYSIS PLAN TO UNDERSTAND OSTEOARTHRITIS PATIENT JOURNEY BY LINKING MEDICARE CLAIMS ACROSS CARE DELIVERY SETTINGS**

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## **Objectives**

To design a statistical approach to understand the journey of knee osteoarthritis (OA) patients through different care delivery settings, how resource use patterns shift over time, and key drivers of disease burden.

## **Methods**

We conducted extensive literature research on relevant health economics and cost publications. Most studies were conducted cross-sectionally under one specific care delivery setting. Complete patient journey and associated resource use across different settings such as primary care and outpatient remain unclear. Medicare Limited Data Sets (LDS) included deidentified patient-level claims data. We reviewed data dictionaries of LDS and designed a statistical analysis plan to derive resource utilization of knee OA patients in primary care, home health, inpatient, outpatient, and skilled nursing facility settings.

## **Results**

All LDS files share the same patient ID that can be used to pool all claims data into a master resource use dataset. Knee OA patients are identified through relevant ICD-9 codes in diagnosis records. A control population with comparable demographics to the OA population is generated through propensity matching algorithm. Resource utilization is estimated on both claim level and patient level. On the claim level, the analysis derives hospital charge amount, reimbursed amount, length of stay, surgeries, referrals, and diagnosis-related group information. On the patient level, the resource use by the OA population when compared to the control group is calculated. A regression analysis uses demographics, comorbidities, provider, and treatment as independent variables and disease burden as the dependent variable. The aforementioned analyses is to be conducted on 2 sets of data files that are 5 years apart to account for any shifts in care delivery patterns over time.

## **Conclusions**

Assessing linked Medicare claims across delivery settings can help produce quantitative evidence for payers to better understand, prepare for and manage the journey in knee OA treatment among Medicare beneficiaries.