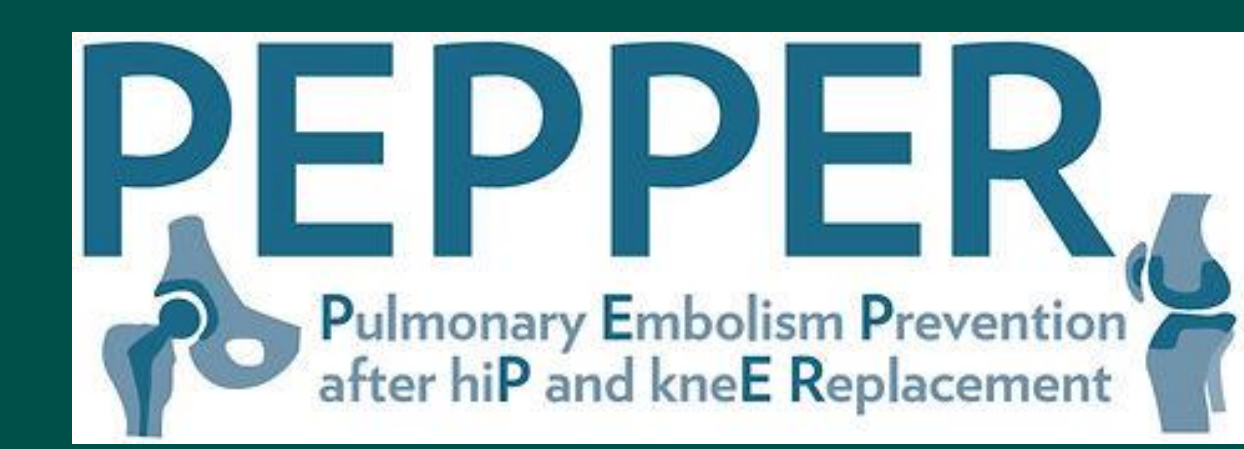


The Impact of Patient Travel Time and Rurality on Outcomes After Total Joint Arthroplasty

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CONTEXT

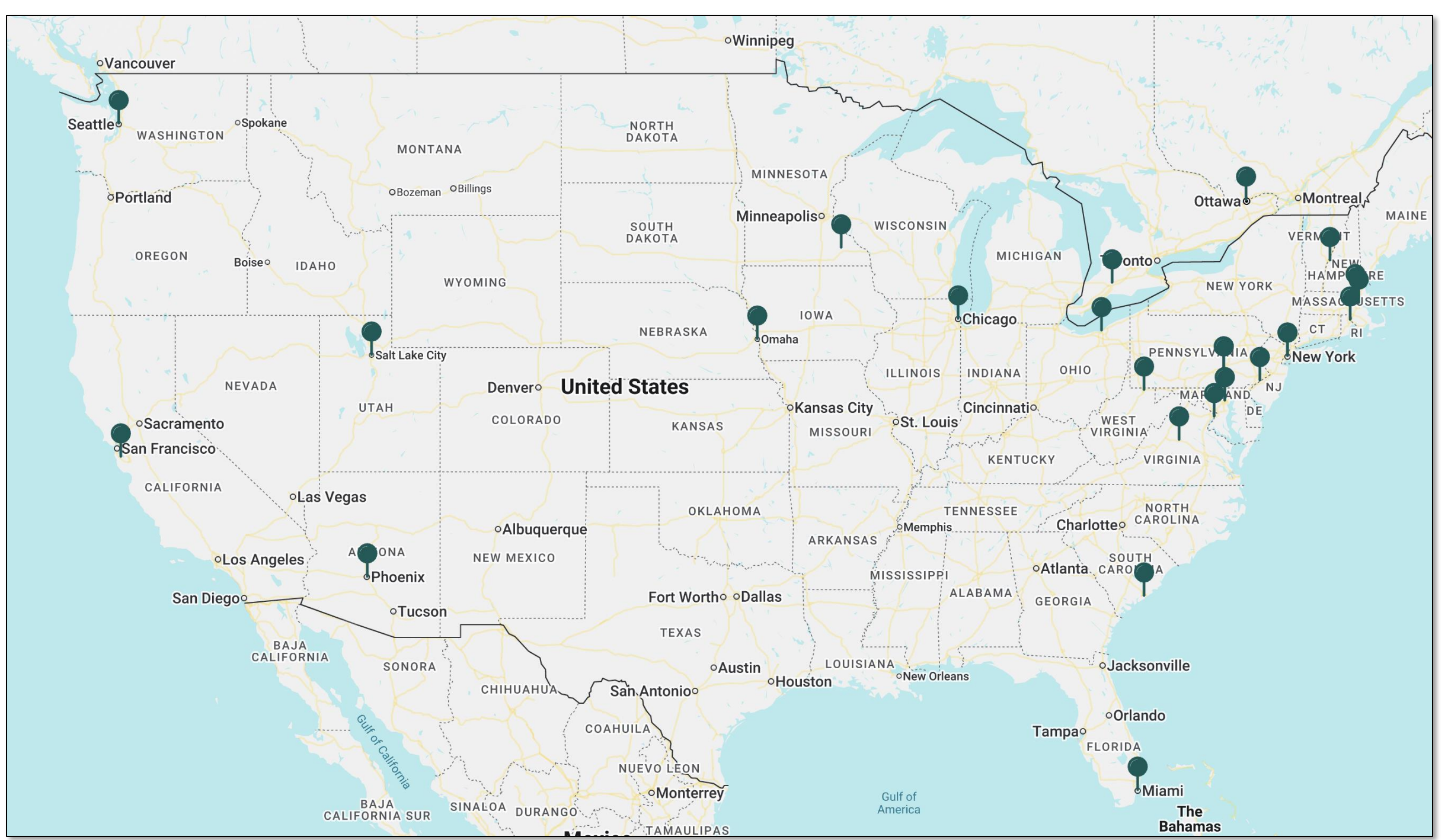
Total Joint Arthroplasty (TJA) is a subset of orthopaedic surgeries shown to improve:

- Patient Quality of Life (QOL)
- Activities of Daily Living (ADLs)
- ★★★ Patient Satisfaction

To date, no study has examined the impact of patient travel time and rurality on patient-reported outcomes after TJA at a national, multicenter level, providing a novel area of research to further optimize TJA care and outcomes for rural patients

DATA SOURCE

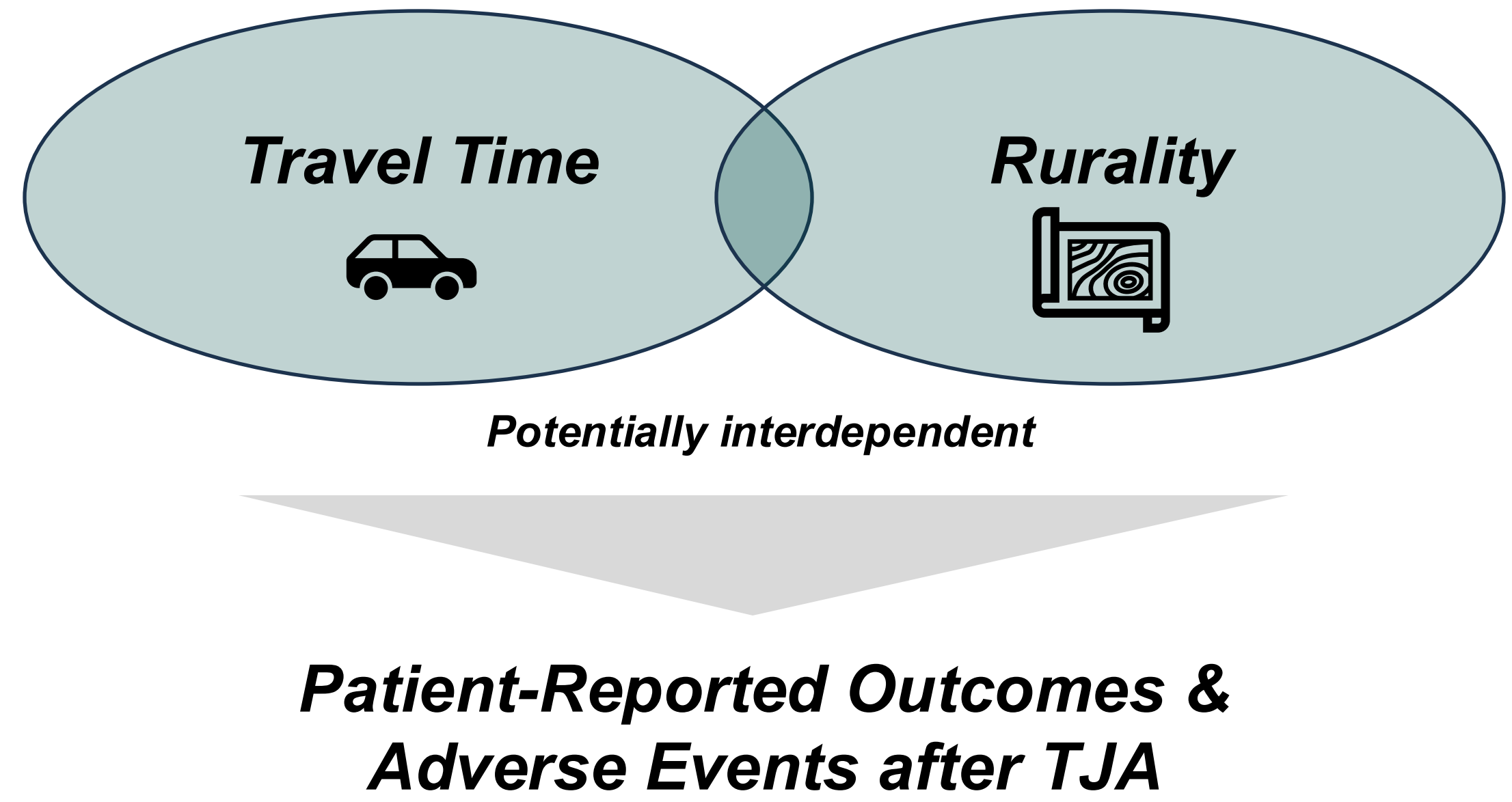
The *Pulmonary Embolism Prevention After HiP and KneeE Replacement trial (PEPPER)* was used as a data source of patient reported outcomes for this retrospective analysis



Data collected between 2016 and 2024 from ~9,000 patients & 19 U.S. PEPPER study sites were included in this study

OBJECTIVES

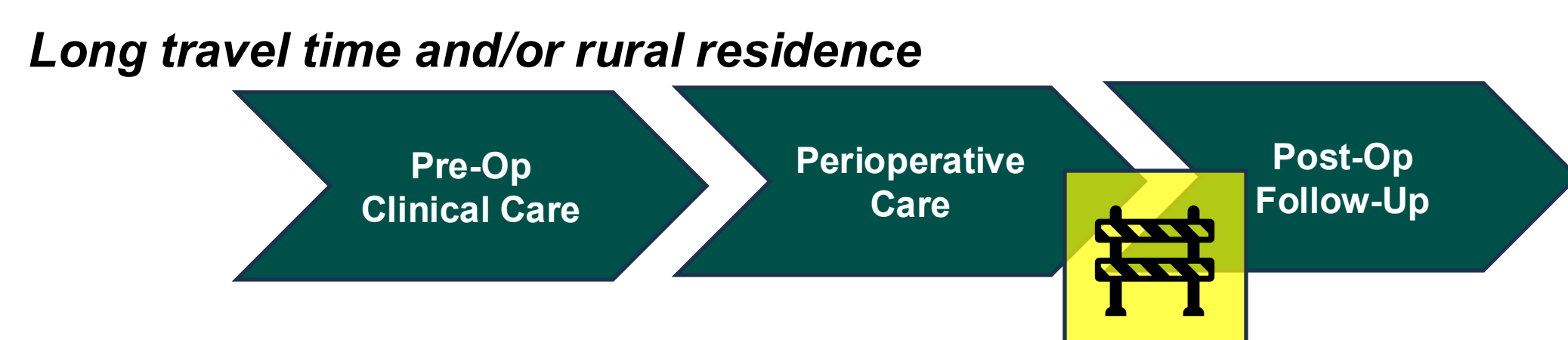
- Primary Objective:**
 To determine if travel time to orthopaedic center is associated with change in patient-reported outcomes (HOOS, KOOS, and PROMIS) following Total Hip and Knee Arthroplasty at 1m, 3m, & 6m follow-up
- Secondary Objectives**
- To determine if patient travel time is associated with occurrence of adverse events following TJA
 - To determine if patient rurality as classified by Rural Urban Commuting Area (RUCA) code is correlated with post-TJA patient-reported outcomes and adverse events



HYPOTHESIS

Prolonged patient travel time to post-operative follow-up and non-emergent adverse event care may increase likelihood of worse patient-reported outcomes compared to patients with shorter travel time, due to delay in presentation for medical care.

Additionally, patients from a rural area may experience worse patient-reported outcomes relative to their micropolitan and metropolitan peers due to differences in access to care (e.g., transportation, cost, etc.)



Patients may not present or will delay presentation for follow-up care or adverse event management if travel time or rural location are barriers

METHODS

Inclusion Criteria

- Participants in The PEPPER Trial who underwent total knee or total hip arthroplasty at U.S. clinical sites with the following characteristics:
 - Male or female
 - 21 years or older
 - Unilateral, elective, primary TKA or THA
 - Completed all follow-up surveys (1m, 3m, 6m post-surgery)

Defining patient travel time

- Travel time calculated using input of 2 zip codes into GIS program
- Patient home zip code and nearest orthopaedic clinic site zip code used to calculate travel time to scheduled follow-up appointments and non-emergent adverse event presentations in the clinic
- Patient home zip code and nearest hospital zip code used to calculate travel time for emergent adverse events following TJA

Defining rurality

- Patient zip codes classified using the Rural Urban Commuting Area (RUCA) codes from the United States Department of Agriculture's Economic Research Service, which uses U.S. Census and supplemental employment commuting data on population density, urbanization, and daily commuting to classify zip codes as metropolitan, micropolitan, and rural, with a corresponding scale

Endpoints

- HOOS (Hip injury and Osteoarthritis Outcomes Score) and KOOS (Knee injury and Osteoarthritis Outcome Score) scores at baseline, 1m, 3m, and 6m follow-up
- PROMIS-10 (Patient-Reported Outcomes Measurement Information System)
- Self-reported functional use of stairs
- Adjudicated adverse events
- Patient-reported adverse events

NEXT STEPS

- Calculate patient travel time
- Analyze data and evaluate trends among patients with various travel times and residence categorizations



Scan QR code for references