Economic Burden of Pain in a National Health Insurance Plan

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Abstract

In this study, we estimated the total healthcare costs associated with 36 non-cancer chronic and acute pain conditions using claims data from a national health plan. Conditions were ranked based on log-linear adjusted cost models. All analyses were stratified by membership in commercial or Medicare plans; if they had cancer or an advanced non-cancer pain condition; if they transitioned between commercial and Medicaid-only plans; if they were living in the South. For Medicare members with chronic pain, the most expensive pain condition per member was also burns at $27,234, after adjusting for covariates (see Table 5a for the ten most expensive acute conditions per member). For commercial members with acute pain conditions, the mean annual number of outpatient visits ranged from 0.8 per member for acute pancreatitis to 3.3 for dislocations (excluding hip). Mean annual pain-related prescription refills for this group were 5.2 (SD 3.0) for arthritis, 5.5 (3.0) for depression, 5.8 (3.0) for back pain, and 6.2 (3.3) for chest pain – non-Spine.

Keywords: chronic pain, acute pain, healthcare costs, healthcare utilization, regional disparities

Introduction

Central Pain Syndrome 338.0
Chronic Post-operative 338.22, 338.28
Spinal Cord Injury 806, 952.xx

Background:

The Institute of Medicine estimated that $635 billion is spent annually on the treatment of chronic pain [1]. With the growing problem of chronic pain, it is critical to develop strategies to efficiently manage this condition. Claims data can be used to estimate the healthcare costs and utilization associated with different pain conditions. Using claims data from a national health plan, this study tracked the annual HCRU (inpatient, outpatient, ER visits, pain-related medications) associated with 36 non-cancer chronic and acute pain conditions.

Methods

Using claims data from a national health plan, this study tracked the annual HCRU (inpatient, outpatient, ER visits, pain-related medications) associated with 36 non-cancer chronic and acute pain conditions. The study included members of commercial and Medicare plans. Conditions were ranked based on log-linear adjusted cost models. All analyses were stratified by membership in commercial or Medicare plans; if they had cancer or an advanced non-cancer pain condition; if they transitioned between commercial and Medicaid-only plans; if they were living in the South. The referent condition for chronic pain conditions was Back pain.

Results

In terms of commercial plan-wide healthcare costs, back pain had the highest adjusted costs at $119,370,308 per year followed by OA at $98,312,833 (see Table 4a for the ten most expensive chronic and acute conditions among commercial members). For Medicare members with acute pain conditions, the mean annual number of outpatient visits ranged from 0.8 per member for acute pancreatitis to 3.3 for dislocations (excluding hip). Mean annual pain-related prescription refills for this group were 5.2 (SD 3.0) for arthritis, 5.5 (3.0) for depression, 5.8 (3.0) for back pain, and 6.2 (3.3) for chest pain – non-Spine.

Limitations

This study focuses on the Humana member population and may not be representative of the United States as a whole. While some pain conditions were extremely expensive per member for both the commercial and Medicare populations, healthcare costs for pain conditions were higher in Medicare plans than commercial plans. Chronic pain conditions caused total healthcare costs at baseline (6 months pre-index period), and indicator variables representing each pain condition. The statistical models only adjust for those variables captured by the claims data. There is the possibility of bias arising from unmeasured covariates.

Discussion

The results of this study highlight the significant burden of pain conditions on healthcare costs. Pain conditions are costly not only in terms of direct medical expenses but also in terms of lost productivity and quality of life. Understanding the factors that contribute to the high costs of these conditions is crucial for developing effective strategies to manage pain. Further research is needed to identify the most effective and efficient interventions for different pain conditions.

References