International Journal of Integrated Care

Tan E, 2026, The Economic Burden of Lower Back Pain in Singapore: A Healthcare Perspective. International Journal of Integrated Care 26(S2):552
DOI: doi.org/10.5334/ijic.ICIC26552

POSTER ABSTRACT

The Economic Burden of Lower Back Pain in Singapore: A Healthcare Perspective

International Conference on Integrated Care (ICIC26), Birmingham, 13-15 April 2026

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Lower back pain (LBP) is a leading contributor to years lived with disability globally and represents a significant economic burden on healthcare systems. In the United States, it is the sixth most costly medical condition, surpassing diabetes and asthma. LBP in other developed countries is estimated to affect 60 to 80% of individuals during their lifetime while 26.4% of adults report LBP lasting at least one day in the past three months. This paper aims to estimate the prevalence of LBP and model the economic cost from a healthcare system perspective. The findings are intended to inform integrated care strategies that promote health and wellbeing for diverse populations and strengthen value-based care through prevention.

We conducted a retrospective database review of patients within the central-north region of Singapore (population: 1.01M) with a primary diagnosis of back pain in 2023. Patients with a history of bone cancer or trauma to the spine and back were excluded. Healthcare utilisation patterns and gross bills (before subsidies, as a proxy for costs) covered inpatient, emergency department (ED), outpatient, day surgery, and primary care settings. The analysis included an assessment of direct medical, pharmaceutical, and surgical costs.

We identified 25,197 patients who sought medical attention with a primary diagnosis of low back pain in 2023 showing a period prevalence of 24.91 per 1000 residents. Incidence was comparable in males and females (25.74 and 24.13 per 1000 respectively). Incidence increased with age with a marked increase at 50 years, from 20.75 per 1,000 in ages 40-50 to 33.43 per 1000 in ages 50-60. The total gross bill for back pain in the study cohort was USD 28.9 million in 2023. Over 83.5% of the total gross bills were attributable to patients aged 50 years and above. There was an increasing proportion of inpatient costs and a decreasing proportion of primary care costs as age increased, indicating a shift in the economic burden from primary to tertiary care. Healthcare utilization patterns showed that the majority of patients were managed in primary care, with 68.6% of patients having at least one polyclinic encounter. 11.9% of patients visited the ED, 4.6% required hospitalisation, and 2.4% subsequently underwent surgery.

This is the first study to evaluate the economic impact of LBP from a population perspective in Singapore. The findings highlight the disproportionate financial impact on older adults and the shift in cost from primary to tertiary care with increasing age. A direct comparison of our observed prevalence (24.91 per 1,000 residents) with international figures, such as the 26.4% of US adults reporting LBP symptoms, must consider that our figures represent the true healthcare cost by only including persons who sought care at a medical facility. Still, our study was limited to public sector institutions and was unable to account for persons who sought care exclusively through private healthcare settings or alternative/traditional medicine. This underscores the need for proactive, community-based approaches that can keep older adults healthy, reducing reliance on expensive hospital visits.