

Direct Medical Costs in Patients with Metastatic Hormone-Sensitive Prostate Cancer (mHSPC) and Metastatic Castration-Resistant Prostate Cancer (mCRPC): A Real-World Evidence from Four Centers in Colombia

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Introduction

- ✓ Accurate estimation of direct medical costs associated with metastatic prostate cancer (mPC) is critical for informed healthcare resource allocation and evidence-based health policy planning.
- ✓ Inadequate therapeutic control in earlier disease stages facilitates progression to metastatic castration-resistant prostate cancer (mCRPC), a clinical state characterized by poor prognosis, substantial deterioration in health-related quality of life, and markedly increased clinical complexity.
- ✓ This transition is consistently associated with a significant escalation in healthcare resource utilization—including systemic therapies, hospitalizations, and supportive care—and, consequently, a pronounced rise in direct medical costs for the health system (1,2).

Objectives

To estimate the direct medical costs of patients diagnosed with metastatic prostate cancer in the hormone-sensitive (mHSPC) and castration-resistant (mCRPC) stages across four healthcare centers in Colombia

Methods

Study Design

- ✓ A retrospective, cross-sectional macro-costing study was conducted using HealthCare Delivery Records, billing/invoicing and pharmacy records from centers in Bogota, Apartado, Cali, and Valledupar between 2021-2024.
- ✓ A generalized linear model with a gamma distribution was used to estimate the adjusted cost ratios between the disease

Direct Costs

- Direct medical costs were estimated by multiplying healthcare resource utilization frequencies with national tariffs and market prices.
- All costs were projected to March 2025 using the Colombian healthcare consumer price index and converted to USD (exchange rate: 4,192.57 COP).

Assumptions & Considerations

- Analysis of cost data from four reference centers indicated limited utilization of advanced healthcare resources in prostate cancer management.
- Therefore, to estimate the costs associated with progression to more advanced stages, we adjusted the results from these stages with the findings of the current study and those reported in 2024 (10) to sensitize the cost curve at the level of the disease's pathophysiology.

Results

A total of 268 patients with metastasis were included. The average annual direct medical cost per metastatic patient was US\$19,164.5 (95% CI:US\$15,524.5-US\$22,804.6). Compared with non-metastatic patients, metastatic patients showed significantly higher utilization of medications (3.02-fold increase, p<0.01), laboratory and imaging services (1.66-fold increase, p<0.01), outpatient specialist visits (1.19-fold increase, p<0.01), and hospitalizations (2.27-fold increase, p<0.01).

Figure 1. Adjusted per patient-year costs in metastatic and non-metastatic prostate cancer

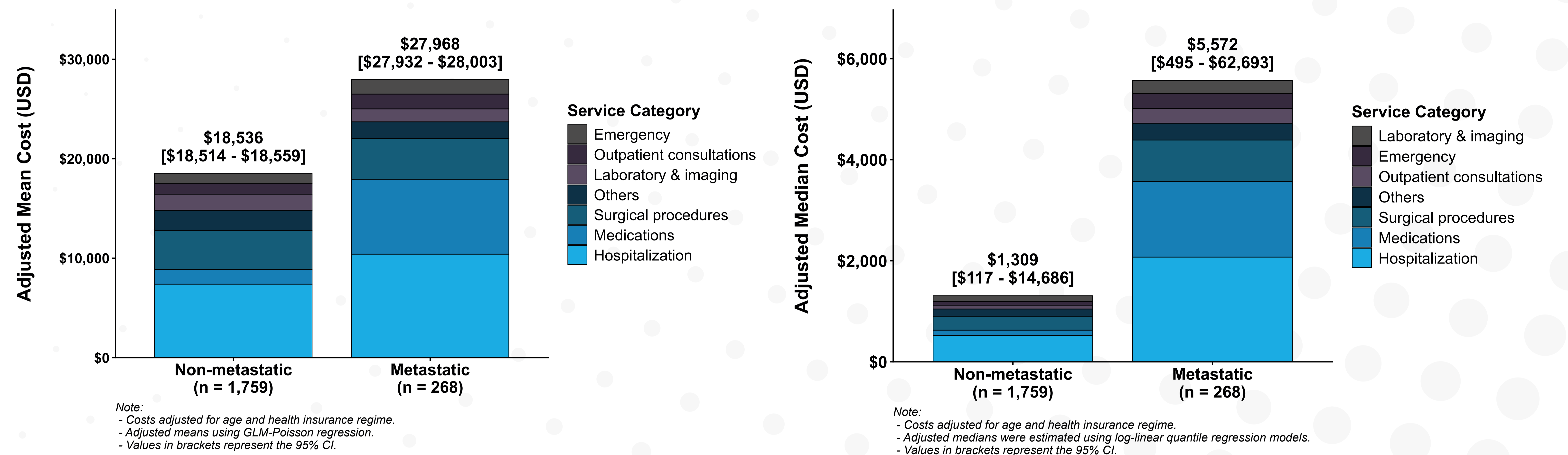
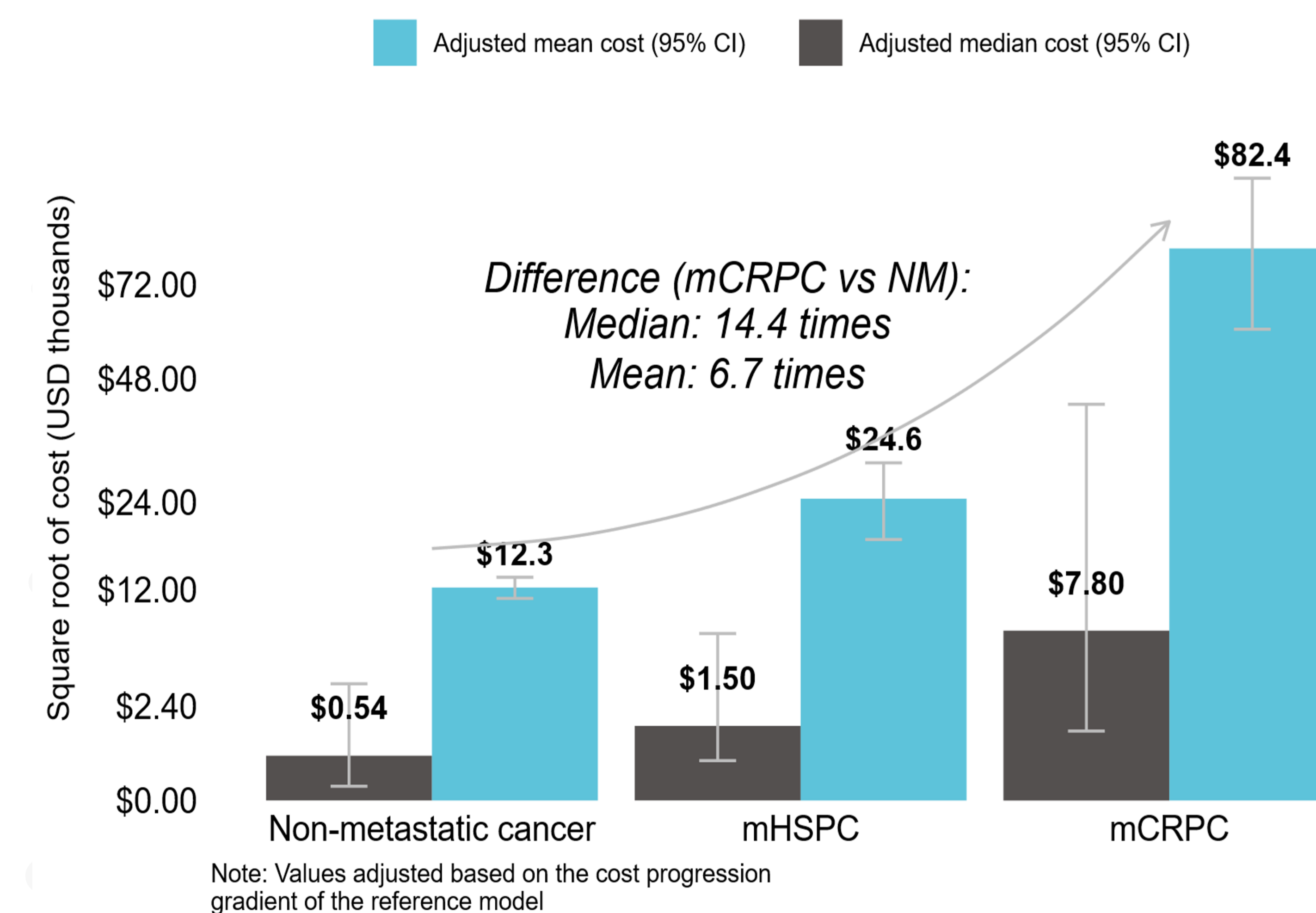
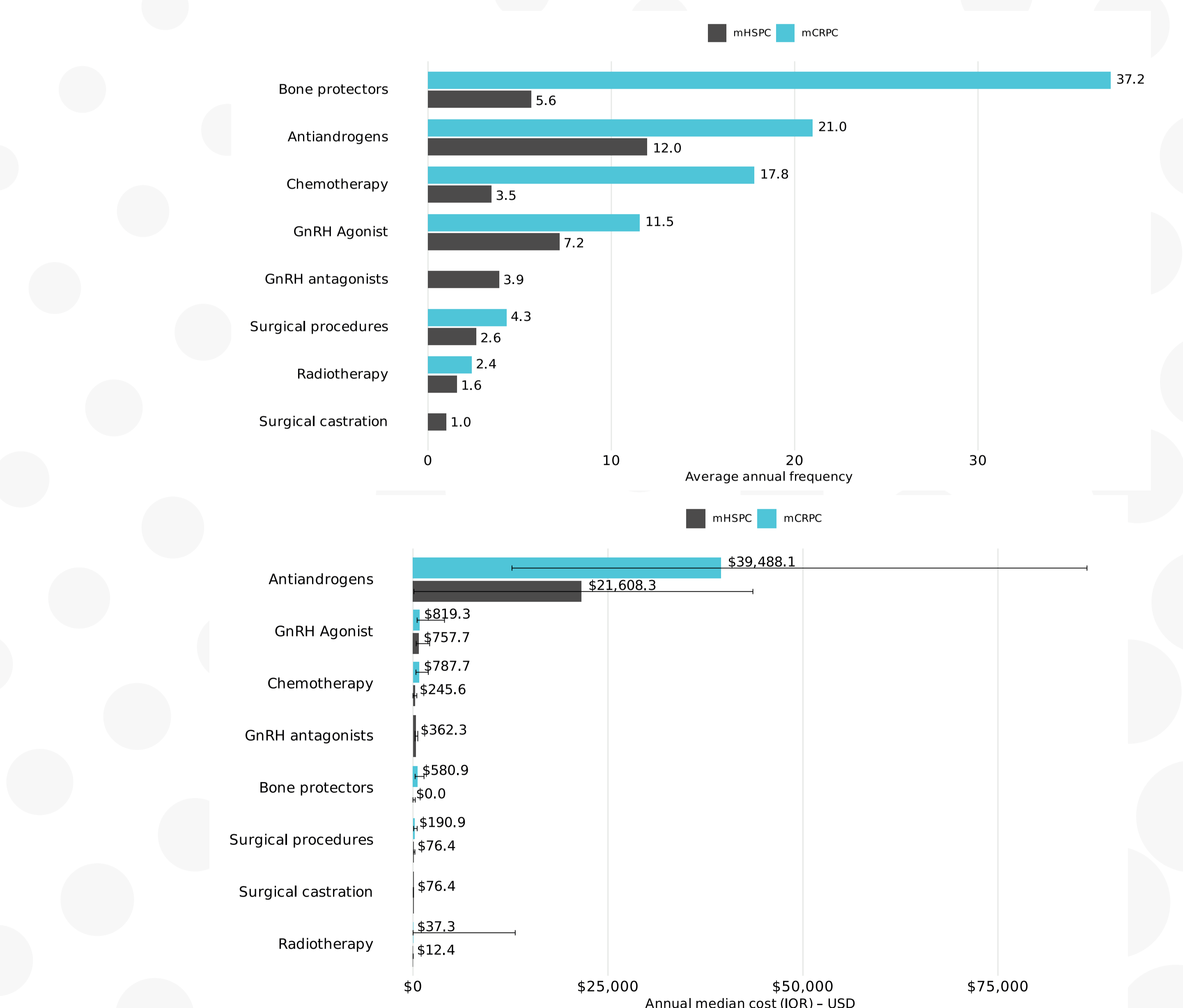


Figure 2. Reference center-adjusted per patient-year costs in non-metastatic, metastatic hormone-sensitive (mHSPC), and castration-resistant (mCRPC) prostate cancer



This approach enabled calibration of the cost trajectory in alignment with the pathophysiology of prostate cancer progression, providing a more coherent and realistic representation of the economic burden across clinical stages.

Figure 3. Annual service utilization frequency and per patient-year costs by healthcare service in mHSPC and mCRPC prostate cancer



Conclusions

The average costs of the castration-resistant group were 2.8 times higher than those of the hormone-sensitive group for patients with metastatic prostate cancer. Avoiding/delaying progression to a castration-resistant state is important for the survival of patients and the health system

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