

Two-Year Cost Analysis of Radical Prostatectomy: Index Procedures and Adjuvant Therapies

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Background & Objective

Background: Radical prostatectomy is a common treatment for prostate cancer, but the economic burden extends beyond the index procedure due to downstream utilization and adjuvant therapies.

Objective: Quantify two-year direct medical costs for patients with malignant prostate neoplasm undergoing radical prostatectomy.

Methods

Design: Retrospective cohort analysis using the PearlDiver Mariner claims database (n=170 million from Jan 1, 2010 – April 30, 2023)

Population: Patients with malignant prostate neoplasm who underwent radical prostatectomy between Jan 1, 2015 and April 30, 2023 with ≥6 months pre-index and ≥ 24 post-index continuous enrollment

Measures

- 3-month pre-procedure, 6-month post-procedure, and 2-year post-procedure costs were determined based on claims data from the Mariner database
- Index procedure costs were estimated using 2025 CMS DRG/APC payments and national average commercially contracted DRG/APC payment rates available in the PayerPrice dataset, weighted by the national averages for commercial vs Medicare patients and inpatient vs outpatient care setting

Results

Table 1: Demographics (n=81,165)*

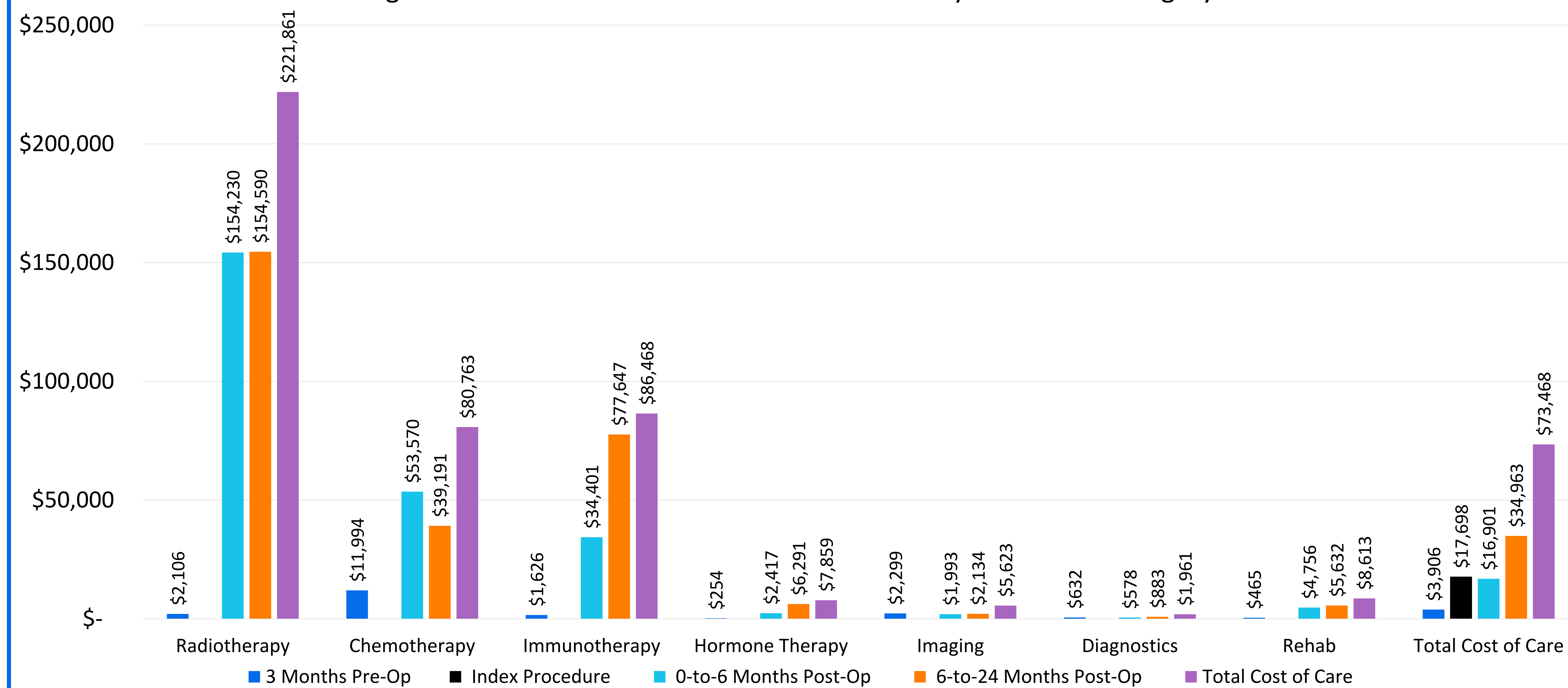
Demographic	n (%)	
Avg. Age	64.12 years	
Health Plan	Commercial**	58,386 (71.93%)
	Medicaid	2,187 (2.69%)
	Medicare	17,910 (22.07%)
	Government	1,238 (1.53%)
	Cash Pay	175 (0.22%)
Region	Midwest	23,629 (29.11%)
	Northeast	13,597 (16.75%)
	South	33,159 (40.85%)
	West	10,538 (12.98%)

*Patients with unknown values in the demographics section are not included in the table
** Commercial includes patients who are insured via private payers and via Medicare Advantage plans

Table 2: Total Costs for Radical Prostatectomy (n=81,165)

	3 Months Pre-Procedure	Index Procedure	0-to-6 Months Post-Procedure	6-to-24 Months Post-Procedure	Total Cost of Care	% of Total Costs
Chemotherapy	\$171,363,681	\$-	\$422,611,861	\$559,966,965	\$1,153,942,507	19.4%
Immunotherapy	\$925,478	\$-	\$4,093,665	\$44,180,991	\$49,200,134	0.8%
Radiotherapy	\$26,390,156	\$-	\$816,649,047	\$1,937,321,159	\$2,780,360,362	46.6%
Hormone Therapy	\$2,409,208	\$-	\$12,457,109	\$59,640,053	\$74,506,370	1.2%
Imaging	\$71,302,643	\$-	\$36,911,085	\$66,184,540	\$174,398,268	2.9%
Diagnostics	\$34,527,971	\$-	\$24,400,304	\$48,215,030	\$107,143,305	1.8%
Rehab	\$10,090,870	\$-	\$54,639,895	\$122,264,014	\$186,994,779	3.1%
Index Procedure	\$-	\$1,436,470,894	\$-	\$-	\$1,436,470,894	24.1%
Total Cost of Care	\$317,010,007	\$1,436,470,894	\$371,762,966	\$2,837,772,752	\$5,963,016,619	100.0%

Figure 1. Total Cost of Care Per Patient Treated By Treatment Category*



* Per patient costs are calculated by dividing the total cost for the treatment category by the number of patient's receiving that treatment over the given timeframe.
** Total Cost of Care category was calculated by dividing the total costs for that time period by the total number of patients treated.

Conclusions

- Adjuvant therapies, particularly radiotherapy and chemotherapy, accounted for a disproportionate share of two-year treatment costs following radical prostatectomy.
- These findings highlight the need to consider the entire treatment pathway when evaluating economic value in prostate cancer care.
- Understanding facility economics and downstream resource utilization is essential for informed, value-based clinical decision-making.

Limitations

- Retrospective claims analyses are subject to limitations inherent to administrative data including potential coding errors and lack of clinical data
- Costs represent paid claims and modeled payment estimates rather than true provider costs
- Index procedure costs were estimated using CMS and national payment benchmarks, which don't reflect institution-specific reimbursement
- Per patient treatment costs were calculated only among patients receiving that therapy, which may overstate average costs when interpreted at the full cohort level