HSD15

Real-World First-Line Treatment (Tx) Patterns in Androgen Receptor Pathway Inhibitor (ARPI)-Experienced Metastatic Castration-Resistant Prostate Cancer (mCRPC) by Race/Ethnicity and Area-Level Socioeconomic Status (SES) in the US

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Objectives

- To characterize the demographic and clinical characteristics among patients with mCRPC
- To evaluate first-line (1L) mCRPC treatment utilization by race, ethnicity and area-level SES

Limitations

- **Study population:** The cohort was limited to patients with prior pre-mCRPC ARPI therapy; findings may not generalize to all mCRPC patients.
- **SES**: Patient's most recent residence was aligned to US Census Block Groups as of 2015-2019 (the timeframe for SES variables in the dataset); this may not reflect individual SES
- **Race/ethnicity:** Race and ethnicity data are unavailable for some patients, which may affect representativeness. The Non-Hispanic Asian group was small, limiting interpretability
- **Missing treatment data** in the pre-mCRPC or 1L mCRPC setting may lead to patient misclassification, particularly for treatment received outside the Flatiron Health Network

Conclusions

- Differences in 1L mCRPC treatment selection and ARPI reuse were observed across racial/ethnic groups and area-level SES
- Variation in real-world use of sequential ARPIs suggests potential gaps between treatment guidelines and clinical practice that warrant further study, including the impact of access-related barriers
- Addressing the influence of social determinants of health on treatment access and utilization will be critical to advancing equity in mCRPC care



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References: 1. Fizazi K, et al. Ann Oncol. 2026; 37(5): 590-607; 2. Efstathiou E, et al. 2025; 3. Freedland SJ, et al. Prostate Cancer Prostatic Dis. 2024; 27(2):327-333; 4. Shore ND, et al. Adv Ther. 2021; 38(8):4520-4540; 5. Guadamuz JS, et al. JNCI Cancer Spectrum. 2023; 7(5):pkad058.

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Background

- ARPIs such as abiraterone, enzalutamide, apalutamide, and darolutamide are increasingly being used in the metastatic castration-sensitive prostate cancer (mCSPC) and non-metastatic prostate cancer settings, reflecting advances in treatment and evolving clinical guidelines[1]
- Current guidelines recommend treatment approaches based on prior therapy, disease characteristics, and biomarker status. Following ARPI exposure, key treatment options include docetaxel and biomarker-directed agents such as PARP inhibitors and ^{177}Lu-PSMA, while sequential ARPI use is generally considered suboptimal[1]
- Nevertheless, widespread sequential use of ARPIs has been reported in contemporary real-world studies, suggesting that treatment sequencing following ARPI exposure in the pre-mCRPC setting remains an area of unmet clinical need[2-4]
- Treatment patterns and clinical outcomes in prostate cancer have also been reported to vary by race/ethnicity and SES, with disparities similarly observed across other cancer types[5]
- However, recent real-world evidence characterizing 1L treatment patterns among patients with mCRPC previously treated with an ARPI in the pre-mCRPC setting remains limited, particularly regarding potential differences by race/ethnicity and SES in the US

Materials and Methods

- **Study design and data source:** This retrospective, observational cohort study used the US-based, Electronic Health Record-derived Flatiron Health Research Database. Patients diagnosed with mCRPC between January 2023 and August 2024 were identified and followed through August 31, 2025 **(Figure 1**)
- **Study population:** Patients who initiated 1L mCRPC therapy after receiving an ARPI in the pre-mCRPC setting were included (**Table 1**)
- **Treatment groups:** Adult patients were categorized into three mutually exclusive 1L mCRPC treatment groups: ARPI only ± androgen deprivation therapy (ADT), chemotherapy ± ADT, or other therapy (Radiopharmaceuticals ± ADT, PARP inhibitor (PARPi)-containing therapy ± ADT, Sipuleucel-T ± ADT, Immunotherapy ± ADT, Other ARPI combination therapy, Other non-ADT therapy)
- **Study measures:** Baseline characteristics, 1L treatment patterns, and prior ARPI exposure were summarized descriptively, and stratified by race/ethnicity and area-level SES
- **SES assessment:** Area-level SES was derived from patients' residential addresses and US Census Block Group data from the 2015–2019 American Community Survey using a modified Yost Index. The SES Index was categorized into quintiles[5]

Figure 1. Study Design

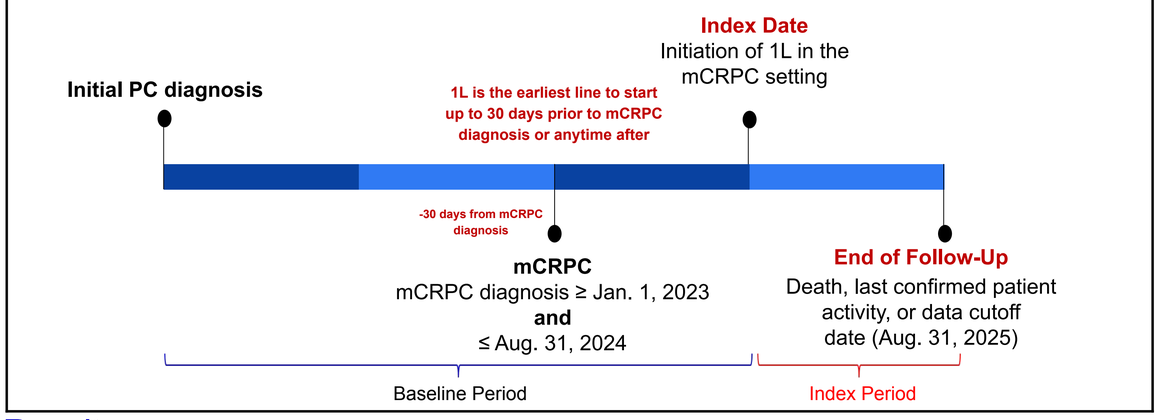


Table 1. Patient Selection

Cohort Selection Criteria	N
Included in the Flatiron Health Prostate Cancer EDM	28,318
Has evidence of treatment for PC in the localized or advanced setting prior to being diagnosed with mCRPC between January 1, 2023 and February 28, 2025	2,735
No evidence of participating in a clinical trial, missing treatment data for prostate cancer or evidence of an additional non-prostate malignancy within one year pre- 1L/mCRPC diagnosis	2,418
Has evidence of ARPI exposure in the pre-mCRPC setting	1,219
Diagnosed with mCRPC on or before August 31, 2024 to allow for at least 12 months of potential for follow-up	961
Has evidence of treatment with any non-ADT, systemic therapy as 1L in the mCRPC setting	667

EDM, Enhanced Datamart; PC, prostate cancer

Figure 2a. 1L mCRPC Therapy by Race/Ethnicity

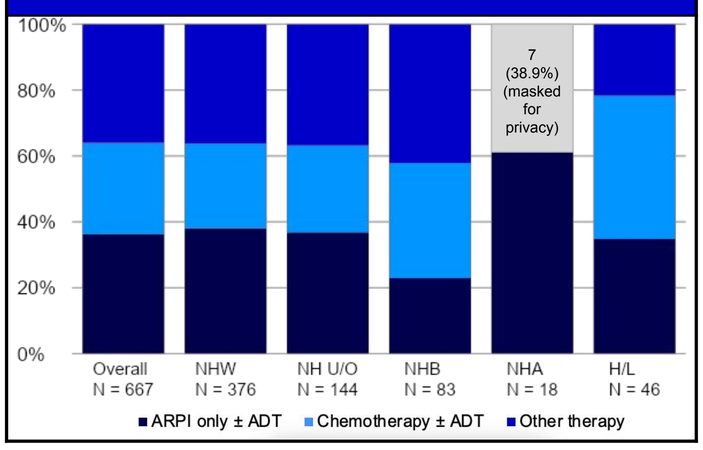
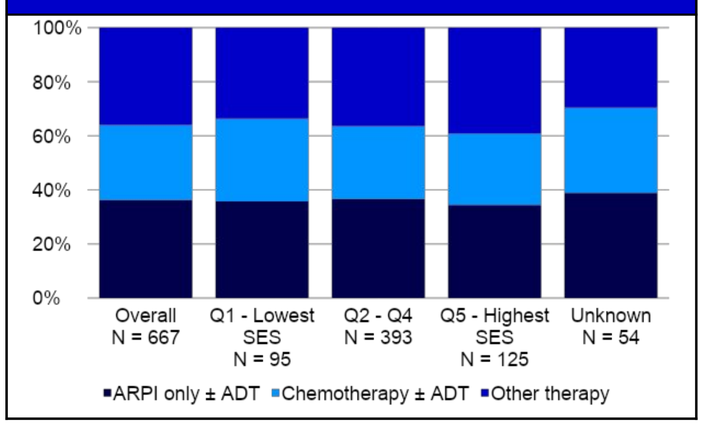


Figure 2b. 1L mCRPC Therapy by SES Index



Results

Patient Characteristics

- A total of 667 ARPI-exposed patients with mCRPC were included in the analytic cohort (**Table 1**)
- Overall, 56.4% of patients were non-Hispanic White (NHW) and 12.4% were non-Hispanic Black (NHB). Additionally, 14.2% and 18.7% of patients resided in areas within the lowest and highest SES quintiles, respectively
- Most patients received care in community oncology practices (81.6%). Nearly three-quarters (74.0%) of patients had commercial insurance, including Medicare Advantage (**Table 2**)
- Compared with NHW patients, NHB patients were younger, more frequently resided in areas within the lowest SES quintile (NHB: 23/83; 27.7%, NHW: 40/376; 10.6%), and had higher median prostate-specific antigen (PSA) levels at metastatic diagnosis (**Table 2**)
- Patients in the lowest SES quintile were younger and had a higher median PSA level at metastatic diagnosis than those in the highest SES quintile (**Table 2**)

Treatment Patterns

- Abiraterone (222/667; 33.3%) and enzalutamide (210/667; 31.5%) were the two most common ARPIs used in the pre-mCRPC setting
- Overall, ARPI only ± ADT was a more common 1L mCRPC treatment (242/667; 36.3%) than chemotherapy ± ADT (185/667; 27.7%). Other treatments (240/667; 36.0%) was a heterogenous group that included Other ARPI combination therapy, PARPi therapies, and radiopharmaceuticals, none of which, taken alone, were as common as the ARPI only ± ADT or chemotherapy ± ADT.
- **By race/ethnicity:** A higher proportion of Hispanic/Latinx and NHB patients received chemotherapy ± ADT as 1L mCRPC treatment compared with NHW patients (**Figure 2a**)
- **By SES:** A higher proportion of patients in the lowest SES quintile received chemotherapy ± ADT compared with those in the highest SES quintile (**Figure 2b**)

Table 2. Patient Demographics and Clinical Characteristics

Characteristic	All	Race/Ethnicity					SES			
		NHW	NH O/U	NHB	NHA	H/L	Q1	Q2 – Q4	Q5	Unknown
N	667	376	144	83	18	46	95	393	125	54
Clinical pathway prior to mCRPC, %										
mCSPC prior to mCRPC	83.1	80.3	91.0	85.5	83.3	76.1	80.0	81.9	86.4	88.9
nmCRPC prior to mCRPC	16.9	19.7	9.0	14.5	16.7	23.9	20.0	18.1	13.6	11.1
Age categories at index date (1L start date), %										
18-64	16.4	13.5	16.7	31.3	16.7	13.0	26.4	15.8	13.6	11.1
65-74	35.4	32.2	40.3	41.0	11.1	45.7	32.6	34.6	34.4	48.1
≥75 Years	48.1	54.3	43.1	27.7	72.2	41.3	41.1	49.6	52.0	40.7
Practice type, %										
Community	81.6	76.9	96.5	79.5	72.2	80.4	91.6	80.7	73.6	88.9
Academic or Both	18.4	23.1	3.5	20.5	27.8	19.6	8.4	19.3	26.4	11.1
Insurance status[1] at index date (1L start date), %										
Commercial	74.0	74.5	77.1	68.7	72.3	71.8	68.4	75.8	76.0	66.7
Medicare/ Medicaid	11.1	13.1	7.6	10.8	5.6	8.7	8.4	11.5	12.8	9.3
Other	5.6	5.4	6.3	7.2	5.6	4.3	6.4	5.6	4.8	7.5
Unknown/ Uninsured	9.1	7.2	9.0	13.3	16.7	15.2	16.8	7.1	6.4	16.7
ECOG PS at initiation of 1L, %										
0	26.8	28.2	27.8	22.9	27.8	19.6	27.4	24.4	32.0	31.5
1	32.4	30.9	34.0	36.1	33.3	32.6	31.6	35.6	23.2	31.5
2+	13.5	13.3	11.1	19.3	16.7	10.9	20.0	13.5	10.4	9.3
Unknown	27.3	27.7	27.1	21.7	22.2	37.0	21.1	26.5	34.4	27.8
PSA at Metastatic Diagnosis (ng/mL)										
Median (IQR)	52.2 (10.9–224.2)	36.3 (8.8–165.5)	51.7 (11.7–340.3)	154.5 (31.9–664.5)	64.7 (23.7–207.0)	56.0 (15.1–185.9)	95.5 (17.1–426.3)	52.0 (11.6–218.3)	45.4 (8.8–183.6)	30.1 (6.0–114.9)

H/L Hispanic/Latinx; NHA, Non-Hispanic Asian; NHB, Non-Hispanic Black; NH O/U, Non-Hispanic Other/Unknown; NHW Non-Hispanic White; Q1, Quintile 1; Q2, Quintile 2; Q4, Quintile 4; Q5, Quintile 5. ECOG PS, Eastern Cooperative Oncology Group Performance Status; IQR, interquartile range

[1] Commercial includes Medicare Advantage. Other includes Other Government Program, Patient Assistance Program, Workers Compensation, Other Payer - Type Unknown, Self Pay

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