

# Variation and Comparative Effectiveness of Systemic Therapy in Advanced Prostate Cancer among Veterans



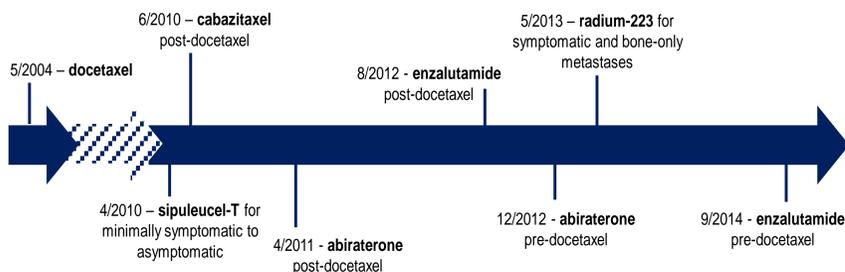
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## Study Aims

- Aim 1: To characterize treatment patterns and examine determinants of variation in the treatment of patients with advanced prostate cancer.
- Aim 2: To examine the effects of different treatment patterns for patients with advanced prostate cancer on patient outcomes.

## Background

- Six treatments have improved overall survival in men with metastatic castration-resistant prostate cancer (mCRPC), each differing in timing of approval (Figure 1), toxicities, and cost.

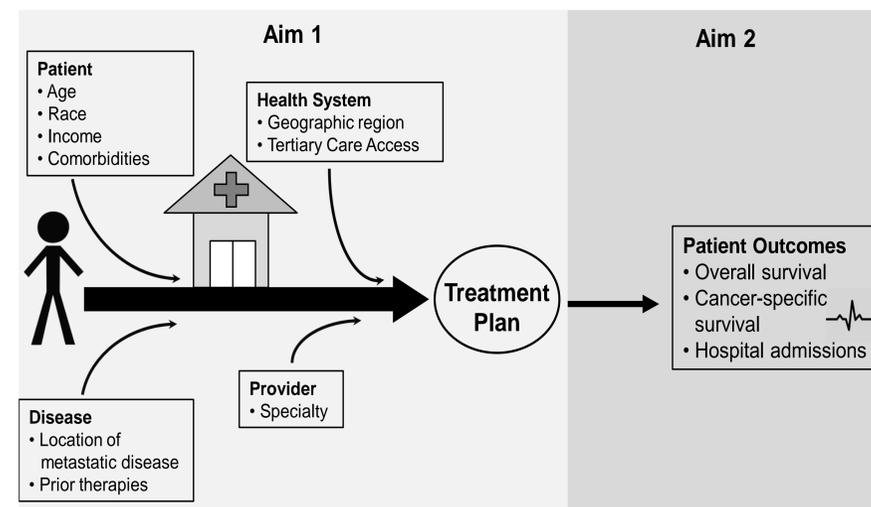


- Accompanying such expansion is the potential for widespread variation in treatment and uncertainty about optimal treatment patterns.
- Treatments for advanced prostate cancer are widely available, expensive, and likely to be influenced by non-clinical factors such as race, region of the country, distance to a treating facility, and physician-level variables.

**Impact:** Prostate cancer is a service-connected condition for men exposed to Agent Orange in the Vietnam era. Identifying treatment patterns that lead to best outcomes and the key determinants of variation in the proposed work will lay the foundation for future grants that focus on the development and implementation of strategies to help providers overcome barriers, and deliver best men with advanced prostate cancer.

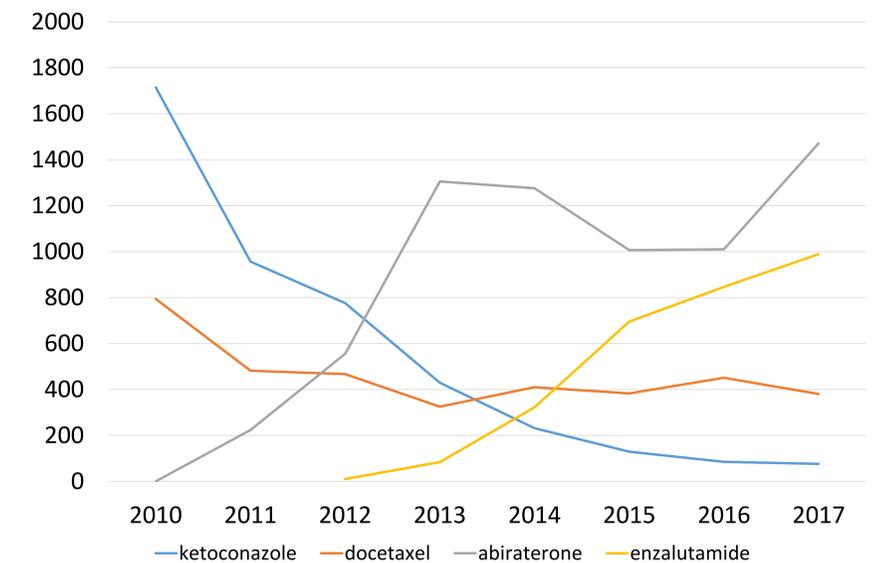
## Methods

- Using the VA extensive electronic laboratory and clinical infrastructure, we will identify treatment patterns that are commonly occurring and those of particular interest (e.g. using more than one drug concurrently), and investigate patient and physician factors associated with treatment patterns (Aim 1).
- Using a subset of treatment patterns, propensity score matching and instrumental variable analysis will be used in parallel to determine the effects of various treatment patterns on important clinical outcomes (Aim 2). The Conceptual Framework is shown below.



## Results

- Among 569,432 Veterans identified with prostate cancer between 2010-2017, 3.16% (n=17,991) received at least one of the following treatments used to treat patients with mCRPC (ketoconazole, mitoxantrone, docetaxel, abiraterone, enzalutamide, cabazitaxel, sipuleucel-T, and radium-223).



- Abiraterone was the most commonly used treatment of all of the 8 investigated – 10,303 patients (57.3%) received abiraterone at some point in their disease course.
- Among those continuously enrolled, most patients (61.5%, n=11,068) received only one drug throughout the study time period, while 997 patients (5.5%) received four or more different drugs.

## Next Steps

- Determine variables that impact treatment patterns.
- Identify those patterns that result in the longest total time on treatment and longest survival.
- Identify these treatments and patterns that result in the most toxicities.

## Acknowledgments

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