

# Summarising current evidence for the PIONEER study-a-thon: Systematic Literature Review of prostate cancer patients managed with watchful waiting

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## Background:

Prostate cancer (PCa) affects more than 2 million men in Europe. Clinical management of PCa is challenging and involves difficult trade-offs. Therefore, doctors and patients have to make difficult decisions on how to treat the disease and in some case on whether or not to treat the disease, which also involves risk. In particular, 'Watchful Waiting' is the recommended in cases, where no initial treatment or local treatment with curative intent is planned, with the aim of avoiding treatment-related side effects.

The sparsity of data and large numbers of patients managed with Watchful Waiting are make this a good prospect for the new Real World Evidence approaches pioneered by OHDSI and EHDEEN. In particular, a study-a-thon. This is a focused event, in which a large-scale study, which traditionally takes many months to complete, is executed and completed in a few days. Here, we report on the systematic literature review that guided the study-a-thon to working groups looking at the question "What are the long-term outcomes of prostate cancer patients undergoing non-interventional management (i.e., Watchful Waiting) and what is the impact of comorbidities and life expectancy?"

## Methods:

To enable a better understanding of the current literature (published between 1980 and 2020), we conducted a systematic review of adult men ( $\geq 18$  years of age) who were managed with WW. We searched for quantitative and qualitative studies, systematic reviews with populations, interventions and comparators which overlapped with our aim. We extracted: author, year, title, link, country, data source, study design, sample size, target cohort definition, intervention, outcomes, aims and gaps in the literature to ultimately guide the study-a-thon. This was discussed with a multidisciplinary group of urologists, epidemiologists, statisticians, and data analysts.

## Results:

We systematically reviewed 14,996 articles during the month before the study-a-thon. After abstract and full text screening, 47 articles were included (see Figure 1). Most of the studies identified were based in Sweden or in the USA. Out of the 47, 32 were of observational design and 12 were clinical trials. The age range was 40–88 years, with most of the studies reporting  $< 75$  years as the cut off age. Research gaps in the literature were linked including an effectiveness analysis with real-world adherence rates and incorporating other end points such as cost effectiveness, better description of the differences in the sup-groups characteristics, better understanding of

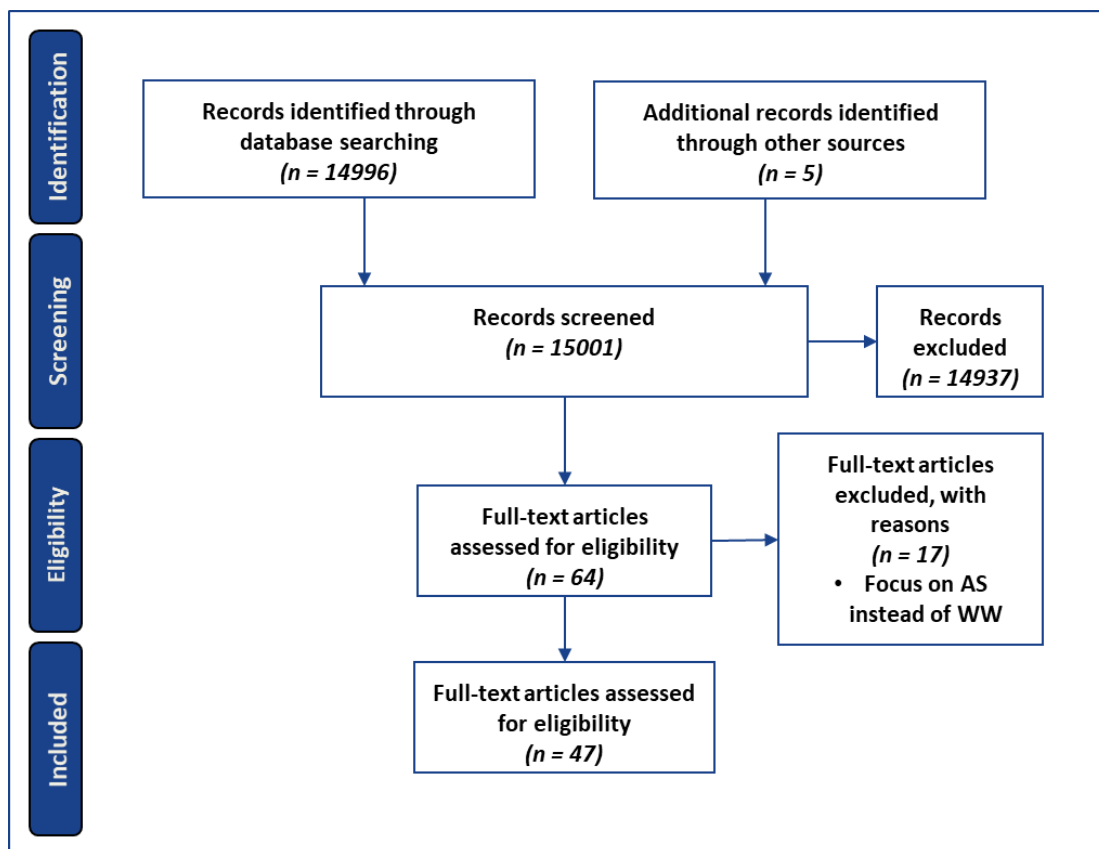
patient experience on WW, longer follow up. The main limitations in the studies identified were small sample sizes and unclear use of terminology (Active Surveillance vs Watchful Waiting). As part of the preparation for the study-a-thon, our multidisciplinary group (urologists, patients, epidemiologists and data scientists) translated the identified evidence into data requirements to develop the patient cohorts.

### Conclusion:

A correct knowledge of the literature obtained through a systematic review is key before starting a study-a-thon. The presented work supported research groups in the process of developing a protocol for this study-a-thon. It is especially important to collect data on information gaps in the evidence and the population characteristics be minded for developing cohort definitions and selecting suitable outcomes and allow multidisciplinary group to communicate in 'one language'. The different skill sets need to be combined to enable Real World Evidence projects to reach meaningful conclusions by using the current evidence to inform meaningful research.

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Figure 1: PRISMA flow diagram



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