



PIONEER

IMI2 777492 – PIONEER

Prostate Cancer Diagnosis and Treatment Enhancement through the Power of Big
Data in Europe

WP2 – Disease understanding and outcome definition

D2.4 Online website to translate use of standard outcomes and DPFs into
medical practice

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D2.4 Online website to translate use of standard outcomes and DPFs into medical	V1.0	3 rd May 2021

Contents

Document History	3
Publishable Summary	3
Aim of the deliverable.....	3
Methods and Results.....	3
Conclusion	7
Acknowledgement	7

Document History

Version	Date	Description
V 0.3	March 2021	First draft document
V 0.4	March 2021	Internal WP2 review
V 0.4	30/04/2021	WP1 review
V 1.0	03/05/2021	Final version

Publishable Summary

Not applicable as Deliverable 2.4 is a public deliverable that once approved will be available in its entirety for download on the PIONEER website (<https://prostate-pioneer.eu/outcomes/project-deliverables/>)

Aim of the deliverable

The aim of deliverable 2.4 is to translation the outcomes and diagnostic and prognostic factors for the different stages of prostate cancer into an online application to support and drive widespread applicability and acceptability. Through collaboration with WP7, the online tool will be linked to the PIONEER website and aimed at both researchers and healthcare professionals. This page will be used to disseminate and implement the use of standard outcomes and DPFs across all stakeholders with the final aim of homogenising management of PCa worldwide.

Methods and Results

The findings of the systematic reviews as outlined in Deliverables 2.2 have been exported into an online search tool to ensure wide applicability of the study findings. The online search tool has been developed with the support of consortium partner Bayer. Figure 1 shows an overview of the development process for identification of the DPFs. Figure 2 shows the configuration of the online tool.

The current tech-stack for the online tool consists of:

Front-End	React JS / Next JS
API / Server	Uvicorn (ASGI, Python) server GraphQL API using Ariadne (Python) Nginx as reverse proxy / webserver
Database	Elasticsearch (7.10.1)

The orchestration of the individual services is done using Docker Compose. For the API, a custom Dockerfile was created which is based on the miniconda3 image. In addition to this we use the standard nginx image as webserver, for hosting the static Next JS files, as well as reverse proxy for the API due the SOP (Same-Origin-Policy) restrictions for CORS (Cross-Origin Resource Sharing). The database service uses the Elasticsearch docker image which is configured as single node cluster and includes 2 indices, one for the publications and another for the taxonomy, with two shards each and no replication.

Hosting requirements:

OS (operating system):

- OS independent because of Docker

Disk space:

- The required disk space for the docker images is less than 10Gb
- Currently using less than 100Mb for the publications / taxonomy in Elasticsearch
- Currently using less than 200Mb for all static assets of the website (HTML, CSS, JS, Images)

Hardware:

- Test instance running on a 4 vCPU AWS EC2 instance with 16Gb of RAM with other services
- 1 vCPU instance with 4Gb should suffice for the current amount of data in Elasticsearch; This, however depends on the expected number of users at peak times

Development of the online search tool is now complete with the planned transition to the hosting partner planned for May 2021. The online search tool will be launched for public use once the hosting transfer is complete. WP2 and WP7 will work collaboratively to ensure the tool is disseminated to as wide an audience as possible.

Figure 1: Development of the PIONEER Diagnostic and Prognostic Factors for PCa

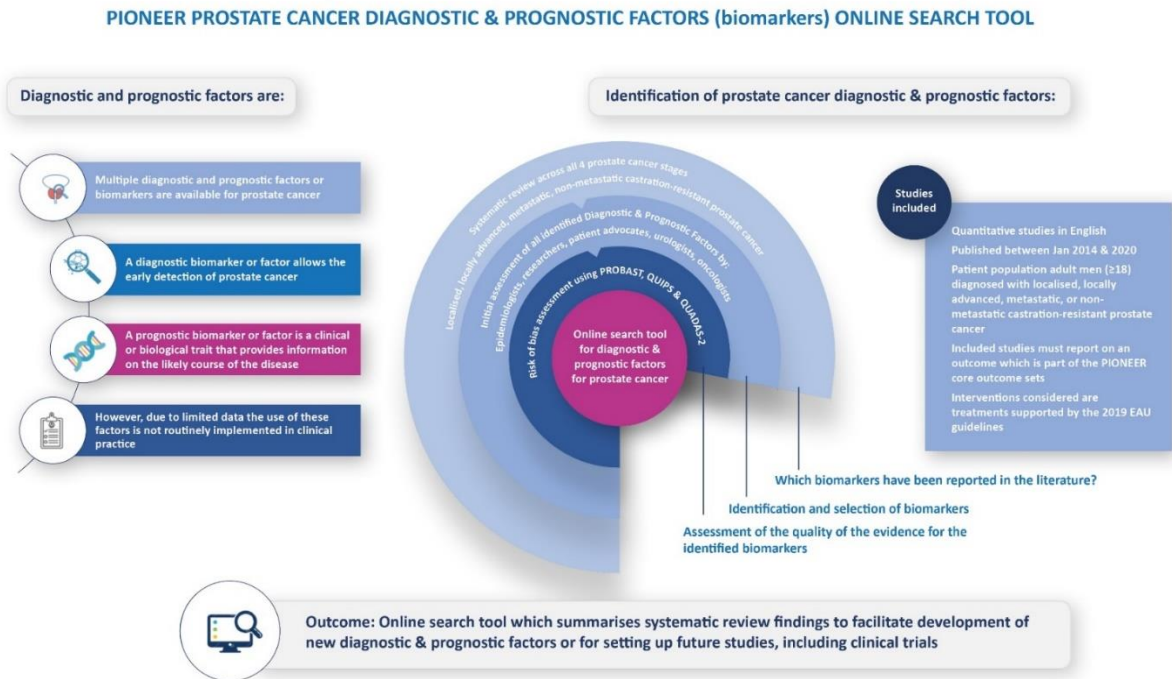
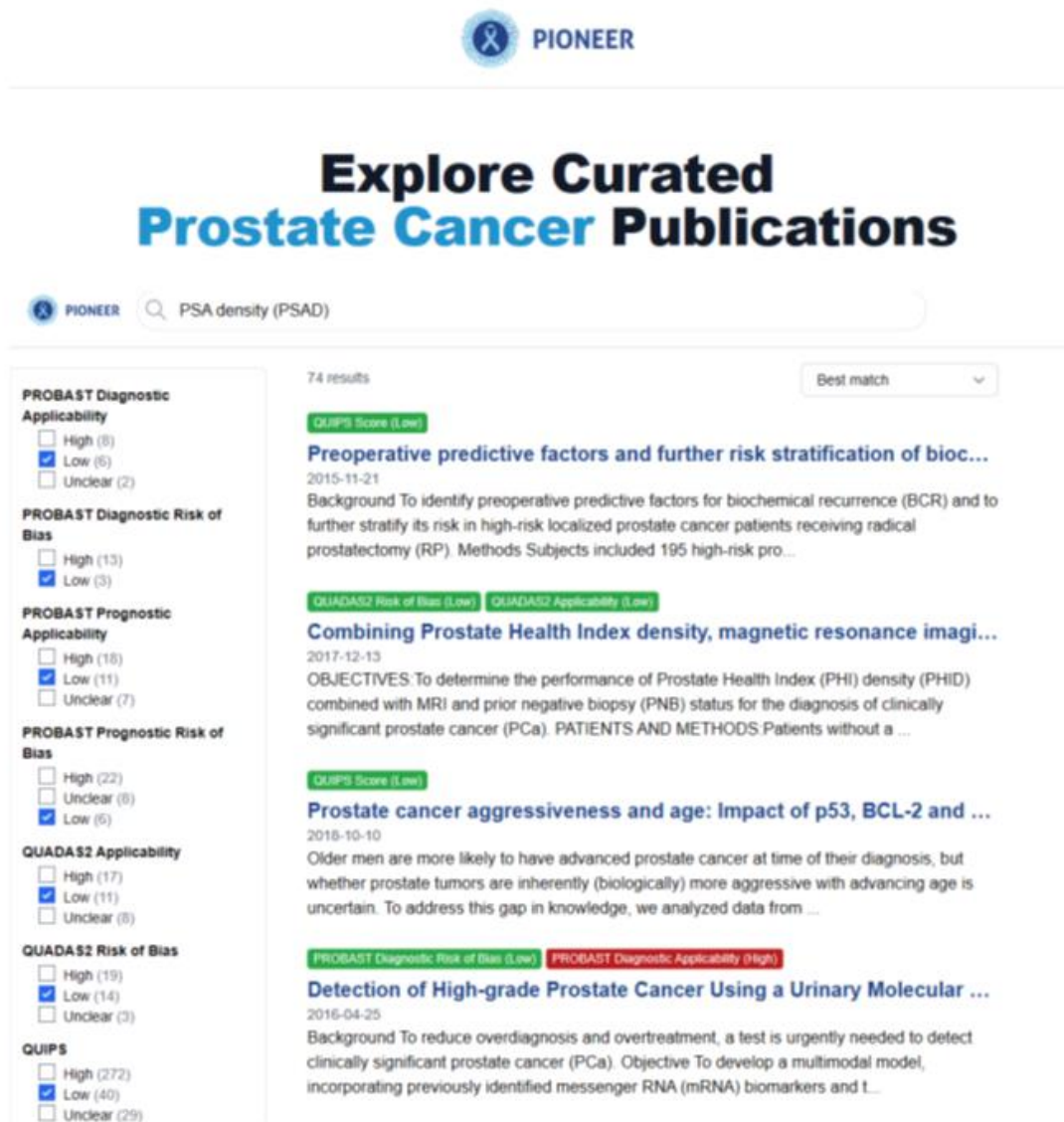


Figure 2: PIONEER online search tool for Diagnostic and Prognostic factors for Prostate Cancer



PIONEER

Explore Curated Prostate Cancer Publications

PIONEER

74 results Best match

PROBAST Diagnostic Applicability

High (8)

Low (5)

Unclear (2)

PROBAST Diagnostic Risk of Bias

High (13)

Low (3)

PROBAST Prognostic Applicability

High (18)

Low (11)

Unclear (7)

PROBAST Prognostic Risk of Bias

High (22)

Unclear (6)

Low (5)

QUADAS2 Applicability

High (17)

Low (11)

Unclear (6)

QUADAS2 Risk of Bias

High (19)

Low (14)

Unclear (3)

QUIPS

High (272)

Low (40)

Unclear (29)

QUIPS Score (Low)

Preoperative predictive factors and further risk stratification of bioc...
 2015-11-21
 Background To identify preoperative predictive factors for biochemical recurrence (BCR) and to further stratify its risk in high-risk localized prostate cancer patients receiving radical prostatectomy (RP). Methods Subjects included 195 high-risk pro...

QUADAS2 Risk of Bias (Low) QUADAS2 Applicability (Low)

Combining Prostate Health Index density, magnetic resonance imagi...
 2017-12-13
 OBJECTIVES To determine the performance of Prostate Health Index (PHI) density (PHID) combined with MRI and prior negative biopsy (PNB) status for the diagnosis of clinically significant prostate cancer (PCa). PATIENTS AND METHODS Patients without a ...

QUIPS Score (Low)

Prostate cancer aggressiveness and age: Impact of p53, BCL-2 and ...
 2018-10-10
 Older men are more likely to have advanced prostate cancer at time of their diagnosis, but whether prostate tumors are inherently (biologically) more aggressive with advancing age is uncertain. To address this gap in knowledge, we analyzed data from ...

PROBAST Diagnostic Risk of Bias (Low) PROBAST Diagnostic Applicability (High)

Detection of High-grade Prostate Cancer Using a Urinary Molecular ...
 2016-04-25
 Background To reduce overdiagnosis and overtreatment, a test is urgently needed to detect clinically significant prostate cancer (PCa). Objective To develop a multimodal model, incorporating previously identified messenger RNA (mRNA) biomarkers and L...

Conclusion

The tool is designed so that stakeholders can access up to date available evidence (and view the quality of the studies published) when developing new DPFs or setting up clinical trials. To ensure sustainability of this tool, PIONEER and the EAU aim to update the systematic reviews described above on a regular basis to reflect the latest available research on DPFs for PCa.

Acknowledgement

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