

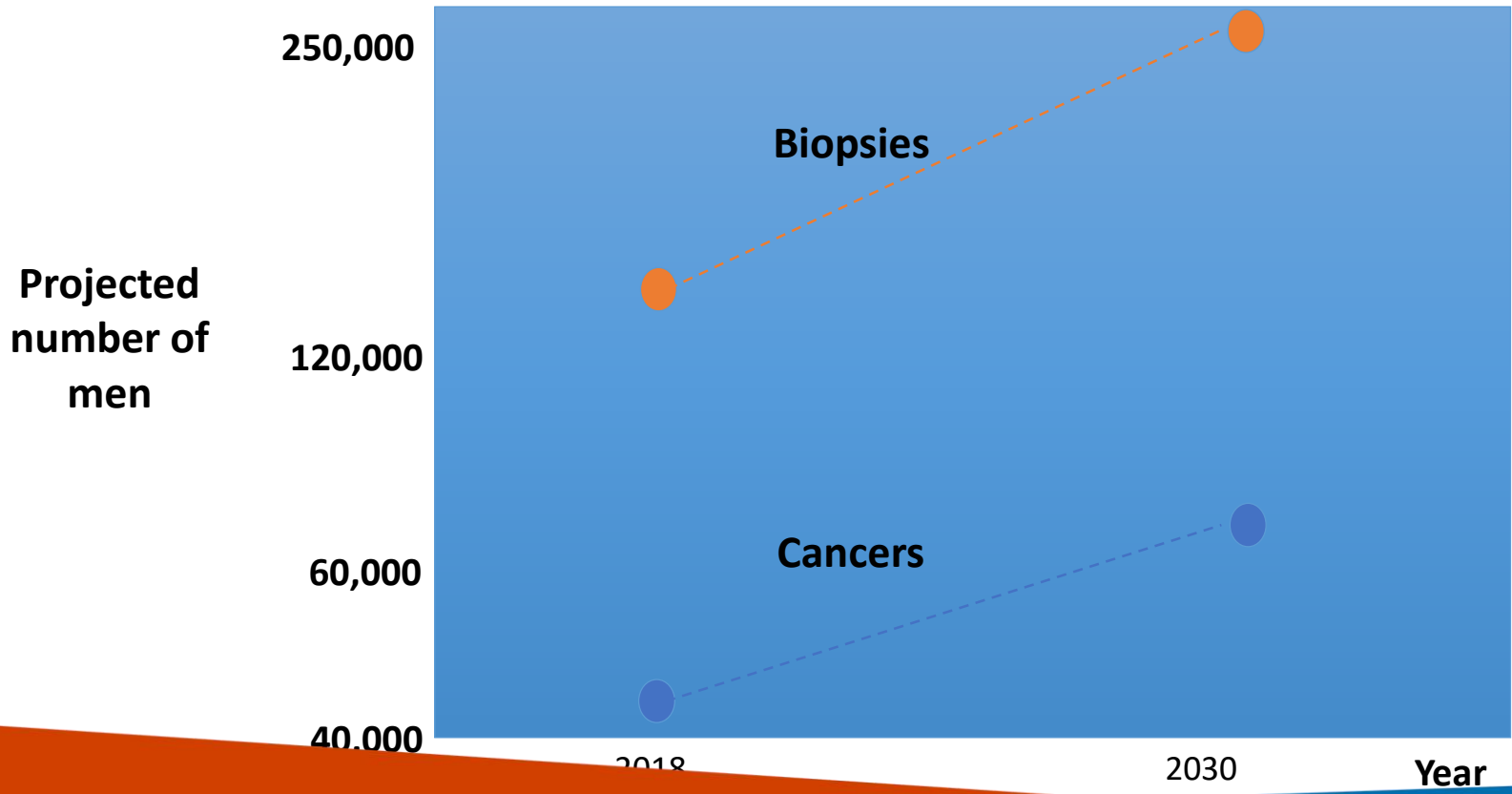
PSA testing and the prostate cancer pathway

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Prostate cancer is a growing health burden



PSA screening

- improves cancer-specific mortality but not overall mortality
- biopsy complications
- over-diagnosis
- over-treatment
- treatment-related complications

In the UK, it was estimated 5% of all men have a PSA testing but latest Bristol show about 30% have a PSA test during their lifetime

PSA AGE-SPECIFIC THRESHOLDS

AGE (years)	PSA VALUE (ng/ml)
40-49	≥ 2.5
50-69	≥ 3
≥ 70	≥ 5

PSA changes

1. High PSA density

0.12ng/ml/ml if a transrectal ultrasound volume has been calculated

2. High PSA velocity

0.35 ng/ml/year for PSA values <3 ng/ml and 0.75ng/ml/year for PSA values ≥ 3 ng/ml

3. PSA in grey area (1 - 2.9) but abnormal free/total PSA ratio

Defined by each lab but usually 20-25% or below is abnormal

56 year old asymptomatic male

No family history

Shall I get a PSA test?

Problems: biopsy, over-diagnosis, over-treatment

Benefit: can reduce cancer-specific mortality and risk of metastases

46 year old asymptomatic Black male

Family history (Father)

Shall I get a PSA test?

Before advising that man, do you know what your local urology centre's practice is?

MRI pre-biopsy?

Avoid biopsy in –ve MRI or biopsy everyone anyway?

Active surveillance for most low risk?

Offer minimally invasive therapies?

Imperial Prostate's RAPID pathway

Rapid Assessment for Prostate Imaging and Diagnosis

Use the latest evidence to improve patient experience and meet national targets

Streamlined clinical pathway

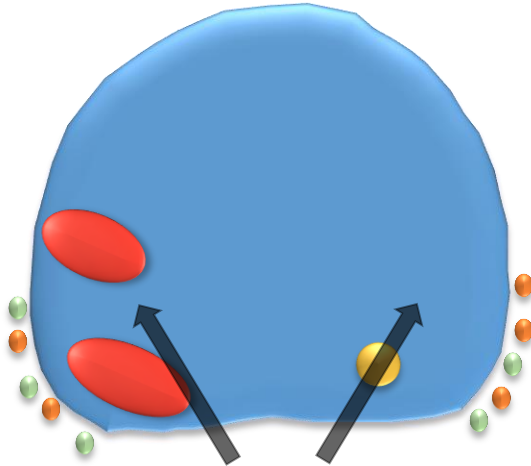
Pre-biopsy state-of-the-art MRI with avoidance of biopsy in men negative scan

Targeted biopsies using latest technology

Transperineal biopsy and no transrectal biopsies

To audit and present regional and centre-specific data for quality improvement

Before RAPID ...



Almost all men biopsied transrectally with clinically indolent cancers identified by chance, and unnecessarily treated

Clinically significant lesions are missed

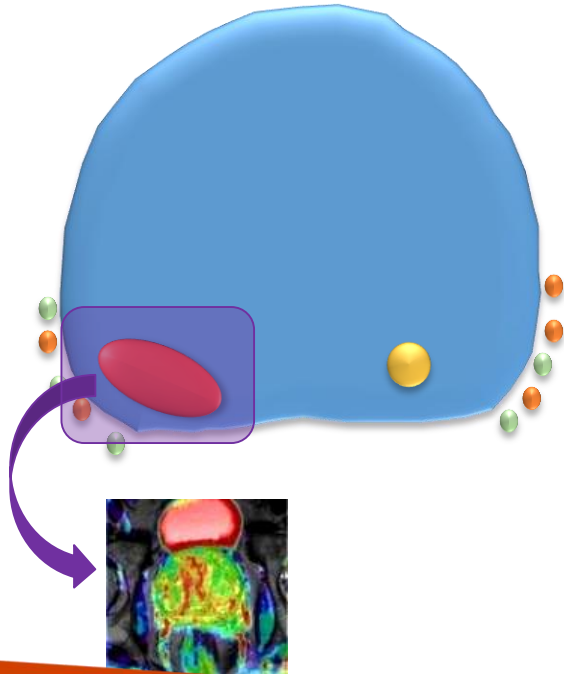
Important cancers are incorrectly classified as unimportant

With RAPID ...

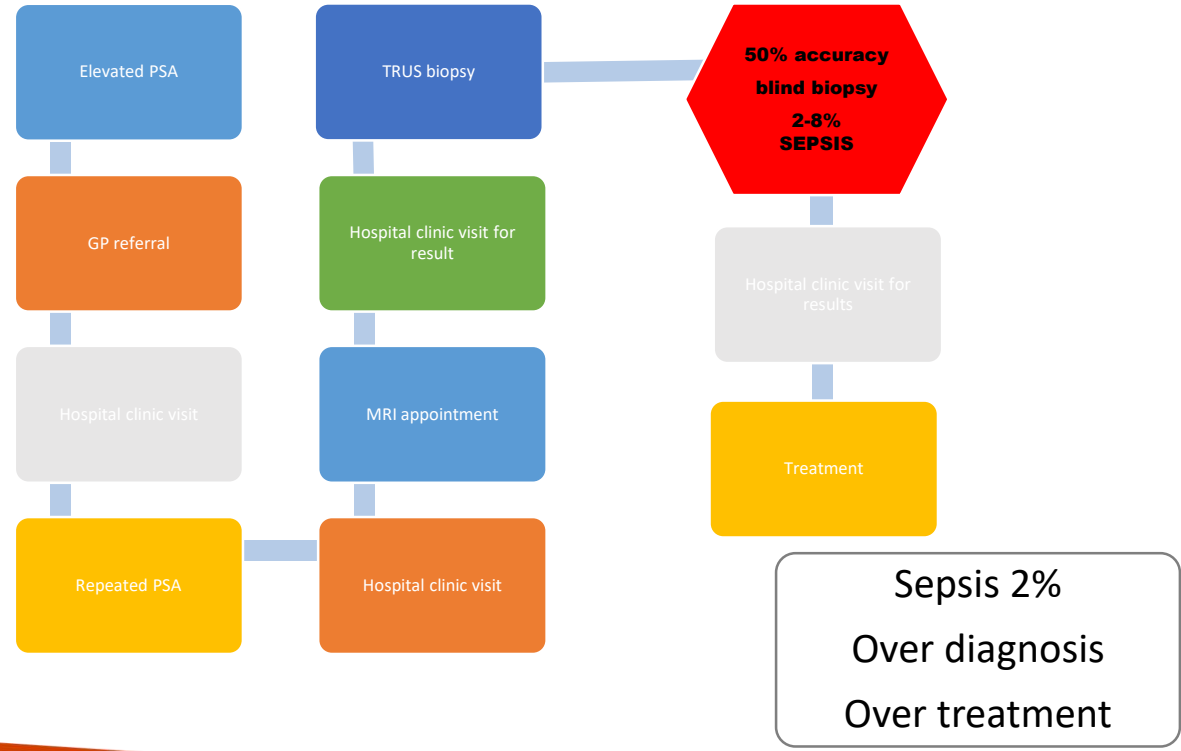
Not all lesions have the potential to progress to invasive and metastatic cancer, so men can avoid a biopsy

MR-Imaging can identify those men that need a biopsy

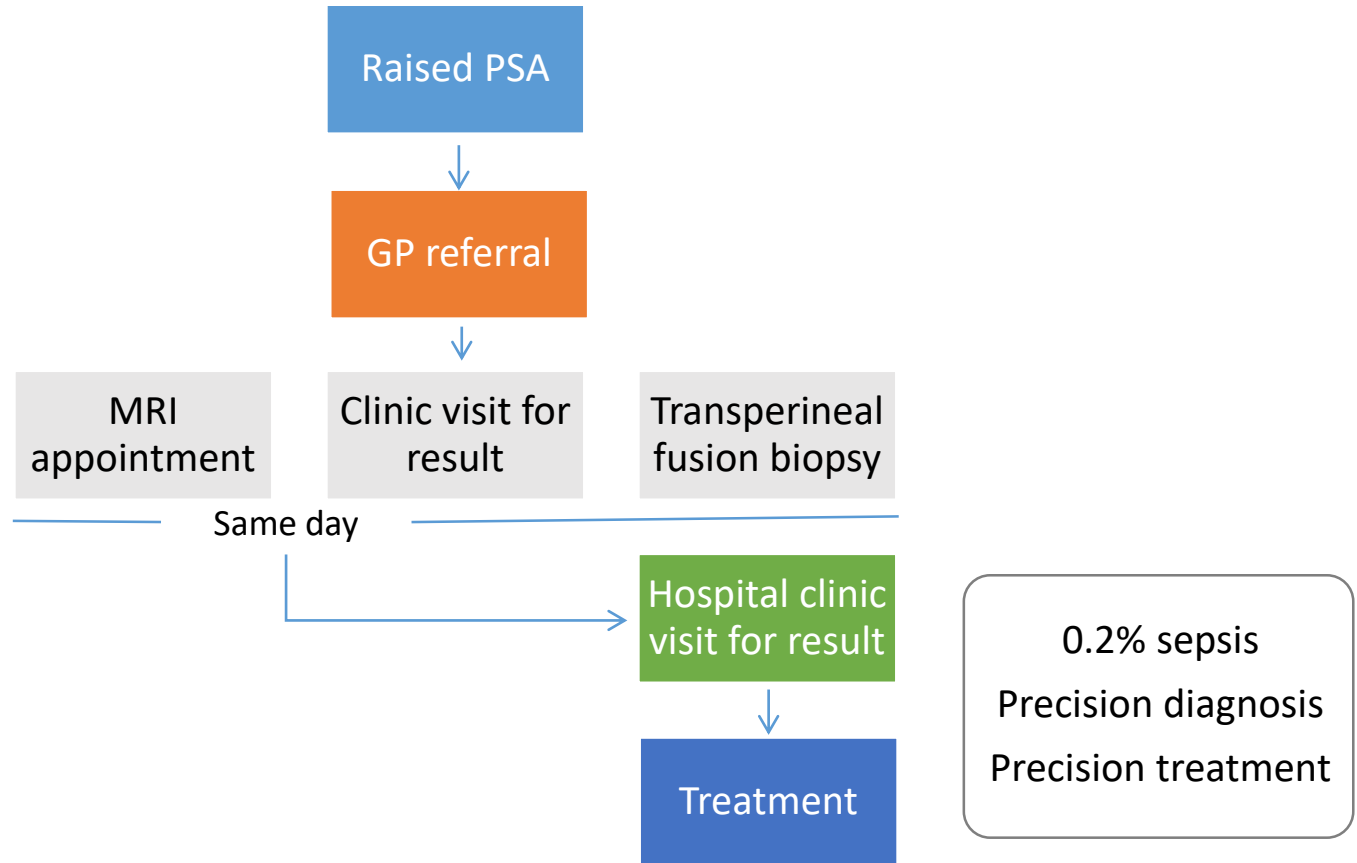
Targeted transperineal biopsy can give more accurate detection and characterisation of cancer with less harms



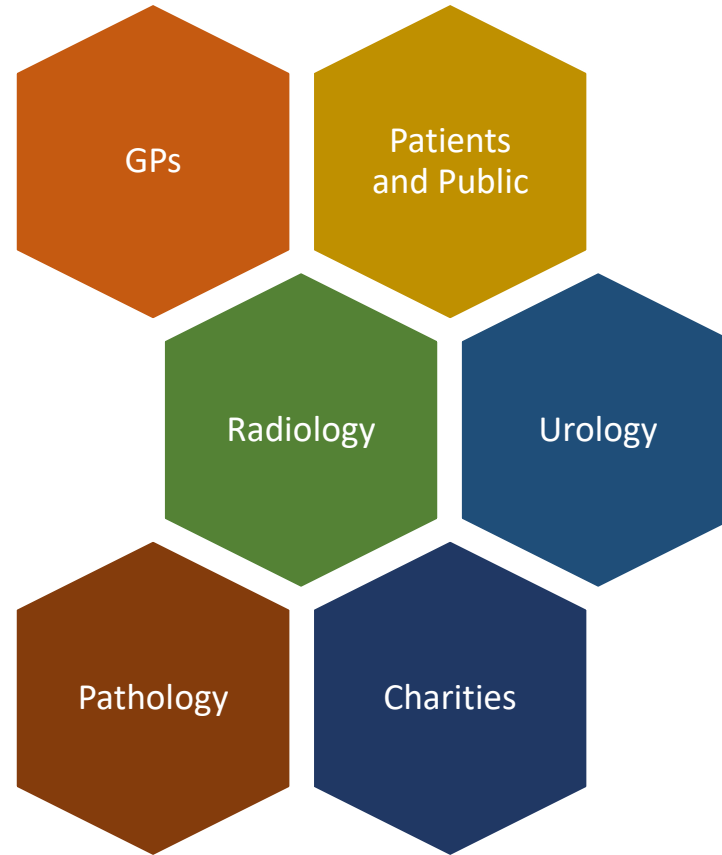
Why the pathway took so long



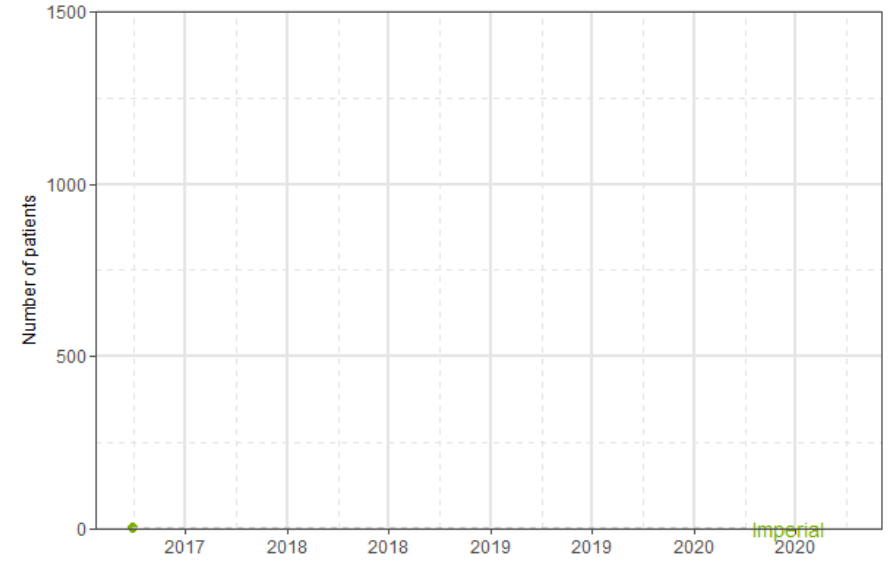
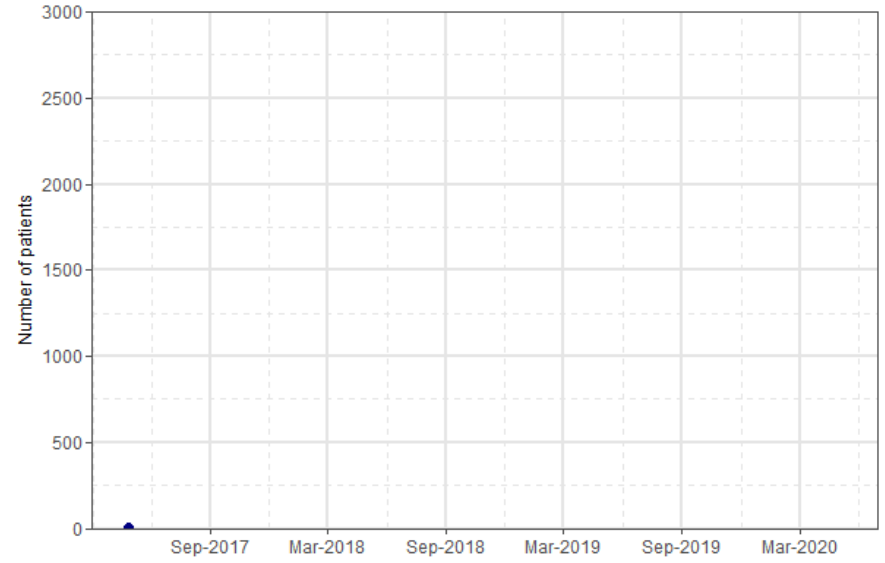
RAPID - Rapid Access Prostate Imaging and Diagnosis



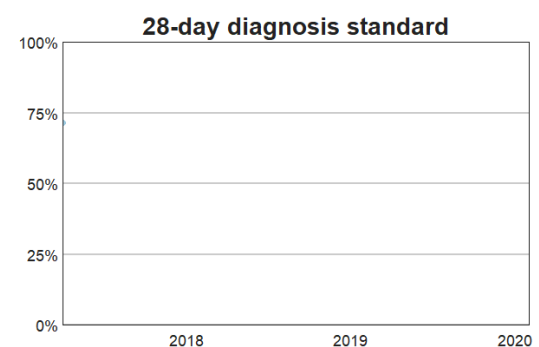
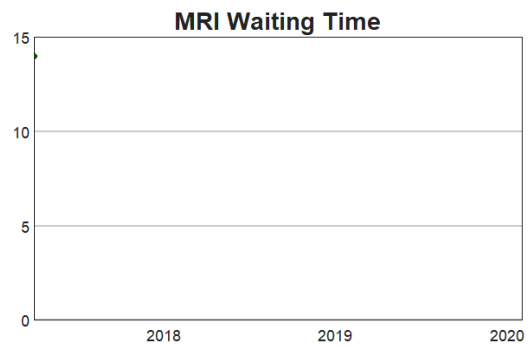
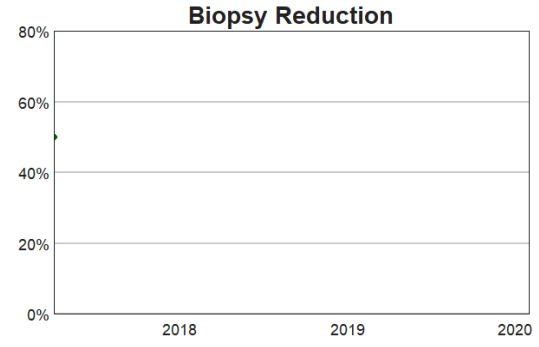
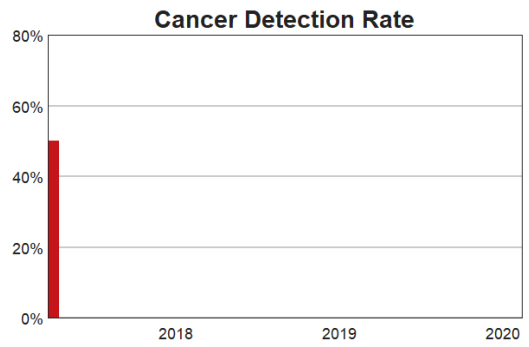
The RAPID team involved multiple institutions, departments and individuals geared to a common cause



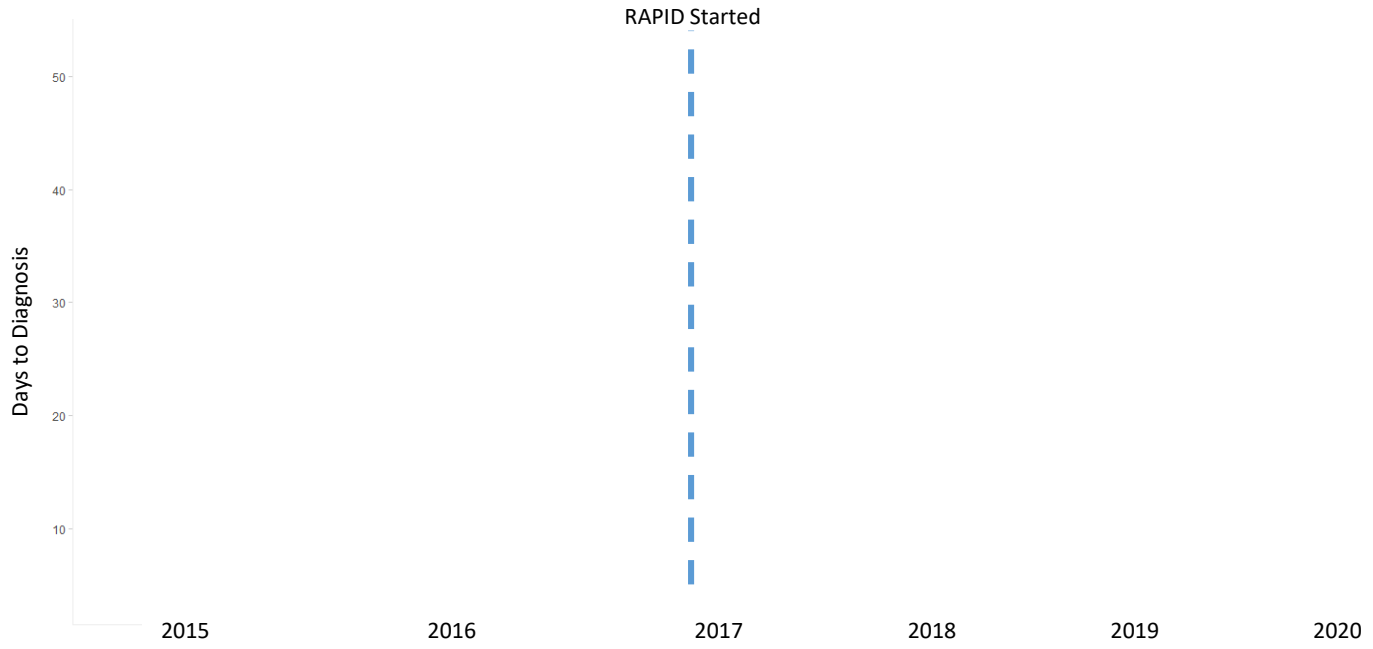
RAPID Patient Numbers



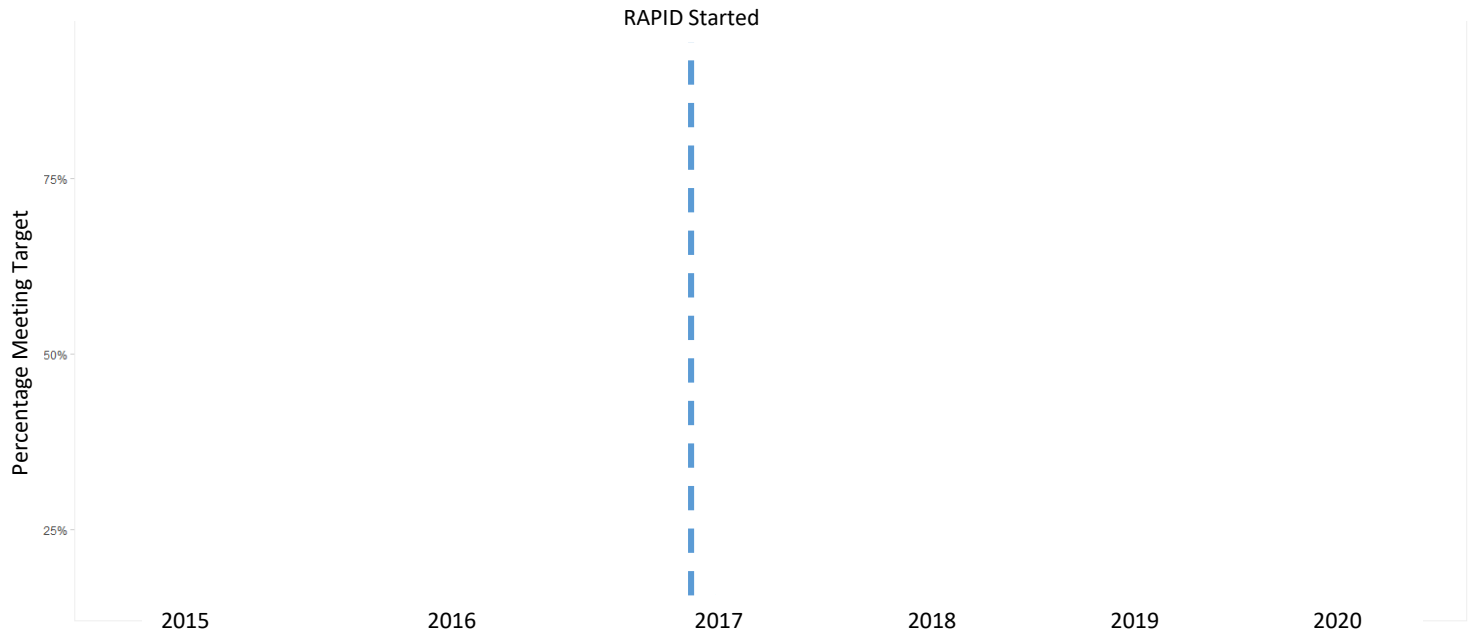
Performance Metrics



Waiting Time Effects

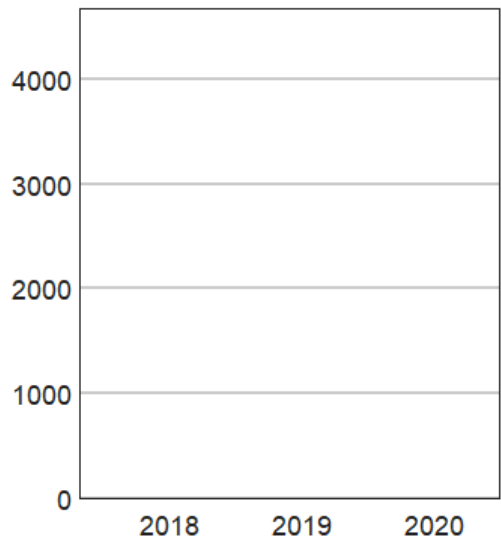


28 Day Waiting Time Target

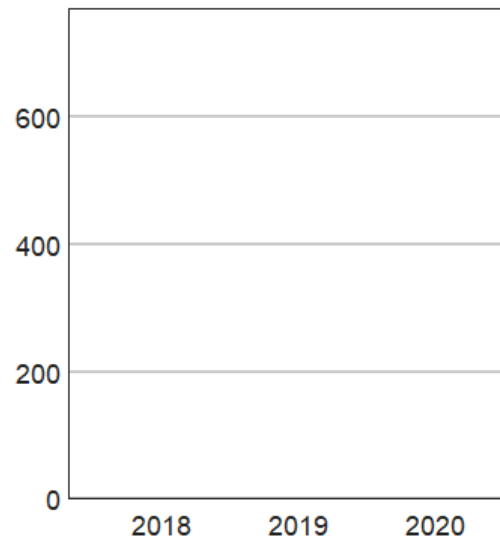


Measures of Impact

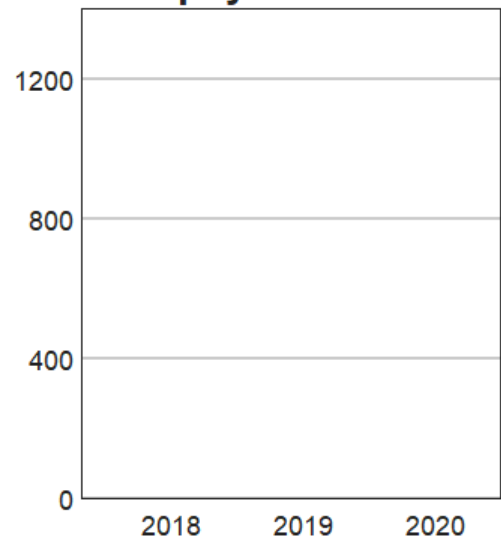
Visit Reduction



Cancer Detection



Biopsy Reduction



PATIENT FEEDBACK

“The speed of the appointment and the one day diagnosis was very important in **reducing 'worry-time' and stress**. Thank you!”

“**It was fast and efficient**. I can now rest as I was thinking negatively (cancer positive) which it was not. Thanks to all the healthcare professionals who took part with my care needs.”

“Very pleased to have completed the entire investigation procedure so quickly, as this greatly **reduced the amount of stress/worry** attached to receiving a second high PSA reading - Thank you!”



Over **2900**
men have been
investigated through
the RAPID pathway



An average of
41% of men
have avoided a
prostate biopsy



Time to diagnosis
fallen to **17**
days



Post-biopsy
sepsis rates have
fallen to **0.1%**

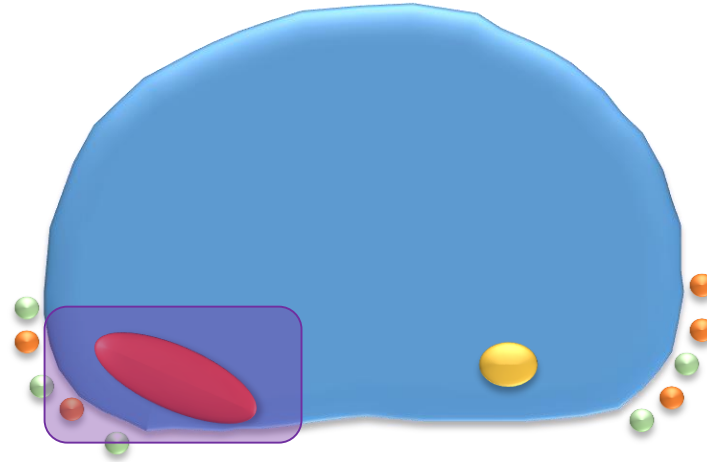


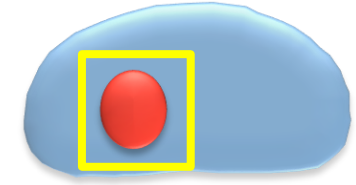
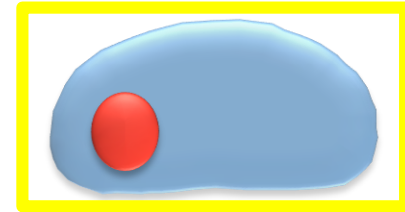
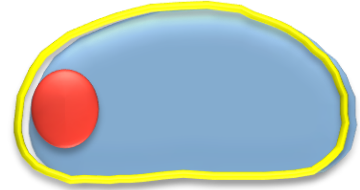
“Excellent patient focus and fantastic speed – from research to implementation whilst ensuring the patient was at the forefront.”

“This project is extremely wide reaching with huge potential for national adoption.”

Focal Therapy

Treating the cancer...not the whole organ





Incontinence
Impotence
Rectal toxicity
Salvage therapy at 5-10 years

Radical surgery
10-20%
30-60%
1%
15-20%

Radical Radiotherapy
10-20%
50-60%
5%
15-20%

Focal therapy
1-2%
5-10%
0.1%
15-20%

Conclusions

The standard transrectal biopsy approach to diagnosing prostate cancer leads to unnecessary harms

Prostate MRI can allow at least one-third of patients to avoid an unnecessary biopsy

Prostate MRI can improve the detection of higher risk cancers and reduce detection of insignificant cancers within a streamlined pathway

An arsenal of treatment options from active surveillance, focal therapy, radiotherapy and robotic prostatectomy are available to offer bespoke models of care