Prostate Pathways

Shonit Punwani
Chair of the UCLH Cancer Collaborative Radiology ERG
• 3rd most common cause of death (> breast cancer)

• 1.5 million men per year investigated in Europe

• Diagnostic paradigm change to mp-MRI with targeted biopsy**

**PROMIS - Ahmed et al. Lancet 2017 389;815-822
The prostate cancer journey...

- suspicion
- biopsy
- treatment
- surveillance
- follow up
Biopsy (12 core) sensitivity was 32.3% overall, 75% for clinically significant cancers, and 11% for non-significant cancers. (Rocco et al. Euro Urol 2006 May;49(5):827-33)

In a group of patients with moderately raised PSA, sensitivity (6 core) is around 60%. (Djavan et al. J Urol 2001 Nov;166(5):1679-83)

A hypervascular lesion is quite specific for ca, but clinical results are disappointing.
Figure 2: Random deployment of the needle leads to detection of small clinically insignificant tumours.

Figure 3a: Random deployment of the needle leads to a clinically significant tumour being missed in the PZ.

Figure 4: Random deployment of the needle leads to a clinically significant tumour being under-sampled and categorised as low volume.

Figure 3b: Random deployment of the needle leads to a clinically significant tumour being missed in the anterior PZ horn.
Report


Technique: T1, T2, diffusion-weighted and dynamic contrast-enhanced images.

Findings: Comparison is made with the previous MRI report dated 2/8/2012. There is still diffuse high pre-contrast T1 signal post-biopsy artefact effecting the right peripheral zone from at the apex and mid-gland, and the apical left anterior transition zone. The prostate volume is 24 cc. There has been a previous TURP. The bladder neck is open.

There is bilateral peripheral zone tumour (5/5).
(i) There is 0.35 cc of right peripheral zone tumour between 8 and 11 o’clock abutting the prostatic capsule, centered at the mid-gland but extending into the base and the apex.
(ii) There is 0.60 cc of left peripheral zone tumour between 3 and 6 o’clock abutting the prostatic capsule, centred at the apex and extending into the mid-gland.

There is also a 0.2 cc left anterior transition zone equivocal signal focus between 1 o’clock and 2 o’clock (3/5) - adenoma or tumour possible. There is low probability of significant tumour elsewhere within the gland (2/5).

There is no macroscopic extracapsular tumour extension. No seminal vesicle tumour invasion. No pelvic lymphadenopathy or seminal vesicle disease.

Conclusion: Bilateral tumour in keeping with the biopsy result. Equivocal left anterior transition zone signal change which would not have been biopsied during a standard TRUS procedure.

Please see page 2 of this report for diagrams & representative images.

Dr Shonit Punwani PhD MRCP FRCR
Consultant Radiologist

<table>
<thead>
<tr>
<th>Overall score</th>
<th>lat R</th>
<th>med R</th>
<th>T1 R</th>
<th>T1 L</th>
<th>med L</th>
<th>lat L</th>
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<tr>
<td>SV</td>
<td>1</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>base</td>
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<td>3</td>
<td>2</td>
<td>5</td>
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<tr>
<td>apex</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sphincter</td>
<td>1</td>
<td>1</td>
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</tbody>
</table>

Prostate volume: 24 cc
AP diameter: 3.9 cm
Transverse: 4.6 cm
Cranio-caudal: 2.6 cm

Scale
1= no disease
2= low probability of disease
3= equivocal
4= high probability of disease
5= certain disease
PROMIS Study results

Diagnostic accuracy of multi-parametric MRI and TRUS biopsy in prostate cancer (PROMIS): a paired validating confirmatory study

Hashim U Ahmed*, Ahmed El-Shater Bosaily*, Louise C Brown*, Rhian Gabe, Richard Kaplan, Mahesh K Parmar, Yolanda Collaco-Moraes, Katie Ward, Richard G Hindley, Alex Freeman, Alex P Kirkham, Robert Oldroyd, Chris Parker, Mark Emberton, and the PROMIS study group†

<table>
<thead>
<tr>
<th></th>
<th>MP-MRI, % (95% CI)</th>
<th>TRUS-biopsy, % [95% CI]</th>
<th>Test ratio* [95% CI]</th>
<th>p value</th>
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</thead>
<tbody>
<tr>
<td>Primary definition (Gleason score ≥4+3 or cancer core length ≥6 mm), prevalence of clinically significant cancer 230 (40%, 36–44%)</td>
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<tr>
<td>Sensitivity test</td>
<td>93 (88–96)</td>
<td>48 (42–55)</td>
<td>0.52 (0.45–0.60)</td>
<td>p&lt;0.0001</td>
</tr>
<tr>
<td>Specificity test</td>
<td>41 (36–46)</td>
<td>96 (94–98)</td>
<td>2.34 (2.08–2.68)</td>
<td>p&lt;0.0001</td>
</tr>
<tr>
<td>PPV</td>
<td>51 (46–56)</td>
<td>90 (83–94)</td>
<td>8.2 (4.7–14.3)</td>
<td>p&lt;0.0001</td>
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<tr>
<td>NPV</td>
<td>89 (83–94)</td>
<td>74 (69–78)</td>
<td>0.34 (0.21–0.55)</td>
<td>p&lt;0.0001</td>
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MRI-Targeted or Standard Biopsy for Prostate-Cancer Diagnosis

<table>
<thead>
<tr>
<th>Outcome</th>
<th>MRI-Targeted Biopsy Group (N=252)</th>
<th>Standard-Biopsy Group (N=248)</th>
<th>Difference†</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biopsy outcome — no. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>No biopsy because of negative result on MRI</td>
<td>71 (28)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benign tissue</td>
<td>52 (21)</td>
<td>98 (40)</td>
<td></td>
<td></td>
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<tr>
<td>Atypical small acinar proliferation</td>
<td>0</td>
<td>5 (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-grade prostatic intraepithelial neoplasia</td>
<td>4 (2)</td>
<td>10 (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gleason score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3+3</td>
<td>23 (9)</td>
<td>55 (22)</td>
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<td></td>
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<tr>
<td>3+4</td>
<td>52 (21)</td>
<td>35 (14)</td>
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</tr>
<tr>
<td>3+5</td>
<td>2 (1)</td>
<td>1 (&lt;1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4+3</td>
<td>18 (7)</td>
<td>19 (8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4+4</td>
<td>13 (5)</td>
<td>6 (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4+5</td>
<td>7 (3)</td>
<td>2 (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5+5</td>
<td>3 (1)</td>
<td>1 (&lt;1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No biopsy‡</td>
<td>4 (2)</td>
<td>3 (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withdrawal from trial§</td>
<td>3 (1)</td>
<td>13 (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinically significant cancer¶</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention-to-treat analysis — no. (%)</td>
<td>95 (38)</td>
<td>64 (26)</td>
<td>12 (4 to 20)</td>
<td>0.005</td>
</tr>
<tr>
<td>Modified intention-to-treat analysis — no./total no. (%)</td>
<td>95/245 (39)</td>
<td>64/235 (27)</td>
<td>12 (3 to 20)</td>
<td>0.007</td>
</tr>
<tr>
<td>Per-protocol analysis — no./total no. (%)</td>
<td>92/235 (39)</td>
<td>62/227 (27)</td>
<td>12 (3 to 20)</td>
<td>0.007</td>
</tr>
<tr>
<td>Clinically insignificant cancer — no. (%)</td>
<td>23 (9)</td>
<td>55 (22)</td>
<td>-13 (-1.9 to -7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Maximum cancer core length — mm</td>
<td>7.8±4.1</td>
<td>6.5±4.5</td>
<td>1.0 (0.0 to 2.1)</td>
<td>0.053</td>
</tr>
<tr>
<td>Core positive for cancer — no./total no. of cores (%)</td>
<td>422/967 (44)</td>
<td>515/2788 (18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men who did not undergo biopsy — no. (%)</td>
<td>78 (31)</td>
<td>16 (6)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The prostate cancer journey...

- suspicion
- biopsy
- treatment
- surveillance
- follow up
Access to mpMRI before biopsy increasing but parts of UK are still 'appalling'

We're calling on the NHS to make rollout of the revolutionary diagnostic technique for prostate cancer a priority, after new data shows a huge variation in the availability and quality of mpMRI scans across the UK. Check out how your local hospitals are performing in our [online map], and find out more about the first clinical consensus on mpMRI we’ve helped to create.
Availability of mpMRI by Trust

- Available to PROMIS standard
- Available, but not to PROMIS standard
- Not available
- Available to PROMIS standards but limited ...
- No information
- Eligible patients referred elsewhere
National implementation of multi-parametric magnetic resonance imaging for prostate cancer detection – recommendations from a UK consensus meeting


1Centre for Medical Imaging, 3Division of Surgery and Interventional Science, Faculty of Medical Sciences, 5Department of Radiology, 6Department of Medical Physics, 14Division of Urology, 23Division of Nuclear Medicine, University College London Hospitals NHS Foundation Trust, University College London, 4Division of Surgery, Department of Surgery and Cancer, Imperial College London and Imperial Urology, Imperial College Healthcare NHS Trust, 11The Society and College of Radiographers, 13Prostate Cancer UK, 22London School of Hygiene and Tropical Medicine, London, 2Department of Urology, Hertfordshire and Bedfordshire Urological Cancer Centre, 18Department of Radiology, Lister Hospital, Stevenage, Hertfordshire, 7Department of Radiology, Addenbrooke’s Hospital and University of Cambridge, 10Department of Urology, Addenbrooke’s Hospital and University of Cambridge, Cambridge, 8School of Health and Related Research, University of Sheffield, Sheffield, 9Department of Radiology, Freeman Hospital, Newcastle upon Tyne, 12Department of Urology, NHS Lothian, Western General Hospital, Edinburgh, 15Division of Cancer Research, Ninewells Hospital, Dundee, 16Paul Strickland Scanner Centre, Mount Vernon Hospital, Northwood, Middlesex, 17Department of Academic Urology, Royal Marsden Hospital, Sutton, Surrey, 19Department of Radiology, Greater Glasgow and Clyde NHS Trust, Glasgow, 20Department of Radiology, Royal Sussex County Hospital Brighton and Brighton and Sussex Medical School, Brighton, Sussex, and 21Division of Cancer and Genetics, School of Medicine, Cardiff University, Cardiff, UK
I. mpMRI Requests

II. mpMRI Acquisition Protocol Updates

III. mpMRI Clinical Reporting

IV. Quality Assurance/quality Control of mpMRI

V. Management of patients

VI. mpMRI Training
Method

- **UROLOGISTS**
  - Jim Adshead
  - Hashim U Ahmed (London)
  - John Graham
  - Christof Kastner (Cambridge)
  - Alan McNeill
  - Caroline Moore (London)
  - Ghulam Nabi (Dundee)

- **RADIOLOGISTS**
  - Clare Allen (London)
  - Tristan Barrett (Cambridge)
  - Alexander PS Kirkham (London)
  - Phil Haslam (Newcastle)
  - Anwar R. Padhani
  - Amit Patel (Hertfordshire)
  - Jonathan Richenberg (Brighton)
  - Shonit Punwani (London)

- **RADIOGRAPHERS**
  - Darren Walls (London)
  - Jacqueline Pursey (Glasgow)
  - Alexandra Lipton

- **ONCOLOGISTS**
  - Chris Parker (London)
  - John Staffurth (Cardiff)

- **PHYSICIST**
  - Alan Bainbridge (London)
Round 1: Individual questionnaire completion

Panelists were asked to rate their agreement with questionnaire statements for which they considered they had sufficient expertise on a 9-point scale (ranging from 1 “strongly disagree” to 9 “strongly agree”). If they lacked expertise for a particular item, they scored “0” to indicate that they were non-scoring experts for that item.
Round 2: Face-to-face meeting discussion

Fifteen attending panel members were shown the first-round score distribution for each questionnaire statement. After each statement discussion, the panelists rescored the item. Items scored by at least eight panel members were included in the results. Nine consensus statements were added, 23 removed and 39 statements reworded for clarity. Eight items responded to by <8 panelists were excluded reducing the number of consensus statements to 354.
**Interpretation of the results**

A panel median score of $\geq 7$ constituted “agreement” and a median score $\leq 3$ for “disagreement”. A median score between 4-6 reflected “uncertainty”. For a statement to reach “consensus”, a majority of >70% of panellists had to score within the category containing the median score (6).
Results

Table 1 shows the percentage number of items reaching consensus in each section of the questionnaire.

Table 1.

<table>
<thead>
<tr>
<th>Section</th>
<th>Pre-meeting % number of consensus items</th>
<th>Post-meeting % number of consensus items</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. mpMRI Requests</td>
<td>50 (6/12)</td>
<td>83 (10/12)</td>
</tr>
<tr>
<td>II. mpMRI Acquisition Protocol Updates</td>
<td>29 (12/41)</td>
<td>61 (25/41)</td>
</tr>
<tr>
<td>III. mpMRI Clinical Reporting</td>
<td>30 (43/141)</td>
<td>65 (85/131)</td>
</tr>
<tr>
<td>IV. Quality Assurance/quality Control of mpMRI</td>
<td>44 (44/100)</td>
<td>53 (47/89)</td>
</tr>
<tr>
<td>V. Management of patients</td>
<td>21 (12/56)</td>
<td>44 (24/54)</td>
</tr>
<tr>
<td>VI. mpMRI Training</td>
<td>38 (10/26)</td>
<td>63 (17/27)</td>
</tr>
<tr>
<td></td>
<td>34 (127/376)</td>
<td>59 (208/354)</td>
</tr>
</tbody>
</table>
Section I: Who can request prostate mpMRI?

The panel agreed in consensus that mpMRI requests should be made by urologists, uro-oncologists, and specialist urology nurses who would act as a filter to determine the appropriateness of incoming requests. Other clinical teams may also request prostate mpMRI with prior urological consultation to ensure effective communication of mpMRI results and continuity of care. There was consensus that general practitioners (GPs) should not directly request prostate mpMRI and patients should not self-refer for prostate mpMRI.

It was unanimously agreed that mpMRI must not be offered to all men prior to clinical assessment and that elevated PSA should be assessed with other clinical factors such as age, family history, digital rectal examination (DRE) findings, urine analysis for infection, PSA kinetics and previous trans-rectal ultrasound (TRUS) biopsy results to determine the appropriateness of prostate mpMRI referral.
Table 2. Prostate mpMRI acquisition protocol updates

- The minimum and optimal field strengths at which prostate mpMRI should be conducted is 1.5T and 3T respectively
- Endo-rectal coils and rectal catheters for gas voiding do not need to be used routinely
- Anti-peristaltic agents should be incorporated in routine practice (unless contra-indicated)
- Axial imaging should be orientated axial to the patient and not to the position of the prostate gland

- T2 sequences should be acquired in all three planes and should be obtained as three separate acquisitions (axial, coronal and sagittal)
- Single 3D T2 imaging sequence was not adequate to replace the three separate 2D acquisitions
- T2 sequences with a large field of view to cover abdominal nodes are not necessary
- A maximum voxel size in-plane resolution of T2 sequences should be 0.7mm or better

- The minimum high-b value for diffusion-weighted sequences should be \( b=1400 \text{ s/mm}^2 \) at 1.5T and \( b=2000 \text{ s/mm}^2 \) at 3T
- The maximum voxel size in-plane resolution of DWI should as far as possible \( \leq 2\text{mm} \)

- Quantitative pharmacokinetic DCE-MRI modelling or curve shape parametric evaluation are not necessary
- DCE analysis should be performed with visual (qualitative) anatomical evaluation in the early arterial enhancement images of the prostate
- The temporal resolution of DCE-MRI sequences can be up to 15 seconds for a high spatial resolution and anatomical interpretation of DCE images
Table 3. Consensus recommendations on clinical mpMRI reports

- The image quality of the mpMRI be reported.
- mpMRI should be scored to rule out Gleason score 7 (including 3 + prominent 4), and/or volume ≥ 0.5cc, and/or extra prostatic extension (EPE)/ seminal vesicle invasion
- The mpMRI scoring system recommended is the ‘Likert-assessment’ system (both for lesion-scoring and whole gland scoring)
- Equivocal prostate mpMRI (Likert-impression 3) should be double-read if avoiding biopsy is under consideration
- MpMRI scores that are discordant with biopsy results should be retrospectively re-read

- The following should be scored on a 1-5 scale for likelihood of involvement
  - Extra prostatic extension
  - SV involvement
  - Bladder neck involvement
  - Neurovascular bundle involvement
  - External sphincter involvement
  - Rectal wall involvement
  - Bladder wall involvement
  - Peripheral zone (PZ) and Transition zone (TZ) tumour should be measured from any sequence on which it is best seen

- The following quantitative metrics should be included within an mpMRI report
  - Prostate gland volume and tumour size should be measured on T2-weighted imaging using 3-diameters x 0.52 (prolate ellipse formula)
  - To ensure consistency, tumour should be measured as 3-diameters or volume estimation by the product of 3 diameters x 0.52
  - For software-targeted biopsy purposes, tumour should be contoured on the sequence required by targeted biopsy fusion software
  - For targeted biopsy purposes, in a lesion > 1cm, the most suspicious area/spot for significant tumour, (i.e the “hot-spot”) should be additionally indicated (e.g. by contouring, via arrow-heads, etc).
Table 5 Recommendations for using the mpMRI scores to inform the biopsy decision

<table>
<thead>
<tr>
<th>mpMRI scores 1-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No immediate biopsy is recommended</td>
</tr>
<tr>
<td>• Biopsy can be considered as part of a shared decision process with the patient if PSA density is elevated or clinical concerns persist</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>mpMRI score 3</th>
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<tbody>
<tr>
<td>• Immediate biopsy if PSA density is elevated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>mpMRI scores 4-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Immediate biopsy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>mpMRI scores 4-5 and targeted biopsy is negative</th>
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<tbody>
<tr>
<td>• Discuss in multi-disciplinary team meeting</td>
</tr>
</tbody>
</table>
Table 6 summarizes the recommendations in the training section.

**Agreement in Consensus**
- There should be a competency exam in prostate mpMRI prior to starting independent reporting
- Attendance on a training course should be made mandatory prior to starting independent reporting
- There should be evidence of self-directed learning
- Prostate mpMRI training course for non-reporters should differ from the reporters’ course and adapted to their specialty field
- There should be a national accreditation for prostate mpMRI reporting
- Certified, standardised training for Prostate mpMRI should be provided by a national body

- Prior to commencing independent mpMRI reporting, reporters should attend a combination of
  - A core theoretical mpMRI course
  - Hands-on practice at workstations
  - Supervised reporting
  - MDT-type workshops aimed at discussing patient-based clinical scenarios

- Hands-on training may be given by centres carrying out a minimum number of ≥ 250 cases/year
Request for Prostate Multi-parametric MRI
Request for Prostate Multi-parametric MRI

Prostate Multi-parametric MRI Acquisition
Request for Prostate Multi-parametric MRI

Prostate Multi-parametric MRI Acquisition

Prostate Multi-parametric MRI Reporting

Prostate Multi-parametric MRI: Training & Maintaining Expertise

Patient management based on mpMRI suspicion levels for cancer
Research has shown by implementing one stop diagnostic services fewer men are biopsied, resulting in less harm to patients and reduced costs, and trusts are able to achieve an improvement of between 19 and 51 per cent in 62 day waiting time, from referral to treatment, compliancy.

We are supporting trusts across our region as well as nationally to implement one stop clinics through the one stop 'how to guide'. This guide, written in collaboration with Royal Free NHS Foundation Trust who have set up a successful one stop service, offers trusts a step by step guide to setting up a similar service. It has been estimated that, if all trusts across our network ran an effective one stop service 100 breaches could be saved every quarter.

**MRI reporting training and scanner optimisation**

UCLH Cancer Collaborative has helped sponsor a masterclass in prostate diagnosis for urologists and radiologists across the region.

The two-day interactive MRI masterclass was developed by the specialist prostate team that includes Veeru Kasisvisvanathan, Clare Allen, Caroline Moore and Mark Emberton. Urologists and radiologists, with a special interest in prostate cancer, working across north central and east London, participated in the course to develop the consistent use of high quality MRI across the region to the benefit of patients.

Clinicians' performance was measured at the beginning and the end of the course and showed a significant improvement in MRI reporting, with urologists as well as radiologists benefitting from the course.

"This was a fantastic opportunity for us to share our clinical expertise in using MRI to diagnose and manage prostate cancer. The course helped colleagues to understand how MRI imaging can influence treatment as well as how MRI can help guide prostate biopsy.

**Veeru Kasisvisvanathan, UCL**

**National ‘best practice pathway’**

As part of the national Cancer Vanguard we are working with colleagues in Greater Manchester and RM Partners to develop and implement a best practice timed pathway for prostate cancer. The aim of this is to develop a new optimal timed pathway that can be adopted nationally and reduce the variation of diagnostic services across the NHS. The focus of this pathway will be to ensure all patients have access to high quality diagnostic services (mentioned above) in a short space of time. This pathway aims to provide patients with a confirmed diagnosis within 3 weeks of referral to hospital.

**Robotic surgery**

We are also leading the way in prostate cancer treatment. The UCLH Cancer Collaborative area has the largest centre for robotic prostatectomy, a surgical procedure which removes the prostate.

Surgeons at UCLH have reached a significant milestone this Movember – they’ve recently performed the 500th prostatectomy this year using robotic technology. This makes UCLH the largest centre in the UK, enabling more men to live normal, fully functioning lives beyond prostate cancer. As robotic surgery is minimally invasive, patients can expect to leave hospital the day after their surgery and be back to their day-to-day lives in two weeks.

Conventional prostatectomy is a major procedure taking three to four hours and involving a two to three night stay in hospital and a lengthy recovery. Robotic surgery has changed that – it gives us the precision to remove the cancerous tumour preserving the tissues and functions around it. It's given men their lives back after prostate cancer.

**Professor John Kelly (UCLH)**

**Next steps**

UCLH Cancer Collaborative is making great strides in improving prostate cancer diagnosis and treatment across the region providing financial and project management support, as well as access to training and expert support. As global leaders of prostate cancer innovation it is great to see this expertise expanding nationally as well as across Europe.

[www.uclh.nhs.uk/cancercollaborative](http://www.uclh.nhs.uk/cancercollaborative)

The UCLH Cancer Collaborative is a part of the national Cancer Vanguard, working with Greater Manchester Cancer Vanguard Innovation and RM Partners

[www.uclh.nhs.uk/cancercollaborative](http://www.uclh.nhs.uk/cancercollaborative)
Daily triage of GP timed prostate cancer referral

- Straight to clinic (same day MRI after clinical review)
  - No immediate MRI eg contraindicated or not fit for radical treatment
    - Determine need and discuss systematic biopsy vs PSA monitoring
      - Offer biopsy where PSA density >0.15
      - Assess risk factors eg strong FH early Pca
  - Targeted +/- systematic biopsy (TP where needed for access or local practice)
- Men with UTI/positive MSU to be investigated off timed pathway
  - No abnormality on MRI
- Straight to test (MRI)
  - Abnormality on MRI

Pathology report within 5 working days
Pathology report within 5 working days

Negative biopsy
- Team review if MRI 4/5
- MRI 1-3 – discharge to GP

Positive biopsy
- Consider staging for high risk disease

OPD for results

SMDT for review & planning (D14/21)

ADT/Systemic
- Review in to discuss & plan
- Commence ADT

Surgery / Focal Therapy
- Discuss active treatment options and staging for high risk disease
- Appointments with treatment teams

Radiotherapy ± ADT

Surveillance
- Review in clinic to discuss and plan
- Advise on PSA/MRI/biopsy plans

Close Pathway

Day 62

Admit & treat

Attend & treat

Close Pathway

Close Pathway