The Royal College of Pathologists
Pathology: the science behind the cure

The Royal College of Pathologists' response to the UK National Screening Committee consultation on prostate cancer screening

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The College view on prostate cancer screening

With prostate cancer being one of the most common cancers affecting men globally, there is need for a multi-pronged approach to tackling a disease that affects 63,000+ men in the UK alone per year. The ethnic differences in prostate cancer mortality and morbidity are a concern. Black men face a higher rate of diagnosis and high grade disease (which means a tumour is likely to grow and spread faster).

Improving prostate cancer outcomes without triggering a wave of overdiagnosis requires a nuanced approach. The College supports the introduction, in the future, of smarter screening of high risk groups, better biopsy strategies, and AI-augmented diagnosis. These need to be implemented with care. Pathologists are vital for almost every aspect of patient care, from diagnostic testing and treatment advice to using cutting-edge genetic technologies and guiding risk-stratified management. Their workload must be respected and supported with staffing, technology, and training.

To truly improve men's health without fuelling overdiagnosis we recommend:

- Focus screening efforts on high-risk groups, such as black men, those with BRCA1/2 mutations and those with a family history of the disease, rather than blanket screening.
- Implement MRI diagnostic pathways, ensuring biopsies are only taken when imaging suggests clinically significant disease.

- Invest in training and retaining histopathologists and expand the use of digital pathology to reduce bottlenecks.
- Use pathology data to refine prognostic models, incorporating histological, molecular, and imaging features to personalise treatment.
- Promote active surveillance for low-risk disease, relying on clear criteria and regular monitoring rather than immediate treatment.
- Encourage trials such as TRANSFORM to examine the utility of these newer techniques rather than blanket adoption.

Stratified screening and risk-based approaches

Current discussions around prostate cancer screening in Europe and the UK centre on risk-stratified approaches. Large-scale studies, such as the European Randomized Study of Screening for Prostate Cancer (ERSPC), have shown that PSA screening can reduce prostate cancer mortality by around 20%, but at the cost of high overdiagnosis and overtreatment.

Histopathology can support better stratification by integrating emerging diagnostic tools:

- MRI-targeted biopsies, rather than random systematic sampling, are improving diagnostic yield for significant cancer and reducing unnecessary biopsies.
- Molecular biomarkers and genomic classifiers (e.g., Decipher, Oncotype DX) may help predict tumour behaviour and guide active surveillance versus intervention.

Implementing these tools at scale, however, introduces workload and training demands on pathology departments.

The rise in prostate biopsies, especially with the introduction of pre-biopsy MRI and fusion-targeted biopsies, has increased the complexity and volume of cases that pathologists face.

The College workforce census 2025 found that 47% of pathologists are aged 50 and over, suggesting a potential retirement cliff edge within the next decade. 78% of pathologists do not believe current staffing levels are adequate to ensure long-term stability of pathology services and to meet growing demand. Simultaneously, prostate cancer incidence continues to increase, and the push for early detection intensifies.

Digital pathology and AI solutions offer some promise. AI tools trained to detect and grade prostate cancer are being piloted and validated, including solutions like Paige Prostate and Ibex, which have demonstrated non-inferiority to human pathologists in detecting malignancy and grading. But adoption is still slow, and regulatory frameworks and trust remain barriers.

The role of pathologists in diagnosis and management

Histopathology is central to the diagnosis and grading of prostate cancer. Following a prostate biopsy - often triggered by raised PSA (Prostate-Specific Antigen) levels - pathologists assess the tissue, assign Gleason scores (a system to evaluate the aggressiveness of prostate cancer), and determine prognostic grade groups. These grades guide treatment, from active surveillance to radical intervention.

Not all prostate cancers behave in a predictable manner. Many are characterised by slow growth and would not cause clinical harm during a man's lifetime. Early diagnosis may not alter disease course (the lag time) and thus men may suffer unnecessary harm in terms of earlier surgery and psychological harm from the knowledge of a cancer diagnosis.

Histopathology also has a pivotal role in distinguishing between clinically significant and insignificant disease.

Challenges of overdiagnosis and overtreatment

Overdiagnosis is a critical issue. PSA testing, while simple and accessible, lacks specificity. It detects many slow-growing tumours that would never progress to symptomatic or lethal disease. As a result, many men undergo biopsies and even radical treatments that may have long-term side effects - such as incontinence and impotence - without survival benefit.

Autopsy studies suggest that incidental prostate cancer is found in up to 70% of men over 80, yet most of these men die with, not from, the disease (Sakr et al., 1996). Thus, any public health strategy to reduce mortality must avoid increasing detection of these slow growth cases.

We need to ensure that more men at high risk of clinically significant prostate cancer are diagnosed early. However, the diagnosis of insignificant cancers that never become a danger to men's lives is a great concern. There are trials underway such as TRANSFORM to help this.

Pathology input in major clinical trials for screening studies has not been funded or accounted and there has not been any discussion or planning for the anticipated increase in pathology work load that this will create. With most trusts and management undergoing staff shortages and recruitment freezes, the decision to screen or not screen should come with responsibility and reassurance of adequate and appropriate staffing of specialist teams from managerial structures.

If overdiagnosis leads to large number of patients with clinically insignificant disease on active surveillance, then this could affect availability of scans and clinic appointments for other patients with clinically significant disease (not just prostate cancer). This would be particularly true if blanket screening (which fortunately RCPath and the screening committee do NOT recommend) programme was adopted.

Screening for cancer is a highly complex activity which risks causing harm as well as benefits. Often the harms of late diagnosis are seen clearly while those of overdiagnosis

are not well represented. We hope that the cutting edge UK trials such as TRANSFORM will shed further light on this decision which should be kept under review.'

Contact details

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About the Royal College of Pathologists

The Royal College of Pathologists is a professional membership organisation with more than 11,000 fellows, affiliates and trainees, of which 23% are based outside of the UK. We are committed to setting and maintaining professional standards and promoting excellence in the teaching and practice of pathology, for the benefit of patients.

Our members include medically and veterinary qualified pathologists and clinical scientists in 17 different specialties, including cellular pathology, haematology, clinical biochemistry, medical microbiology and veterinary pathology.

The College works with pathologists at every stage of their career. We set curricula, organise training and run exams, publish clinical guidelines and best practice recommendations and provide continuing professional development. We engage a wide range of stakeholders to improve awareness and understanding of pathology and the vital role it plays in everybody's healthcare. Working with members, we run programmes to inspire the next generation to study science and join the profession.