

## **Are PSMA (Prostate-Specific Membrane Antigen) PET-CT scans in our unit requested according to NHS England Commissioning Criteria on prostate cancer?**

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### **Objective**

To assess unit compliance with NHS England Prostate-Specific Membrane Antigen (PSMA) PET-CT commissioning policy and evaluate reasoning for non-compliant requests. Guideline inclusion criteria require patients to be  $\geq 18$  years old and meet one of two indications: 1) Staging high-risk primary prostate cancer (Prostate-Specific Antigen (PSA)  $> 20$  ng/mL, Stage  $\geq T3$ , or Gleason  $\geq 8$ ) with equivocal baseline imaging, or 2) Biochemical recurrence localisation (PSA  $\geq 0.2$  ng/ml post-radical prostatectomy [RALP], or  $\geq 2$  ng/ml above nadir post-radiotherapy) in patients suitable for salvage therapy.

### **Methods**

We conducted a retrospective audit of all prostate cancer patients who underwent a PSMA-PET scan at Darent Valley Hospital over a 12-month period in 2025. A total of 148 patients were identified, representing 183 distinct PSMA-PET scans. Patients were stratified into three clinical subgroups: Group 1 included patients at initial diagnosis ( $n=83$ ); Group 2 post-radical prostatectomy (RALP) patients ( $n=45$ ); and Group 3 post-radiotherapy patients ( $n=20$ ).

### **Results**

Overall scan compliance was 80% (Group 1: 86.7%; Group 2: 84.4%; Group 3: 75%). In Group 1, 22 scans were positive for non-organ confined disease, only two of which were classified as non-indicated.

In Group 2, diagnostic yield correlated strongly with Prostate-Specific Antigen (PSA) levels. When PSA was  $< 0.2$  ng/ml ( $n=8$ ), 0% of scans were positive. PSMA-PET positivity rates increased to 33.3% for PSA 0.2-0.3 ng/ml ( $n=15$ ), 71.4% for PSA 0.3-0.5 ng/ml ( $n=7$ ), and 80% for PSA  $> 0.5$  ng/ml ( $n=15$ ). All positive scans in this post-RALP group were guideline-indicated.

In Group 3, 15 scans were positive, two of which were non-indicated. The primary reasons for non-indicated scan requests in Groups 2 and 3 included a rising PSA that remained below the formal biochemical recurrence threshold ( $<0.2$  ng/ml post-RALP or  $<2$  ng/ml above nadir post-radiotherapy). Across Groups 1 and 3, non-indicated scans were frequently driven by the need to investigate abnormalities detected on prior MRI or bone scans.

### **Conclusions**

Our unit demonstrates strong guideline adherence. Data supports current thresholds, highlighting a 0% positivity rate in post-RALP patients with PSA  $<0.2$  ng/ml. Scans falling outside criteria are often justified by multidisciplinary team (MDT) clinical judgment to investigate early PSA rises or equivocal conventional imaging findings.