



Responding to demand for diagnostic services

A case study

Cambridge University Hospitals NHS Foundation Trust is a specialist centre for prostate cancer treatment and has been at the forefront of adopting an MRI-led diagnostic pathway since 2015, pre-dating the 2019 NICE guidelines¹ and 2018 NHS England recommendations for implementation by all Trusts.² The requirement that all men referred with suspected prostate cancer should undergo a multiparametric MRI (mpMRI) scan, with the potential for a negative scan to spare them an immediate biopsy, meant an increase in demand on MRI resources that has only grown in magnitude over recent years. The CamPARI Prostate Cancer Group at the hospital has published a detailed examination of their diagnostic pathway statistics, including the difference made by a change to ringfencing dedicated scanning slots for prostate patients.³

This change was instituted by the Imaging department upon noticing the increasing volume of prostate MRI referrals and determining a more efficient way of scheduling them to cope with demand. Reserved slots (initially 9 per week, since raised to 12) were distributed so prostate scans were carried out “little and often” rather than in one list – similarly, radiologists were encouraged to report throughout the week to achieve a turnaround within 48-72 hours. Any slots unfilled by a cut-off time set the previous evening were filled with inpatients or outpatients able to respond at short notice. If demand exceeded slot patient capacity, overspill patients were transferred to the general cancer pathway. Initially the slots were reserved for a morning, but moving these to an evening enabled flexibility to fill unused slots. It is important to note that unused slots are infrequent with careful capacity planning – avoiding “over reserving” slots.⁴

The mpMRI image acquisition protocols were not altered. Buscopan was given to patients before all scans if not contraindicated. Patients were triaged by telephone upon referral and

¹ NICE Guidelines NG131 – Prostate Cancer: diagnosis and management, <https://www.nice.org.uk/guidance/ng131>, May 2019

² Implementing a timed prostate cancer diagnostic pathway, <https://www.england.nhs.uk/wp-content/uploads/2018/04/implementing-timed-prostate-cancer-diagnostic-pathway.pdf>, April 2018

³ Three-year experience of a dedicated prostate mpMRI pre-biopsy programme and effect on timed cancer diagnostic pathways, T. Barrett, R. Slough, N. Sushentsev, N. Shaida, B.C. Koo, I. Caglic, V. Kozlov, A.Y. Warren, V. Thankappannair, C. Pinnock, N. Shah, K. Saeb-Parsy, V.J. Gnanapragasam, E. Sala, C. Kastner, *Clinical Radiology*, Volume 74, Issue 11, 894.e1 - 894.e9

⁴ Additional info from conversation with T. Barrett and R. Slough, Cambridge University Hospitals NHSFT

booked for an MRI if they had no standard contraindications and a PSA <30; those aged over 70 years (now 75) required an additional assessment prior to MRI booking.

Over the 30-month period for which statistics were analysed, 833 patients underwent prostate MRI on the accelerated straight-to-test pathway. The NPV of mpMRI in this group (considering significant disease = Gleason 4+3 or greater) was 98.3%. Considering the NHS England standard of 28 days to diagnosis, the change to having pre-booked appointment slots for MRI had a significant effect on meeting this requirement. 332 patients were scanned in the 15 months prior to introducing reserved MRI slots, and 413 in the 15 months after (88 scanned were on a different pathway). 222/332 (66.9%) achieved full diagnostic testing and reporting within 28 days without a reserved MRI slot, while 335/413 (81.1%) with a reserved MRI slot met this standard. In the group with reserved MRI slots, the median time to completion of diagnostic tests was 20.9 days (IQR 12-28), which is significantly lower than the recently reported 55.5 days (IQR 29-126) UK average for prostate cancer.⁵ In cases of delay to the pathway, MRI scheduling was the reason in 30.9% of cases prior to reserved slots, and only 10.3% after – a two-thirds reduction. The most common reason for delay in the 28-day pathway was scheduling a biopsy; patient choice caused some breaches, with offered appointments being turned down due to prior commitments or work demands.

These results show that pre-planning and allocating resources accordingly for the level of demand for prostate cancer diagnosis can improve standards in meeting the NHS England timed targets even in a busy and stretched resource environment. Agreement and compromise between departments on making this change for the benefit of the whole pathway are key to enable overall success and therefore better patient experience.

⁵ Diagnosing cancer in primary care: results from the National Cancer Diagnosis Audit, R. Swann, S. McPhail, J. Witt, B. Shand, G. Abel, S. Hiom, J. Rashbass, G. Lyratzopoulos, G. Rubin, The National Cancer Diagnosis Audit Steering Group; British Journal of General Practice 2018; 68 (666): e63-e72.