Prostate multi-parametric MRI before biopsy – current practice and availability across the UK

Cooper A and Dyer A – Knowledge Team, Prostate Cancer UK, London
knowledge@prostatecanceruk.org

- The PROstate MRI Imaging Study (PROMIS) recently showed that multi-parametric MRI (mpMRI) allows 27 percent of men to safely avoid a prostate biopsy. If a biopsy is needed, mpMRI results can be used to target the biopsy.

- This study was designed to establish the extent and impact of use of MRI before prostate biopsy, through a survey of uro-radiologists, and to conduct an audit of mpMRI availability and scanner capacity across the UK, through Freedom of Information (FOI) requests.

Data collection
- The consultant uro-radiologist survey was carried out online between February and March 2016 (n=88).
- Freedom of Information (FOI) request data was collected between June and November 2016 from NHS Trusts in England, Health Boards in Wales and Scotland and Health and Social Care Trusts in NI who perform prostate biopsies (n=164, RR=100 percent).
- Data analysis was conducted in Tableau Desktop v10.2.

Radiologist practice: 2013 compared to 2016
- Our 2016 survey showed 79 percent of radiologists are using MRI prior to first biopsy, a 42 percent increase from 2013 (Figure 1).
- Half are currently using the T1, T2, DW and DCE sequences required for a multi-parametric MRI scan, as per the PROMIS trial protocol.
- 59 percent of radiologists reported pre-biopsy MRI reduced the number of subsequent biopsies undertaken, an increase of 11 percent from 2013 (Figure 1).

Where is pre-biopsy mpMRI available in the UK?
- An interactive dashboard of the FOI data is available via Tableau Public here: tiny.cc/mpMRImap
- The FOI data showed inequality of access with only 51 percent of areas across the UK offering pre-biopsy mpMRI (Figure 2).

Planning for the future and the challenges ahead
- Our FOI data showed 35 percent of UK areas intend to adopt or increase the use of pre-biopsy mpMRI, following the PROMIS trial results.
- However, 78 percent of these areas do not currently have sufficient capacity or resources to cope with the increase (Figures 4 and 5).

Figure 1. Use of pre-biopsy MRI in 2013 (n=53) and 2016 (n=77) and impact of pre-biopsy MRI on the reduction of subsequent biopsies performed in 2013 (n=27) and 2016 (n=49).

Figure 2. Availability of pre-biopsy mpMRI across the UK by NHS Trust, Health Board or Health and Social Care Trust (n=164).

Figure 3. Percentage of eligible men with access to pre-biopsy mpMRI across the UK by NHS Trust, Health Board or Health and Social Care Trust (n=164).

Figure 4. Areas of the UK which intend to adopt or increase the use of pre-biopsy mpMRI (n=58), by whether they currently do have (orange) (n=9) or do not have (blue) (n=49) sufficient capacity and resource.

Figure 5. Barriers to implementation in areas that intend to adopt or increase the use of pre-biopsy mpMRI (n=63 provided from 45 areas).

Conclusions
- Use of pre-biopsy mpMRI in the UK has increased considerably in recent years.
- In order to reduce the current variation in access, areas must overcome a multitude of challenges including a lack of scanner capacity, insufficient numbers of consultant radiologists and an expected retirement of a large proportion of the existing radiology workforce.
- NICE are currently conducting an exceptional review of their ‘Prostate cancer: diagnosis and management’ clinical guideline, including the pre-biopsy mpMRI data from the PROMIS trial.