Inappropriate tumour marker requesting from primary and secondary care: experiences from a teaching hospital and a district general hospital

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Background and Aims

Inappropriately requested tumour marker (TM) measurements may lead to additional and unnecessary investigations which could potentially cause undue alarm, while normal levels may provide false reassurance.

Either scenario can result in additional cost, risk of side effects and/or delayed diagnosis. It is therefore important to consider the appropriateness of these requests and ways in which the inappropriate requests can be reduced.

The appropriateness of TM requesting across King's College Hospital sites, comprised of a large teaching hospital (Denmark Hill - DH) and a smaller district general hospital (Princess Royal University Hospital- PRUH), had not previously been audited. As part of a review of available user information the requesting of TM across both sites was examined.

Standards

Guidelines published from NICE, the European Group on Tumour Markers, Royal College of Pathologists, Scottish Intercollegiate Guidelines Network, American Society of Clinical Oncology, the European Society for Medical Oncology and local Trust guidelines.

Method

Data was collected from the Laboratory Information Management Systems (LIMS) of DH and PRUH for the period 1st June to 31st December 2019 for the following TM analysed within the core Biochemistry laboratories: AFP, CEA, PSA, CA125, CA15-3 and CA19-9.

TMs were assessed as either appropriate, inappropriate or unable to determine based on clinical details.

Requesting permissions for these TM were also examined in the Trust Electronic Patient Record (EPR) and GP ordering system tQuest for both sites.

Findings

- There was no notable difference in inappropriate requests between sites, with the average number from all locations being 19%. 11-16% of requests contained no or insufficient clinical details (figure 1).
- For both sites the largest number of inappropriate requests was from GPs (52-64% of all GP TM requests, figure 2).
- Overall the most inappropriately requested TM was CA15-3 and the most appropriately requested was AFP (table 1).
- Within EPR and tQuest there were no comments on TM requesting (frequency, indications etc.) or restrictions on who could request TM.

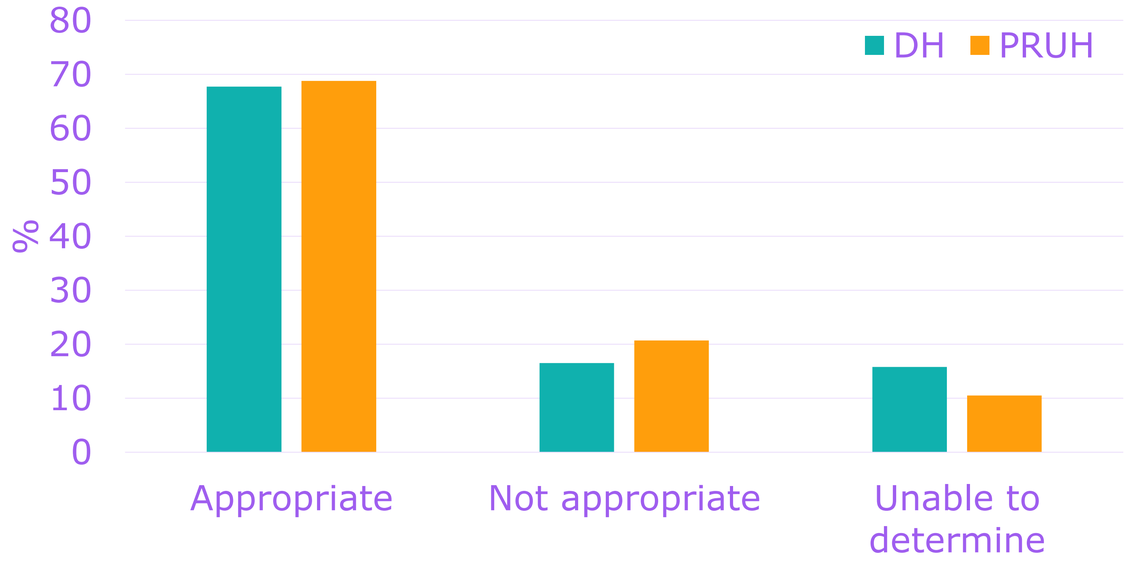

Figure 1. Percentage of appropriate, inappropriate and unable to determine TM requests for both sites.

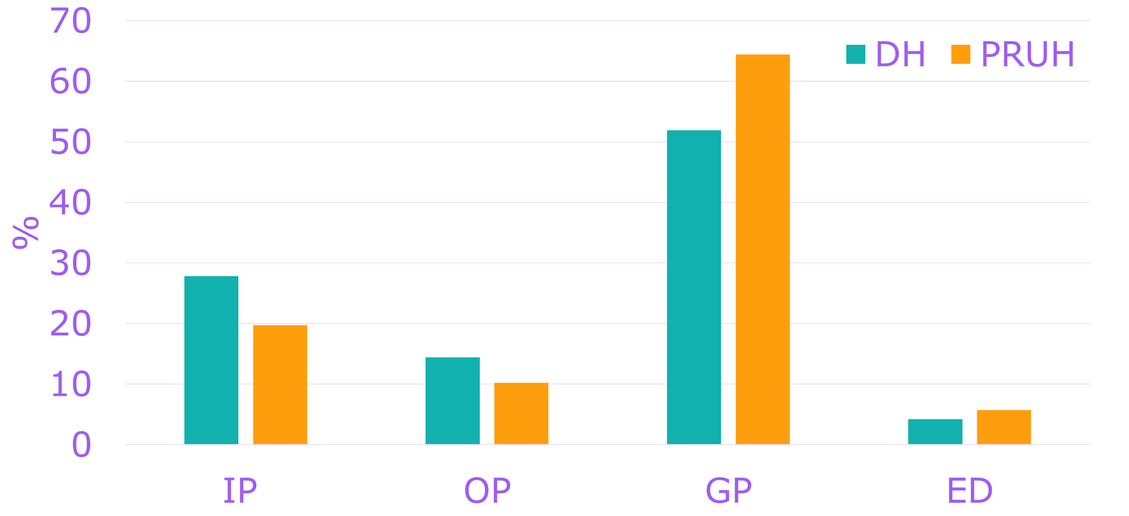

Figure 2. Percentage of inappropriate TM requests by source for both sites.

IP = inpatient, OP = outpatient, GP = general practitioner, ED = emergency department

Table 1. Differences in inappropriate TM requests

TM	DH (%)	PRUH (%)	Average (%)
CA15-3	40.5	28.2	34.4
CA125	20.3	14.3	17.3
AFP	1.6	5.6	3.6
PSA	18.3	17.7	18.0
CEA	8.2	26.6	17.4
CA19-9	10.2	31.6	20.9

Recommendations

- Produce laboratory guidelines on TM requesting for primary and secondary care, including minimum re-testing intervals (MRI).
- Introduce pop up messages on guidance and MRI for TM requesting on both tQuest and EPR.
- Introduce interpretive comments on the LIMS to include the clinical applications of TM with reference to guidelines.