Determinants of variation in the diagnosis of patients with metastatic disease at primary presentation

Commissioned by **HQIP** on behalf of **NHS England** and **Welsh Government**

Based at the **Clinical Effectiveness Unit**,
Royal College of Surgeons / London School of Hygiene & Tropical Medicine

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NPCA
National Prostate Cancer Audit

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Introduction

- The National Prostate Cancer Audit (NPCA) has reported the proportion of men who are found to have metastatic disease when they are first diagnosed.

- 17% of new cases of prostate cancer between April 2020 and March 2021 were metastatic at primary diagnosis.

- Remained stable over time (16% April 2017 – March 2018)

- NHS Long Term Plan
  - by 2028, more cancers will be diagnosed at an earlier stage

Patient Characteristics Associated with Metastatic Prostate Cancer at Diagnosis in England

Objectives:

1. To identify what factors may pre-dispose patients to being diagnosed with metastatic prostate cancer at diagnosis

2. To explore the impact of:
    1. Age
    2. Ethnicity
    3. Deprivation
    4. Geography (NHS region)
    5. Performance status
    6. Charlson co-morbidity score

Data

- All men diagnosed with prostate cancer in England between 1st January 2015 and 31st December 2019 **(n=216,777)**

- The metastasis (M) variable was used to identify patients with metastatic disease within the cohort.

- The metastatic status was 'unknown' for 35,878 (16%) patients and therefore not included in our analysis.

- The geographical regions were defined by NHS region and Cancer Alliance.

Key findings

	Metastatic at diagnosis	Non-metastatic at diagnosis
Total patients (2015-2019)	30,007 (16.4%)	152,826 (83.6%)
Patient characteristics		
Age		
<60	1,844 (7.9%)	21,402 (92.1%)
≥80	10,497 (38.4%)	16,857 (61.6%)
missing	0	0
Index of Multiple Deprivation (IMD)		
1-least deprived	6,631 (14.8%)	38,062 (85.2%)
5-most deprived	4,718 (19.2%)	19,812 (80.8%)
missing	0	0
Ethnicity		
White	26,780 (16.9%)	131,823 (83.1%)
Mixed	104 (13.0%)	696 (87.0%)
Asian/Asian British	413 (13.2%)	2,727 (86.9%)
Black/Black British	732 (11.7%)	5,528 (88.3%)
Other	326 (14.5%)	1,923 (85.5%)
missing	1,652 (14.0%)	10,129 (86.0%)
Geography: NHS region		
South East	5,293 (14.7%)	30,821 (85.3%)
Midlands	5,515 (17.8%)	25,510 (82.2%)
North East and Yorkshire	5,741 (20.1%)	22,851 (79.9%)
East of England	3,690 (15.6%)	20,035 (84.4%)
London	2,787 (12.5%)	19,581 (87.5%)
North West	3,738 (17.1%)	18,076 (82.9%)
South West	3,138 (16.8%)	15,579 (83.2%)
missing	105 (22.0%)	373 (78.0%)

Key messages

- Patients of **older age** (>80) and **greater social deprivation** are more likely to be diagnosed with metastatic disease at first presentation.
- Variation between ethnic groups - higher prevalence among patients of **White** ethnicity.
- Variation observed **in geographic region**-patients in the North East and Yorkshire NHS region being the most likely to have metastatic disease at diagnosis by comparison with any other NHS region.
- It is important to encourage **all men** to seek medical advice as soon as they notice symptoms.

Caveats..

1. Data by geography is sensitive to the degree of PSA testing within each NHS region.
   - is there more 'over-diagnosis' in London which lowers apparent incidence of metastasis inappropriately?

2. Missing data
   - The metastatic status was 'unknown' for 35,878 patients and therefore not included in our analysis.
   - 5.5% did not have their ethnicity recorded.

Further work…

- Developing on from Short Report
  - In conjunction with the CRG and the team at NCRAS
- Explore patients with metastatic disease as a proportion of the **total population**
- Look for associations between metastatic disease and age, ethnicity and socioeconomic status by geographic region

THANK YOU

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