



## Ethnicity and stage at diagnosis

# National cancer registration and analysis service data briefing

### Introduction

Improvements in data availability and completeness now allow us to examine the potential variation in the proportions of patients in each stage group and associations between stage and ethnicity in detail. This data briefing explores diagnosis between major ethnic groups. This is for people diagnosed with breast (N=78,299), colorectal (N=62,750), lung (N=67,222) and prostate (N=70,453) cancer in England in 2012 and 2013 (combined).

### Methods

Data for residents in England diagnosed with lung (ICD-10 C34), breast (C50, males and females included), colorectal (C18-20) and prostate (C61) cancer in 2012 and 2013 were extracted from PHE's cancer analysis system. We calculated the proportions of diagnoses by stage and ethnic group for each cancer type.

Ethnic group was assigned using the group recorded in the most recent Hospital Episode Statistics (HES) record. We focused on major ethnic groups for whom HES-coded ethnicity has been shown to have adequate accuracy when compared with self-reported ethnicity (1). These groups were White British, Black Caribbean, Black African, Asian-Indian, Asian-Pakistani, Asian-Bangladeshi and Chinese. Due to a low number of diagnoses in the ethnic groups Asian-Pakistani and Asian-Bangladeshi, breast cancer patients were subsequently combined into a single group and called Asian-Pakistani & Bangladeshi.

After excluding cancers of unknown stage, cancer of stages one and two were classed as early stage and stages three and four as late stage. We focused our commentary on ethnic groups with statistical evidence for differences in odds of late stage disease in comparison to the reference group (White British), modelled with a logistic regression, after adjusting for sex, age and deprivation (using the income domain from the indices of multiple deprivation - 2010 version).

### Key messages

- Improvements in data quality allow us to examine associations between stage at diagnosis and ethnic group for common cancers
- Proportions of patients diagnosed at early stage vary between ethnic groups in all four cancer sites, after controlling for the effects of sex, age and deprivation

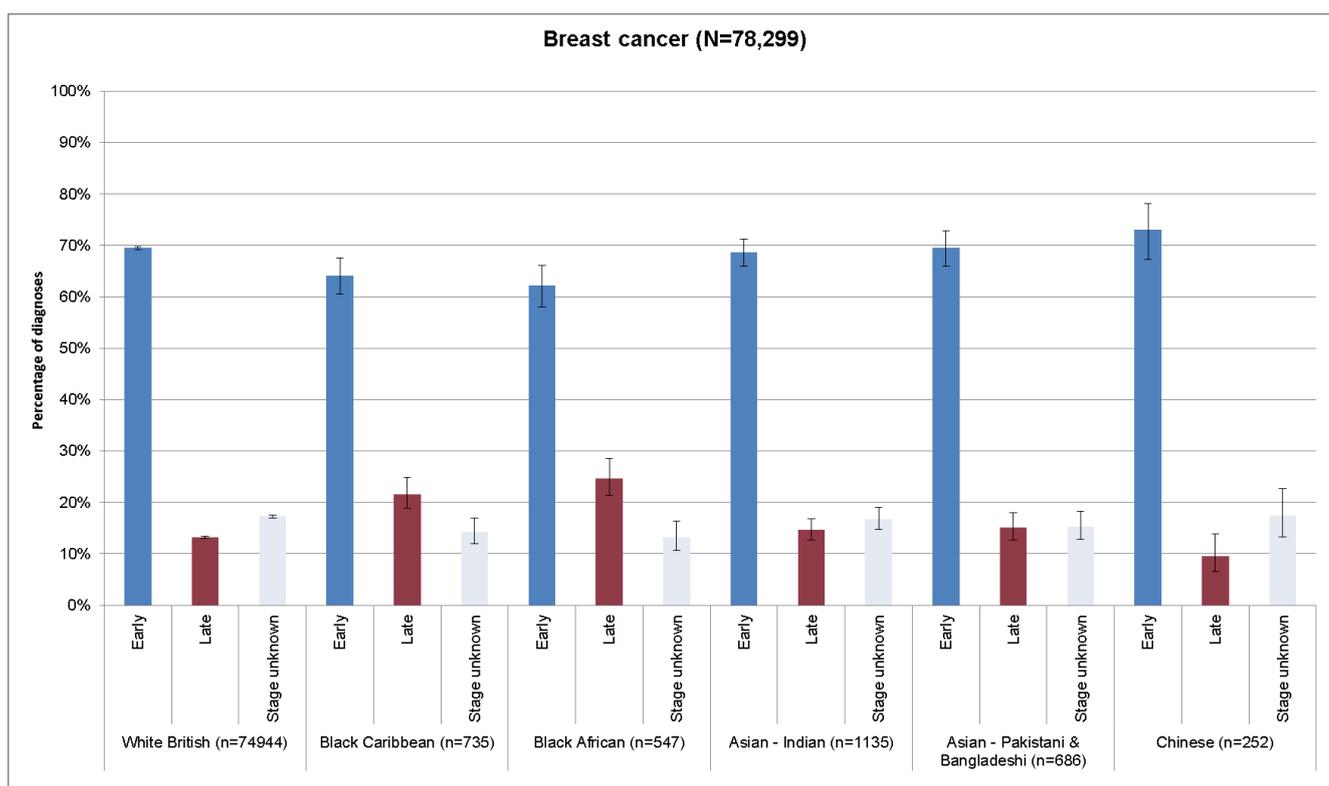
## Does the distribution of stage at diagnosis vary by ethnic group?

Among patients with known stage, after adjustment for age, sex, and deprivation status, there was evidence ( $p < 0.05$ ) of variation in early/late stage diagnosis by ethnic group between minority ethnic group patients with breast, lung, colorectal and prostate cancer compared with White British patients.

For further details and findings please refer to the workbook published alongside this data briefing ([http://ncin.org.uk/about\\_ncin/the\\_cruk\\_ncin\\_partnership\\_improving\\_outcomes\\_through\\_cancer\\_intelligence](http://ncin.org.uk/about_ncin/the_cruk_ncin_partnership_improving_outcomes_through_cancer_intelligence)).

### Results: Breast cancer

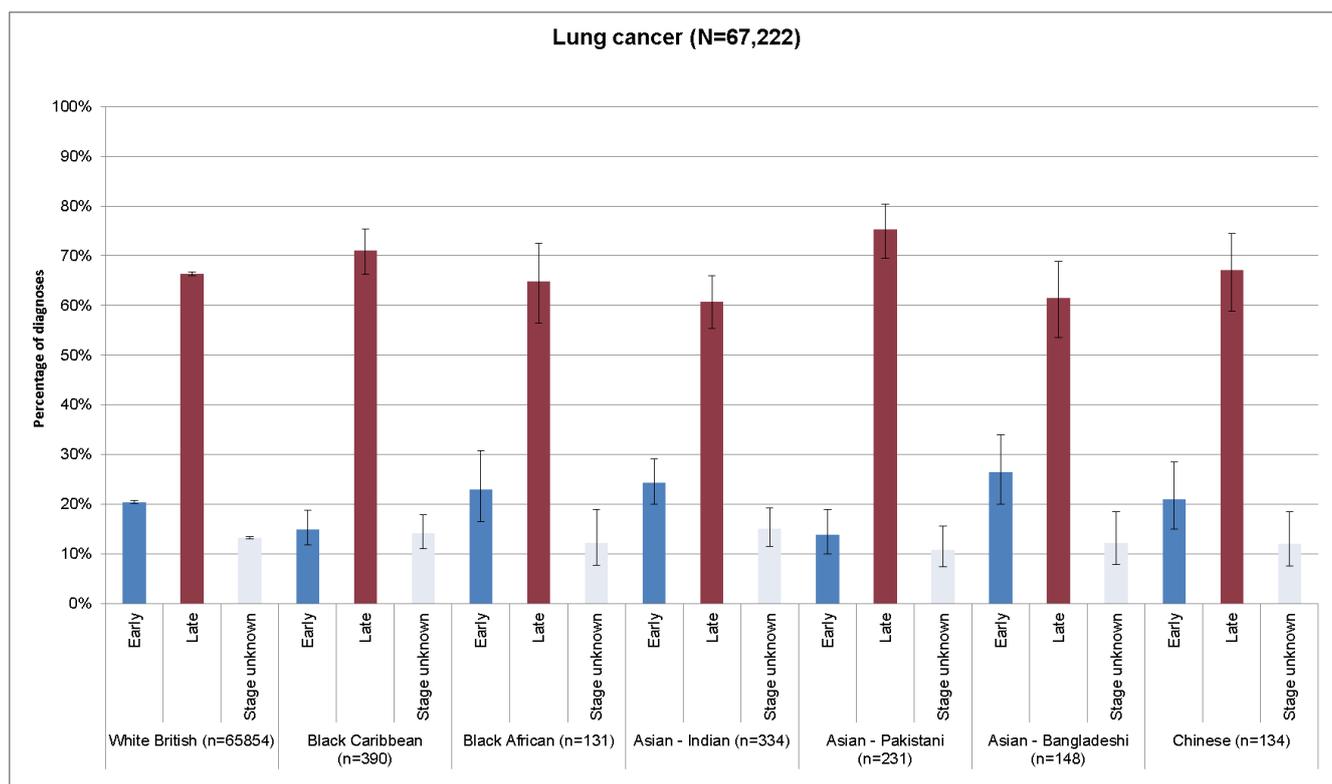
Figure 1. Percentage of early, late and unknown stage breast cancer diagnoses, by ethnic group, England 2012-2013



After adjustment for age, sex and deprivation status, among patients with known stage there were significantly higher proportions of Black African and Black Caribbean individuals diagnosed with breast cancer at a late stage, compared with White British. Stage at diagnosis may be related to a patient's route to diagnosis, including whether the cancer was detected by screening. Screening uptake has been found to vary by ethnic group, with White British women having the highest uptake of breast cancer screening (2).

## Results: Lung cancer

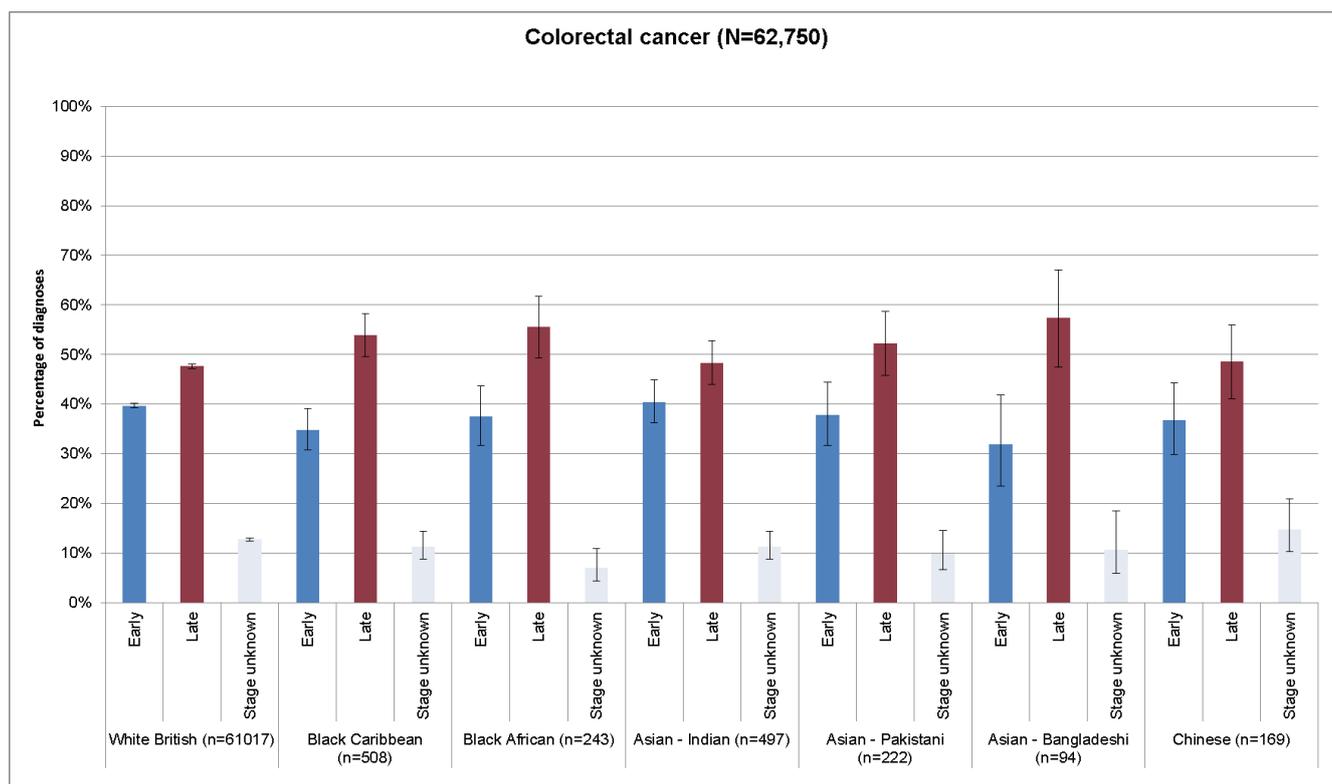
Figure 2. Percentage of early, late and unknown stage lung cancer diagnoses, by ethnic group, England 2012-2013



After adjustment for age, sex and deprivation status, among patients with known stage, Asian-Indian patients had significantly lower proportions of late stage lung cancer diagnoses compared with the White British group. In contrast, Asian-Pakistani and Black Caribbean patients had higher proportions diagnosed at late stage, compared with the White British group.

## Results: Colorectal cancer

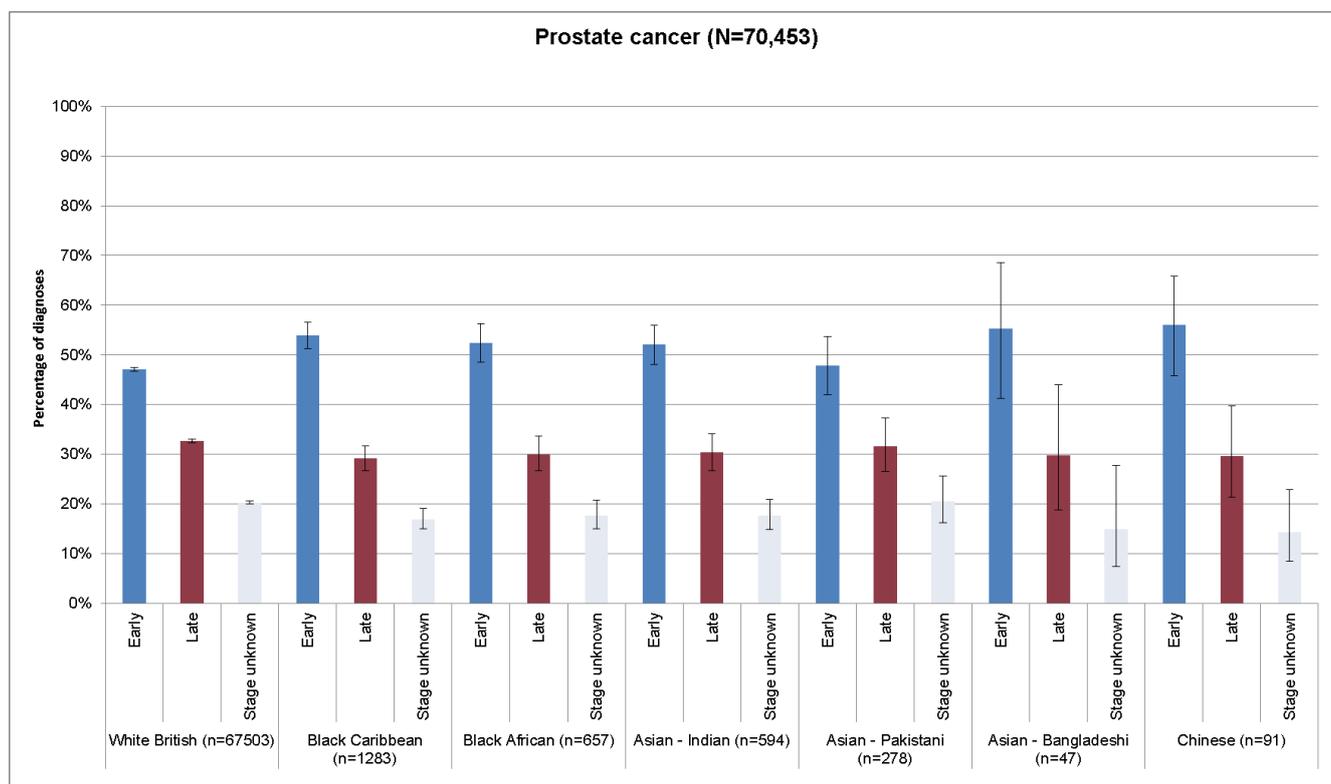
Figure 3. Percentage of early, late and unknown stage colorectal cancer diagnoses, by ethnic group, England 2012-2013



After adjustment for age, sex and deprivation status, among Black Caribbean colorectal cancer patients with known stage there were significantly higher proportions of late stage compared with the White British group.

## Results: Prostate cancer

Figure 4. Percentage of early, late and unknown stage prostate cancer diagnoses, by ethnic group, England 2012-2013



After taking into account sex, age and deprivation levels, among prostate cancer patients with known stage the Black Caribbean and Asian Indian groups have significantly lower proportions of late stage at diagnosis compared with White British.

### References

- 1 Saunders CL, Abel GA, El Turabi, F Ahmed, G Lyratzopoulos, Accuracy of routinely recorded ethnic group information compared with self-reported ethnicity: evidence from the English Cancer Patient Experience survey, *BMJ Open* 2013;3:e002882. doi:10.1136/bmjopen-2013-002882
- 2 Jack, R.H, Møller, H., Robson, T, Davies, E.A. ,Breast cancer screening uptake among women from different ethnic groups in London: a population-based cohort study, *BMJ Open* 2014;4:e005586 doi:10.1136/bmjopen-2014-005586

### FIND OUT MORE

**Other useful resources: Routes to diagnosis of cancer by stage, 2012-2013**

[Routes to diagnosis by stage workbook, 2012-2013](#)

First published: November 2016

© Crown copyright 2016

Re-use of Crown copyright material (excluding logos) is allowed under the terms of the Open Government Licence, visit <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/> for terms and conditions.