

# Britain against Cancer

## APPG Cancer Meeting 2009

### Research & Technologies Workshop

Researching inequality and cancer - what we know and  
what requires further research

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## Researching inequality and cancer - what we know and what requires further research?



- Focus on socio-economic deprivation
- Now nearly always assessed by your postcode
- Not perfect but is close to complete
- Other measures – occupation, income, education are complex to collect, never complete and difficult to interpret
- International comparative studies of deprivation are particularly challenging
- Many other important dimensions of inequality – age, gender, ethnicity, disability, sexuality...

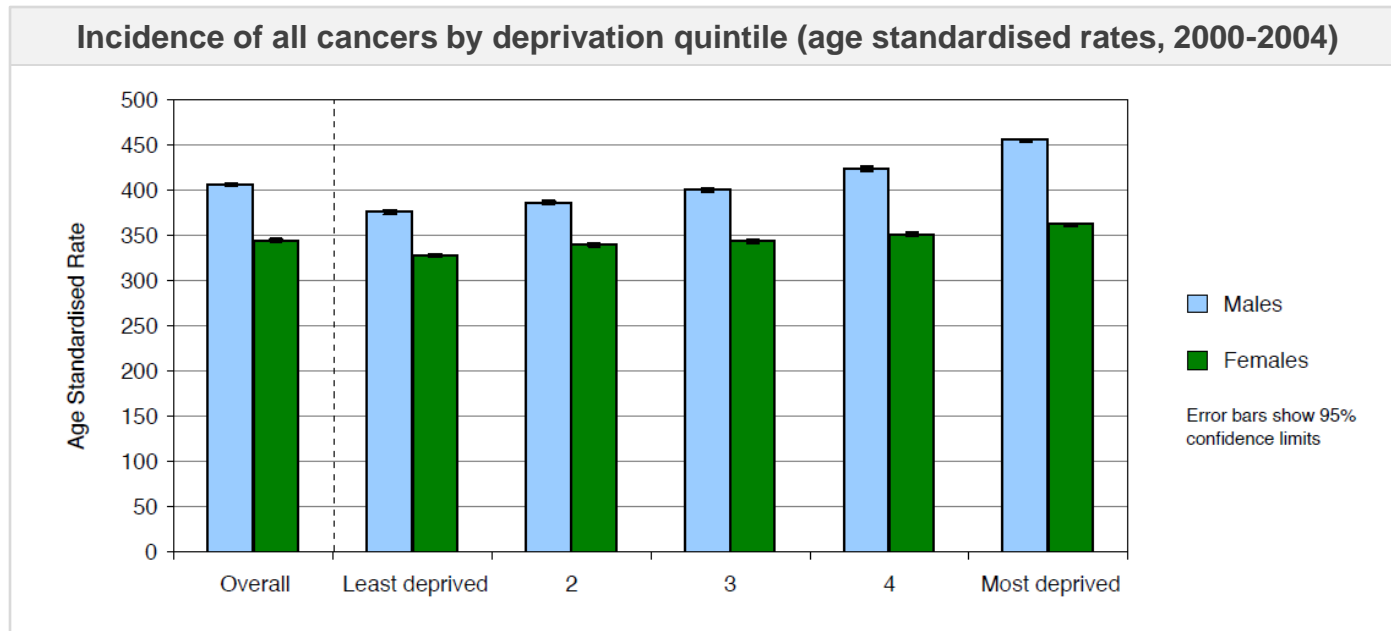
Those from deprived groups have higher cancer incidence and worse outcomes

## Comparing the most deprived groups to the least deprived:

Awareness	is	Lower	Treatment	is	Different
Screening uptake	is	Lower	Experience of care	is	Similar
Incidence	is	Higher	1 & 5 year survival	is	Lower
Stage at presentation	may be	More advanced	Mortality	is	Higher

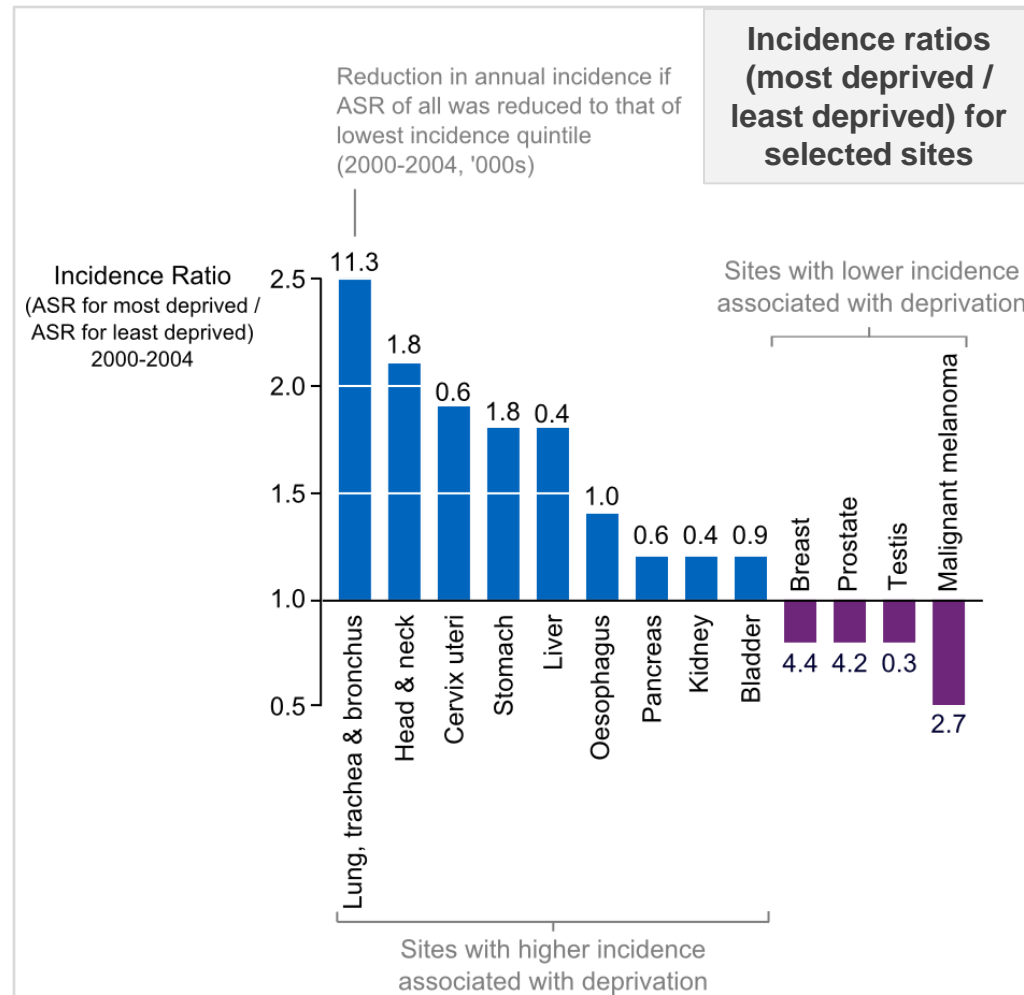
# Socioeconomic deprivation is associated with increased incidence of cancer

- From 2000-2004 there would have been around **71,600 fewer** cases of cancer if the incidence for all had been the same as the least deprived
- The increase in incidence for males with greater deprivation is significantly larger than for females (*another gender inequality*)



# Individual sites show strong positive or negative associations with deprivation

- There is a close association between deprivation and risk factors:
  - Smoking
  - Alcohol
  - Obesity
  - Infection (HPV / *H. Pylori* / Hep B&C)
  - [UV exposure]
- Targeting lifestyle risks should (eventually) reduce incidence inequalities:
  - The greatest opportunity is for smoking related cancers



# The latest data (to 2004) show that we are not closing the incidence gap

- The most recent NCIN analysis showed no statistically significant change in the relation of incidence to deprivation quintile between the time periods 1995-1999 and 2000-2004:
  - Sites showing a significant change were **prostate** cancer (greater negative association with deprivation) and **kidney** cancer (larger positive association)
- An earlier ONS analysis based on incidence rates for 1990-2002 found a generally increasing deprivation gap:
  - **Lung (males): Increasing gap** due to a more rapid decline in incidence among the least deprived
  - **Lung (females): Increasing gap** due to increasing incidence among the most deprived and constant incidence amongst the least
  - **Prostate: Increasing gap** due to more rapidly increasing incidence amongst the least deprived
  - **Breast: No change in gap**

# Participation in screening programmes is lower for deprived groups

- Deprivation is associated with a lower uptake of screening. This has been observed as the bowel cancer screening programme rolls out and has persisted in the breast screening programme:
  - Some work has been done on interventions to improve screening uptake but it is not clear which are effective in more deprived groups
- These inequalities can impact incidence gradients, as cancer is preferentially detected in the most affluent, and relative outcomes, as the less affluent present at a later stage:
  - Should we expect to see relatively higher incidence of colorectal cancer among the most affluent in future?

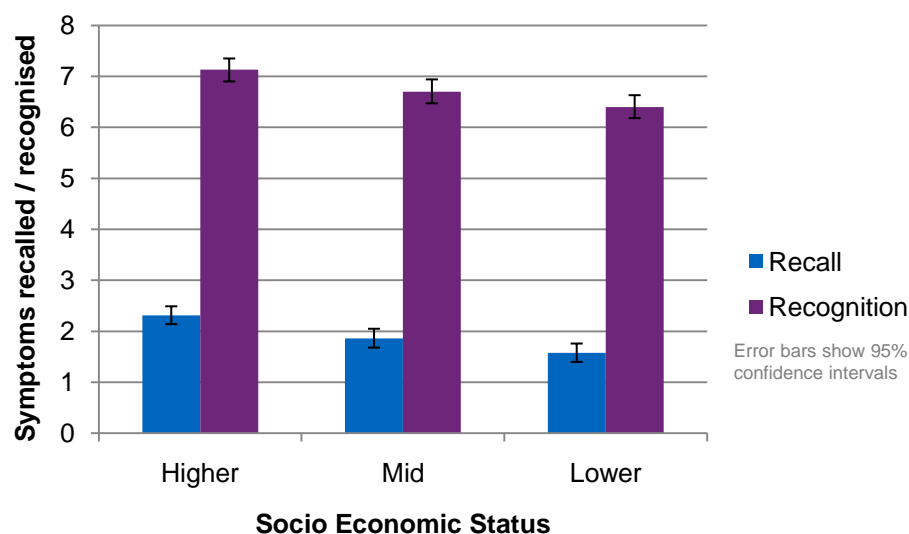
Sources: von Wagner, C (2009) Inequalities in colorectal cancer screening participation in London in the first round of the national screening programme. *British Journal of Cancer* (in press).

Jepson, R (2000) The determinants of screening uptake and interventions for increasing uptake: a systematic review. *Health Technology Assessment*, 4 (14)

# Awareness of cancer symptoms is lower in deprived groups, although anticipated delay in seeking help is shorter

- Those from lower Socio Economic Status (SES) groups recall or recognise fewer cancer symptoms
- These groups are more likely to mention emotional barriers to seeking help:
  - too scared or worried by what the doctor will find
  - too embarrassed or not confident to talk about symptoms

Recall and recognition of 10 cancer symptoms by SES



- However those from lower SES groups have a lower anticipated delay before seeking help for symptoms:
  - this is consistent with lower perceived practical barriers to attendance but how well does this reflect delays in reality?



# There is limited evidence that delays are associated with deprivation

- ‘Delay’ includes a range of factors – patient, primary care, referral and secondary care delays
  - Referral and secondary care delays are well captured but patient and some primary care delays are hard to measure
- Some evidence for differential delays in:
  - **Breast cancer** – women living in more deprived areas are more likely to wait more than 14 days from GP referral, weak association with treatment delays (*But a previous systematic review found insufficient evidence to draw a conclusion*)
  - **Prostate cancer** – lower social class is associated with greater total delay
  - Greater number of emergency admissions for **lung, colorectal** and **breast** cancer among the more deprived
- However, other studies do not find an association:
  - **Cervical cancer** – no significant association with patient delay (although there is a suggestive trend)
- The NAEDI-RCGP audit of cancer diagnoses may provide more evidence

Sources: Downing, A (2007) Socioeconomic background in relation to stage at diagnosis, treatment and survival in women with breast cancer. Br J Cancer. 96: 836-40.

Ramirez, A (1999) Factors predicting delayed presentation of symptomatic breast cancer: a systematic review. Lancet. 353: 1127-31

Neal, D (2005) Sociodemographic factors and delays in the diagnosis of six cancers. Br J Cancer. 92:1971-5.

Pollock, A (1998) Deprivation and emergency admissions for cancers of colorectum, lung, and breast in south east England: ecological study. BMJ 317:245-52.

Symonds, P (2000) Advanced-stage cervix cancer: rapid tumour growth rather than late diagnosis. Br J Cancer. 83: 566-8

# Patients from deprived groups may be more likely to present with advanced disease



- There is conflicting evidence from different studies on the association between deprivation and stage of disease at presentation:
  - A positive association has been observed for:
    - Breast cancer
    - Colorectal cancer
    - Cervical cancer
  - However other studies have rejected significant differences in stage at presentation for breast, colorectal, ovarian, or lung cancer
- We need more evidence to clarify the association between deprivation and stage at presentation:
  - Is deprivation associated with stage of presentation and for which cancers?
  - What factors drive any association between stage at presentation and deprivation – is this late presentation or differences in tumour biology?
  - This requires high-quality information on staging

Sources: Downing, A (2007) Socioeconomic background in relation to stage at diagnosis, treatment and survival in women with breast cancer. Br J Cancer. 96: 836-40.  
Smith, J (2006) Social deprivation and outcomes in colorectal cancer. British Journal of Surgery. 93:1123-1131.  
Lamont, D (1993) Age, socio-economic status and survival from cancer of cervix in the West of Scotland 1980-87. Br J Cancer. 68(1):213.  
Brewster, D (2001) Relation between socioeconomic status and tumour stage in patients with breast, colorectal, ovarian, and lung cancer. BMJ. 322:830-1

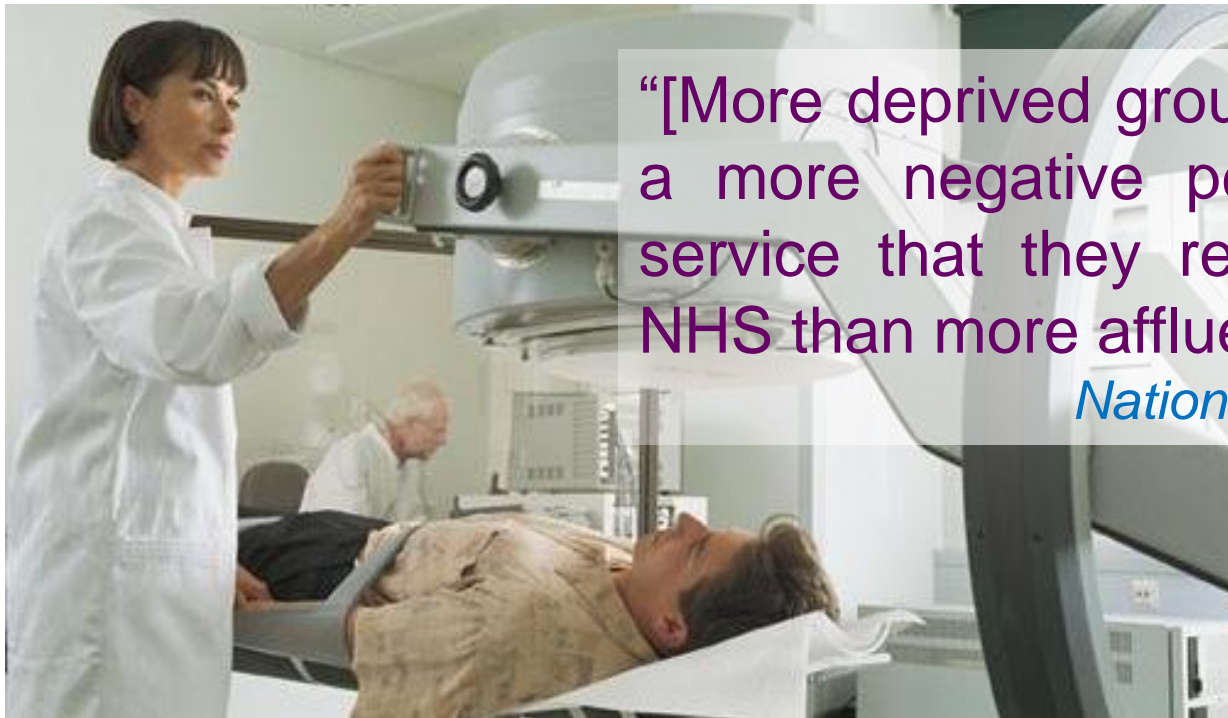
# Treatment varies with deprivation – how much of this is due to stage of presentation and co-morbidities?

- There is consistent evidence for differences in treatment associated with socioeconomic deprivation:
  - Women with breast cancer are less likely to receive surgery (even when adjusted for stage) and less likely to receive breast conserving surgery
  - The less deprived are more likely to receive histopathological diagnosis and active treatment for lung cancer
  - There is greater use of APE for patients from deprived groups with colorectal cancer resulting in more stoma
  - Fewer patients from deprived areas receive radiotherapy
- Stage and co-morbidities may influence treatment decisions and these may also be associated with deprivation:
  - We need more information on how many cancer patients are presenting with co-morbidities and what impact this has on their treatment
  - What other factors are influencing treatment?

Sources: Downing, A (2007) Socioeconomic background in relation to stage at diagnosis, treatment and survival in women with breast cancer. Br J Cancer. 96: 836-40.  
Crawford, S (2009) Social and geographical factors affecting access to treatment of lung cancer. Br J Cancer. doi:10.1038/sj.bjc.6605257  
Morris, E (2008) Unacceptable variation in abdominoperineal excision rates for rectal cancer: time to intervene? Gut. 57:1690-7.

# There is little evidence on patients' experience of care: what there is suggests that experience does not vary with deprivation

- A 2004 survey of cancer patients by the National Audit Office found no significant difference in the experience of care by socioeconomic group
  - e need more up to date and comprehensive information (i.e. PROMS)?

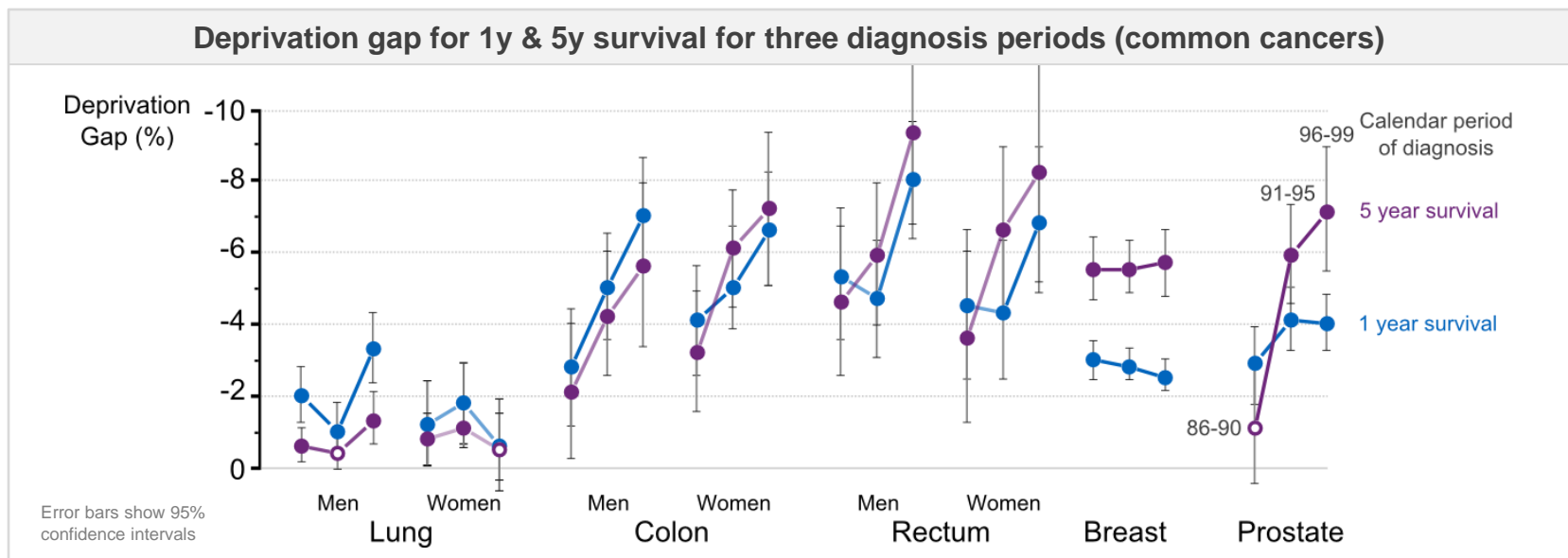


“[More deprived groups] did not have a more negative perception of the service that they received from the NHS than more affluent patients.”

*National Audit Office report*

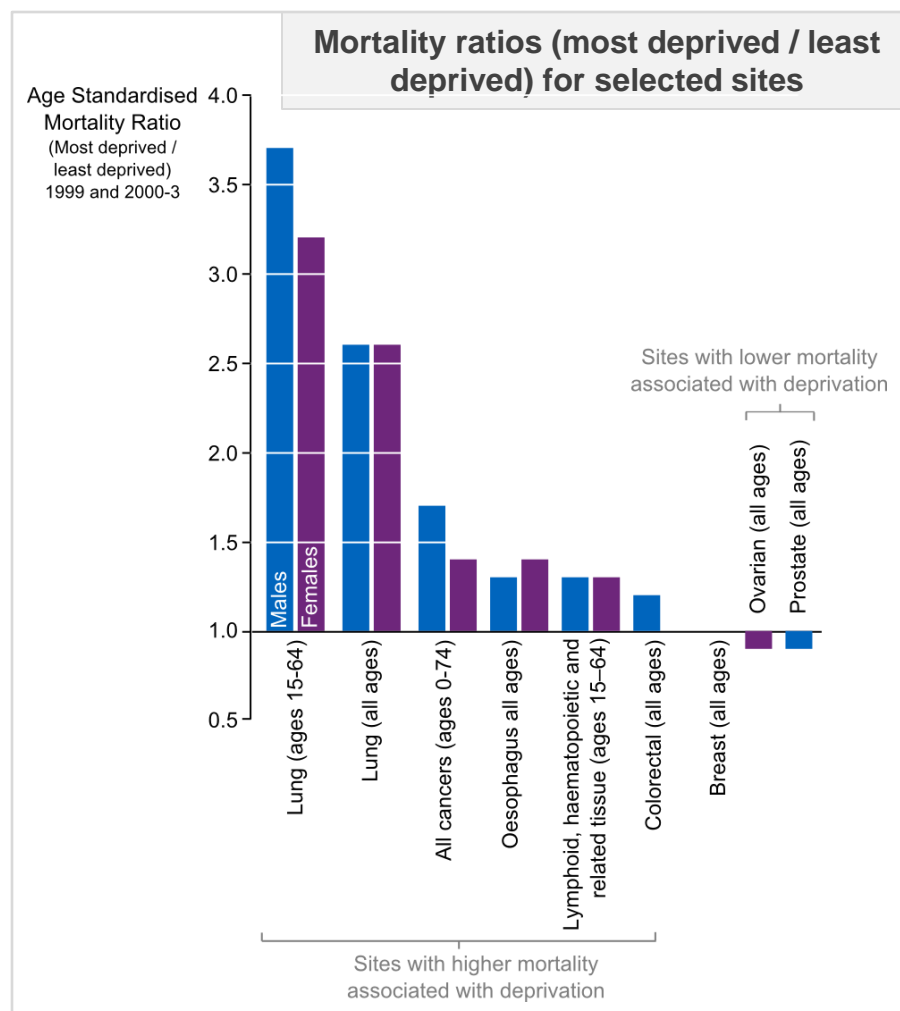
# Survival is poorer for the most deprived groups and we are not closing the gap.

- Significant deprivation gaps exist for 1y and 5y survival for each of the most common cancers. Possible causes are:
  - Differential uptake of screening and early diagnostic procedures
  - Differential access to optimal treatments
  - Co-morbidities that impact treatment
- These gaps either growing or not declining



# Mortality rates are higher in the most deprived areas

- Among most deprived, mortality from all cancers is 70% higher among men and 40% higher among women:
  - this is partly due to tumour mix – lung cancer vs breast cancer
- There is no relationship with deprivation for breast cancer and only a weak negative association for prostate cancer, despite higher incidence for the most affluent:
  - better survival for the affluent offsets the higher incidence



# What don't we know? What more research do we need to do?

1. What has been the impact of recent changes to the service?
  - There is an unavoidable delay in survival data but we should work towards more timely information on incidence, treatment and short-term outcomes
2. What interventions are effective to improve screening uptake among deprived groups?
3. What interventions can help to improve awareness?
4. What are the real patient and primary care delays?
  - What can the NAEDI-RCGP audit of primary care diagnoses tell us?
5. How much of the differences in incidence, treatment and outcomes are due to stage at diagnosis and co-morbidities?
  - We need better routine information on staging and co-morbidities
6. Are there really no differences in patient experience?
  - We need more information to assess this
7. Can we improve our measures of deprivation?



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