

Social variations in access to hospital care for patients with colorectal, breast, and lung cancer between 1999 and 2006: retrospective analysis of hospital episode statistics

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STUDY QUESTION Does type of hospital admission (emergency compared with elective) and surgical procedure for colorectal, breast, and lung cancer vary by socioeconomic circumstances, age, sex, and year of admission?

SUMMARY ANSWER Despite the implementation of the NHS Cancer Plan, social factors still strongly influence access to and the provision of care in England.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS

The NHS Cancer Plan aimed to improve outcomes overall and to reduce health inequalities. In this study, living in deprived areas and being male were associated with lower likelihood of receiving preferred surgical procedures for cancers within the National Health Service (NHS); older people were more likely to receive the preferred surgical procedure for rectal cancer but less likely to receive breast conserving surgery and lung cancer resection.

Participants and setting

564 821 patients aged 50 and above admitted to NHS hospitals in England between 1 April 1999 and 31 March 2006 with a diagnosis of colorectal, lung, and breast cancer.

Design

Repeated cross sectional study with data on individual patients from the hospital episode statistics (HES) dataset.

Primary outcomes

Proportion of patients admitted as emergencies and receiving recommended surgical treatment.

Main results and the role of chance

Patients from deprived areas, older people, and women were more likely to be admitted as emergencies. For example, the adjusted odds ratio for patients with breast cancer in the least compared with most deprived fifth of deprivation was 0.63 (95% confidence interval 0.60 to 0.66) and that for patients with lung cancer aged 80-89 compared with those aged 50-59 was 3.13 (2.93 to 3.34). There were some improvements in disparities between age groups but not for deprived patients over time. Patients from deprived areas were less likely to receive preferred procedures for rectal, breast, and lung cancer. These findings did not improve with time. For example, over 67% of patients in the most deprived fifth of deprivation had anterior resection for rectal cancer compared with 76% of patients in the least deprived fifth (1.34, 1.22 to 1.47); and 54% of patients in the most deprived fifth had breast conserving surgery compared with 64% of patients in the least deprived fifth (1.21, 1.16 to 1.26). Men were less likely to undergo anterior resection

EFFECT OF SOCIAL FACTORS AND ADMISSION PERIOD ON EMERGENCY ADMISSION FOR PATIENTS WITH COLORECTAL CANCER

Variable	Total	Odds ratio (95% CI)	P value
Men	102 772	1	<0.001
Women	84 205	1.15 (1.12 to 1.17)	
Fifth of index of multiple deprivation:			
1 (most deprived)	34 404	1	<0.001
2	36 470	0.83 (0.80 to 0.86)	
3	39 309	0.75 (0.72 to 0.77)	
4	39 753	0.68 (0.65 to 0.70)	
5 (least deprived)	37 041	0.66 (0.64 to 0.68)	
Age group (years):			
50-59	25 002	1	<0.001
60-69	47 149	1.05 (0.98 to 1.11)	
70-79	67 625	1.41 (1.33 to 1.49)	
80-89	41 299	2.53 (2.37 to 2.69)	
≥90	5902	5.85 (5.23 to 6.55)	
Admission period:			
Per year	—	1.00 (0.98 to 1.01)	0.595
Interaction between age group and admission period:			
50-59 x period	—	1	0.010
60-69 x period	—	1.00 (0.98 to 1.01)	
70-79 x period	—	0.98 (0.96 to 1.00)	
80-89 x period	—	0.98 (0.96 to 1.00)	
≥90 x period	—	0.99 (0.96 to 1.02)	

and lung cancer resection and older people were less likely to receive breast conserving surgery and lung cancer resection. The adjusted odds ratio for patients with lung cancer aged 80-89 compared with those aged 50-59 was 0.52 (0.46 to 0.59).

Bias, confounding, and other reasons for caution

Routinely collected data have limited completeness and accuracy of data coding but there is no reason to assume that these limitations should be correlated with deprivation, sex, or age of patients. We used the index of multiple deprivation (IMD), an established method of assigning socioeconomic characteristics based on area of residence that assumes individuals conform to the socioeconomic profile of their area. Data are unavailable on tumour stage, case mix, and preference of patients, which are potential confounders.

Generalisability to other populations

These findings apply to patients admitted to NHS hospitals in England with colorectal, breast, or lung cancer.

Study funding/potential competing interests

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