

Socioeconomic inequalities in laryngeal cancer survival by stage at diagnosis and treatment: an analysis of DAHNO audit data linked to national cancer registry data

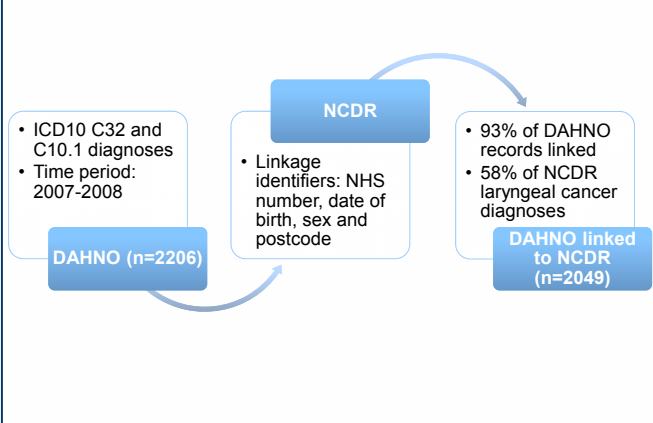
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Background

- ❖ Laryngeal cancer in men is one of the 20 most common malignancies in England, with around 1,500 new cases diagnosed each year.
- ❖ Laryngeal cancer has the steepest socioeconomic gradient in survival among those cancers.
- ❖ The origins of these disparities in survival are still largely unknown, and various factors have been implicated including differences in stage at diagnosis, comorbidity and treatment.
- ❖ Stage at diagnosis is likely to be a key prognostic indicator, both directly and through its influence on treatment options.
- ❖ Linkage of the National Head and Neck Cancer Audit (DAHNO) data to the National Cancer Data Repository (NCDR) in England has enabled examination of the influence of stage and treatment on inequalities in laryngeal cancer survival.

Data linkage



Analysis (males only n=1691)

Stage

- TNM classification simplified to early or late stage
- 2% of tumours metastatic, hence only T and N used
- Multiple imputation approach used to address missing stage
- Early (imputed 57.7%): T1 or T2 and N0
- Late (imputed 42.3%): T1 or T2 and N+, or T3 or T4 and N0 or N+

Deprivation

- IMD 2007 – income domain
- Deprivation quintile (Q) based on postcode at diagnosis
- Q1 - most affluent (13.5%), Q2 (16.7%), Q3 (20.5%), Q4 (22.9%), Q5 - most deprived (26.4%)

Treatment

- Binary variable: yes (58.5%) or no (41.5%)
- Type of treatment: surgery (38.9%), radiotherapy (51.9%), chemotherapy (5.4%) or chemoradiotherapy (3.8%)
- Time to treatment from diagnosis (69% between 2-3 months)

Relative survival

- Stage and treatment
- Stage and treatment by deprivation group
- Deprivation gap in survival estimated using linear regression

Results

Figure 1. One-year relative survival (%) and deprivation gap* – stage and treatment

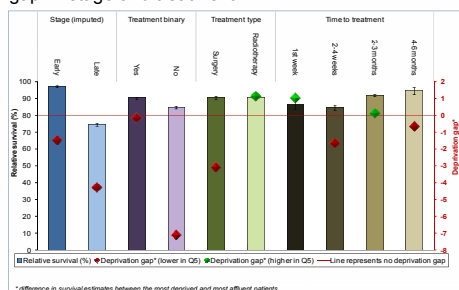


Figure 2. Fitted deprivation gap in survival, adjusted for stage and treatment variables**

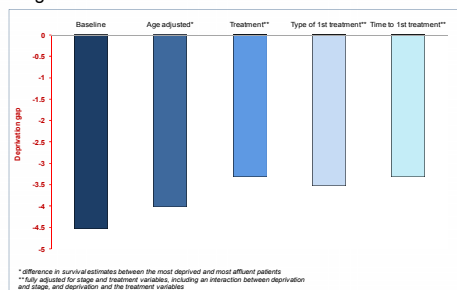


Figure 3. Fitted deprivation gap in one-year survival, by stage at diagnosis

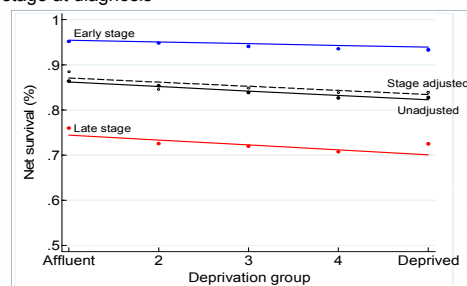
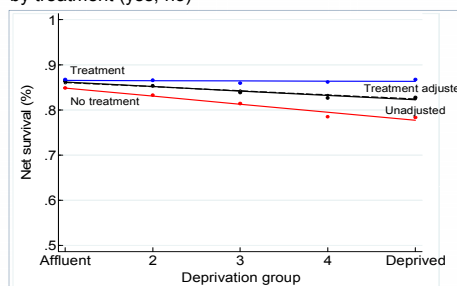


Figure 4. Fitted deprivation gap in one-year survival, by treatment (yes, no)



Key Findings

- One-year survival was 86.2% in the most affluent and 82.2% in the most deprived (-4.0% deprivation gap).
- Among patients with late stage, survival was 74.4% in the most affluent and 70.1% in the most deprived (-4.3% deprivation gap).
- There was no deprivation gap in survival among patients with early stage.
- Adjusting for differences in stage narrowed the deprivation gap slightly.
- Further adjusting for differences in treatment had little effect on the deprivation gap.

Conclusions

- ❖ Socioeconomic inequalities in laryngeal cancer survival are influenced by stage at diagnosis, but the effect on short-term survival is minimal.
- ❖ When stratified by both stage and treatment, the widest deprivation gap in survival among men with laryngeal cancer was in those diagnosed with late stage disease that did not receive treatment within 6 months of diagnosis.
- ❖ Difference in stage at diagnosis and treatment between the deprivation groups accounted for approximately a quarter of the deprivation gap in one-year survival.
- ❖ The influence of both stage and treatment on the deprivation gap in survival is likely to be greater for longer-term survival.