

Linking the Diagnostic Imaging Dataset (DID) to Hospital Episode Statistics (HES) - improving and understanding the diagnosis of lung cancer

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Objectives

To link the Diagnostic Imaging Dataset (DID) to Hospital Episode Statistics (HES) to explore the association between patient imaging and hospital based care and outcomes for cancer patients in English NHS hospitals. This is the first time this linkage has taken place. The analysis also aims to look at how each patient first presented in HES (A&E, emergency admission, elective care, regular attendance), when and by what route relevant tests were requested and geographic variation in access to imaging

Approach

Patient imaging records from the DID were linked to HES databases containing details of all inpatient, outpatient and A&E admissions at NHS hospitals in England in 2012/13 and 2013/14. Match rank criteria were developed to ensure that patients in HES were accurately linked to patients in DID by NHS number, date of birth and other unique identifiers. We used HES to identify patients with a lung cancer diagnosis and investigate their use of imaging and the temporal nature of tests to evaluate whether patients were following recommended pathways (e.g. having chest x-rays followed by CT scans before their lung cancer diagnosis) and the time between these events. Lung cancer patients were identified by developing an algorithm to search through diagnostic fields for clinical codes within HES databases. Where there was a lung cancer code the record was flagged and subsequently extracted.

Results

The combined HES and DID datasets consisted of more than 340 million records. Within this large dataset we identified 49,888

patients with a lung cancer code in one of their HES diagnosis fields to a DID diagnostic image record for inpatient records alone. A high proportion (97%) of records were matched in one of the top 3 rank levels, suggesting the linkage was successful. The results illustrate the relationship between the imaging referral pathway and hospital episodes (e.g. surgical resection, emergency presentation).

Conclusions

Investigating how people engage with imaging services and hospital care will increase our understanding of the pathways associated with lung cancer diagnosis.

The results from this analysis will contribute new knowledge about how lung cancer patients interact with hospitals and imaging services.

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