Specialisation of treatment of bone sarcomas in England

NCIN/ UKCAR conference
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Overview

- Methodology
  - Identifying surgical treatment
  - Identifying specialist centres
- What is the effect of…
  - Cancer site
  - Age
  - Distance to a specialist centre
  - Deprivation

Cancer Registry Data

Pathology Reports
Oncology Notes
Death Certificates
MDT data

→

Regional Cancer Registries

→

National Cancer Data Repository

Cancer Registries collect data on all invasive, in-situ and uncertain tumours, including pathology. Treatment information is limited but improving

HES Data

Clinical Coders in Trusts

→

Information Centre for Health and Social Care

→

National Cancer Data Repository

NHS Trusts collect data on all in-patient admissions for all conditions (including cancer). Treatment information is coded, but detailed pathology is unavailable.

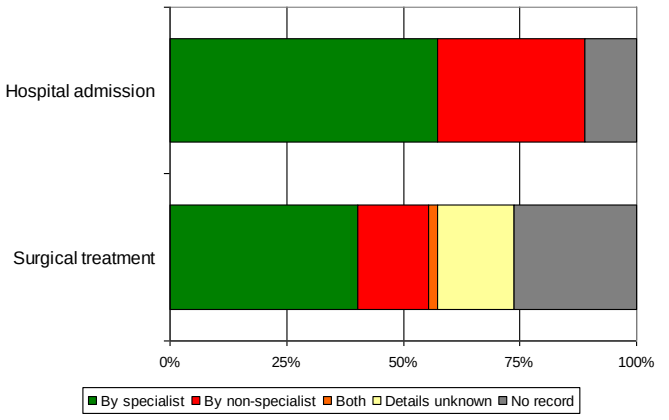
Methodology

- Identified all primary bone cancers 2000-2007 using ICD 10 codes on registry data – 3,500 bone sarcomas
- Linked to HES data using NHS number and demographics
- Identified care episodes for cancer using ICD 10 codes on HES data.
- Identified surgical treatment from HES using OPCS 4 codes relating to orthopaedic surgery.
- HES data includes Trust of treatment code

Specialist centres

- Included the 5 specialist centres
  - London Sarcoma Service / RNOH
  - Oxford Sarcoma Service
  - Newcastle
  - ROH, Birmingham
  - Greater Manchester and Oswestry Sarcoma Service
- Included Bristol
  - Was working as specialist centre between 2000 – 2007
  - PCTs near Bristol clearly referring into Bristol in this period.

All patients



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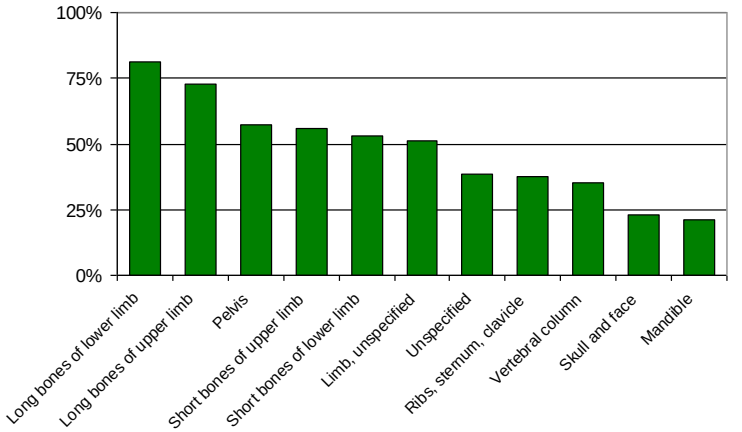
Cancer Site - specialisation



These differences remain when we adjust for other factors
(age, sex, deprivation, distance from specialist centre)

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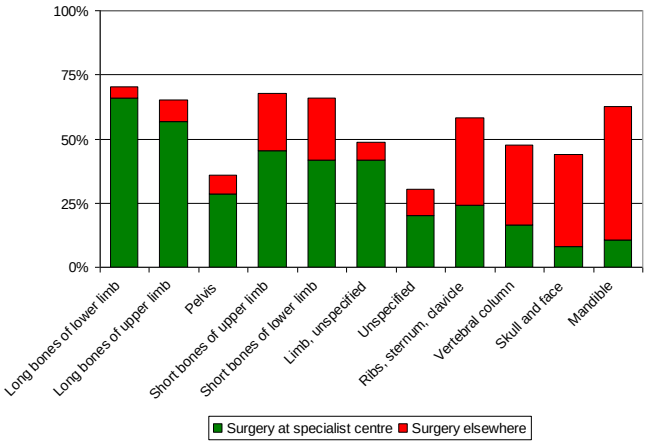
Cancer Site - surgery



These differences remain when we adjust for other factors
(age, sex, deprivation, distance from specialist centre)

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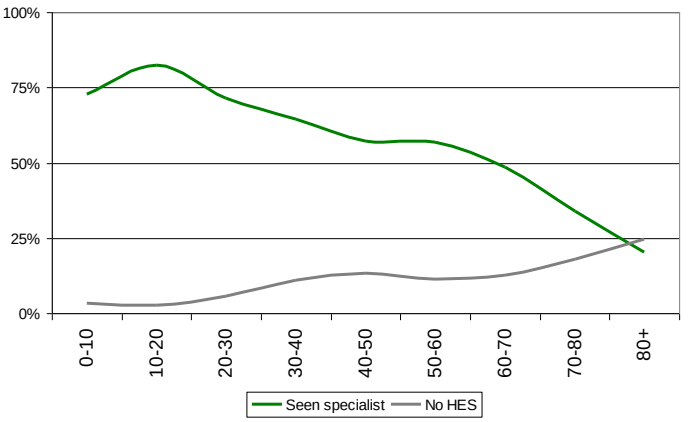
Age - specialisation



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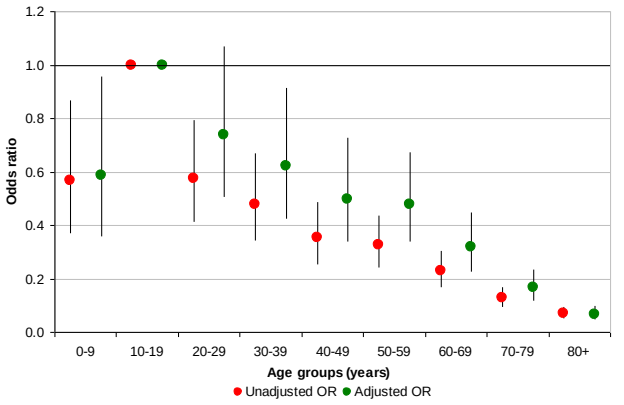
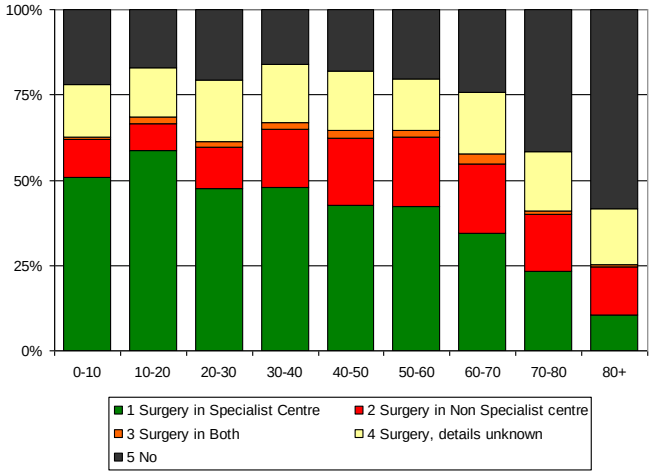
Age - specialisation

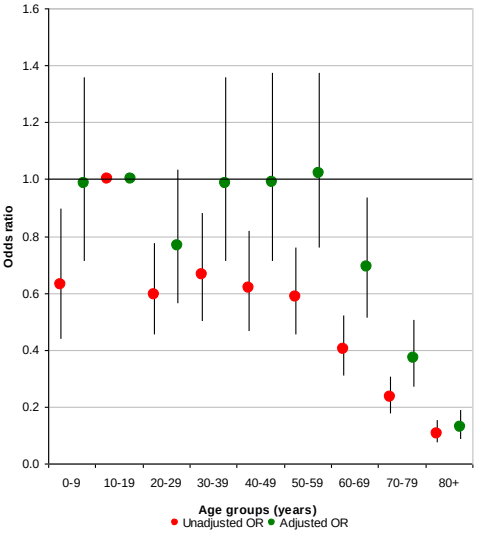


Adjusting for factors only explains part of the trend
(cancer site is main driver)

Age – surgical treatment



Age – surgical treatment



- Adjusting for factors explains the trend in under 60's
  - *cancer site is main driver*
- Elderly patients less likely to receive surgery
  - *but haven't adjusted for co-morbidities*

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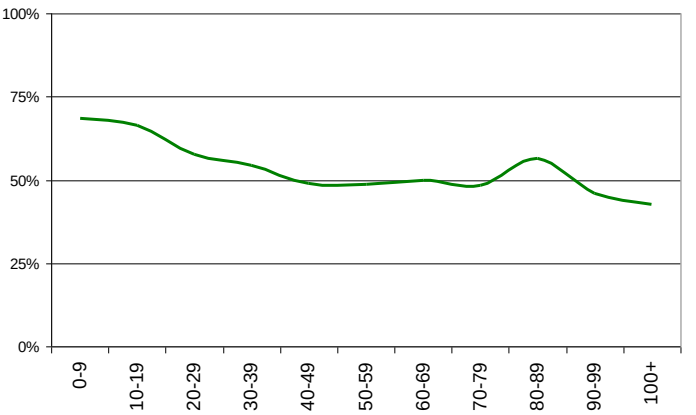
Distance - specialisation



These differences increase when we adjust for other factors
(age, sex, deprivation, cancer site)

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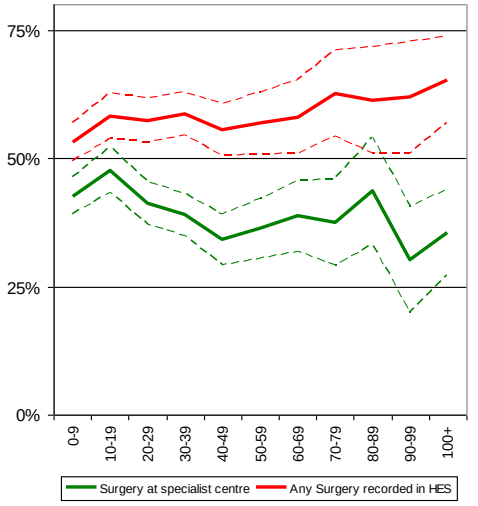
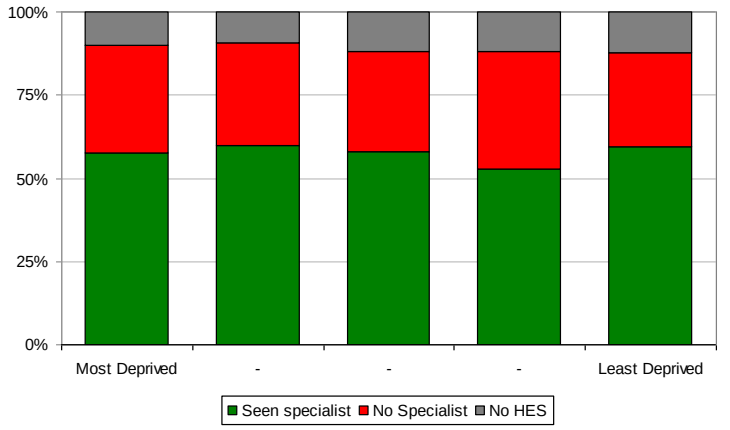
Distance – surgical treatment

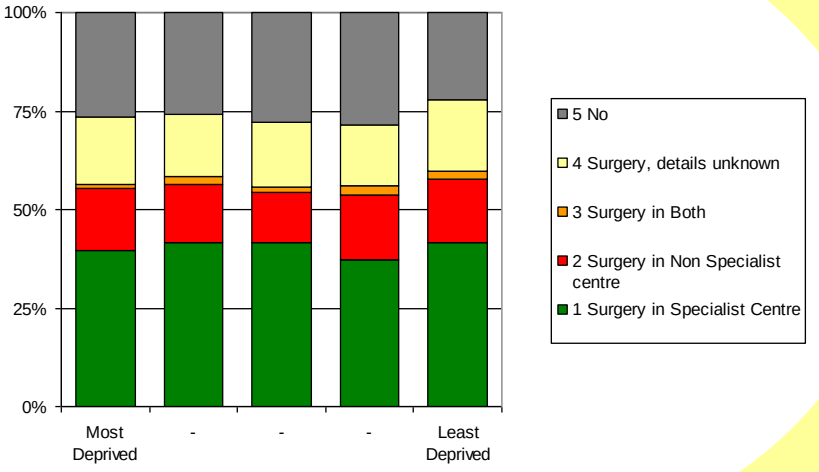


- No clear trend for treatment in specialist centre
- Trend for any surgical treatment *increases* with distance?
  - Not statistically significant
- Adjusting for other variables does not dampen trends.

Deprivation – specialisation



Deprivation – surgical treatment



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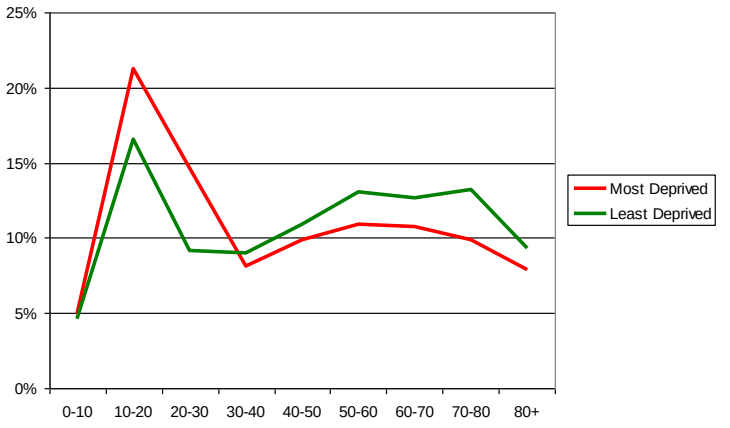
Deprivation – age profile



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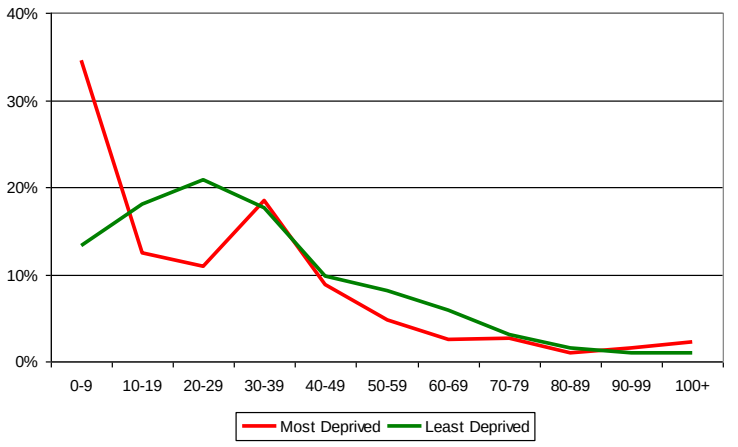
Deprivation – distance



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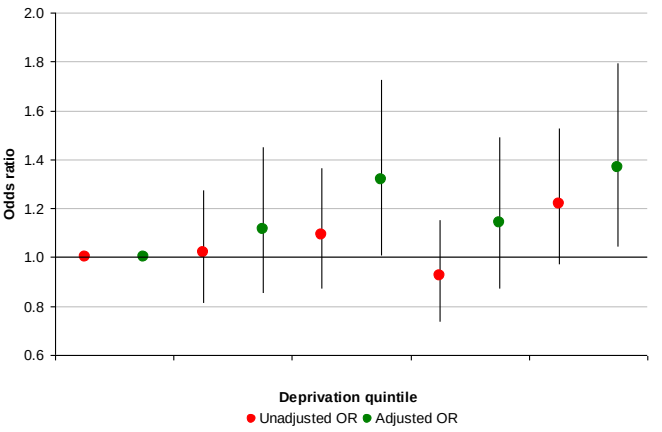
Deprivation – adjusted



- No trend with deprivation before we adjust
- But adjusted data shows a trend.

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Conclusions

- Large national datasets allow analysis of rarer cancers
- Data quality remains a problem
- Cancer site, age, distance to a specialist centre and deprivation all affect whether sarcoma patients are seen by specialists and treated surgically
- Multivariate analysis is a powerful tool for understanding trends in cancer data
- Analysts must work closely with clinicians to understand what appropriate patient pathways look like