Public Health England

Protecting and improving the nation's health

National Cancer Intelligence Network

Upper gastrointestinal cancer (UGI) SSCRG

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Introduction

- Factors affecting who receives surgery & hospital volume and survival
- Routes to diagnosis, surgery and survival
- Future projects

Factors and Volume - background

- Surgery is the main curative treatment for oesophageal, stomach and pancreatic cancer
- Poor patient health or refusal of a patient to undergo treatment should be the only acceptable reasons for not giving clinically appropriate treatment
- Many studies show increasing hospital volume is associated with better short-term outcomes (30-day mortality, in-hospital mortality)
- Fewer studies consider impact of hospital volume on long-term survival and show conflicting results

Methods - Oesophageal and stomach cancer

- Patients diagnosed with oesophageal and stomach cancer in England extracted from the cancer registration dataset

- Surgery information obtained from linked Hospital Episode Statistics data
  - 1 month before to 12 months after date of diagnosis

Total oesophagectomy or partial oesophagectomy

Total gastrectomy or partial gastrectomy

Oesophagogastrectomy

Other and unspecified total excisions of the oesophagus or stomach

Other and unspecified partial excisions of the oesophagus or stomach

Methods – Pancreatic cancer

- Patients diagnosed with pancreatic cancer in England were extracted from the cancer registration dataset

- Surgery information obtained from linked Hospital Episode Statistics data
  - 1 month before to 6 months after date of diagnosis

Pancreatectomy

Pancreaticoduodenectomy

Excision of head of pancreas, excision of tail of pancreas

Other and unspecified total or partial excisions of the pancreas

Factors affecting surgery - Summary

- Older patients and patients resident in more deprived areas are less likely to undergo surgery

- To understand these differences more detailed prospective clinical data should be collected

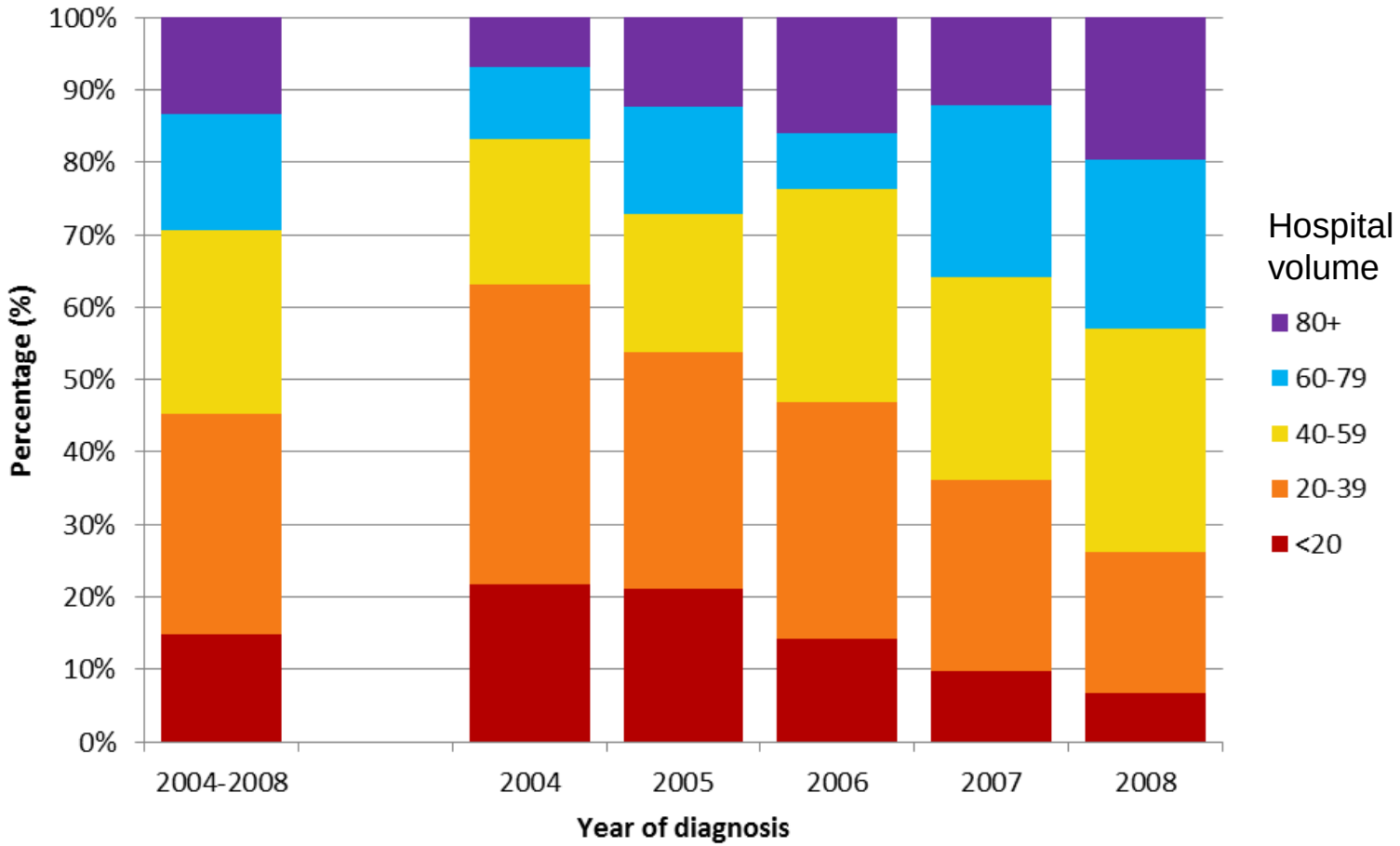
Hospital volume - Methods

- Hospital Volume: Number of (oesophageal and gastric) or (pancreatic) cancer operations carried out in each hospital in each year

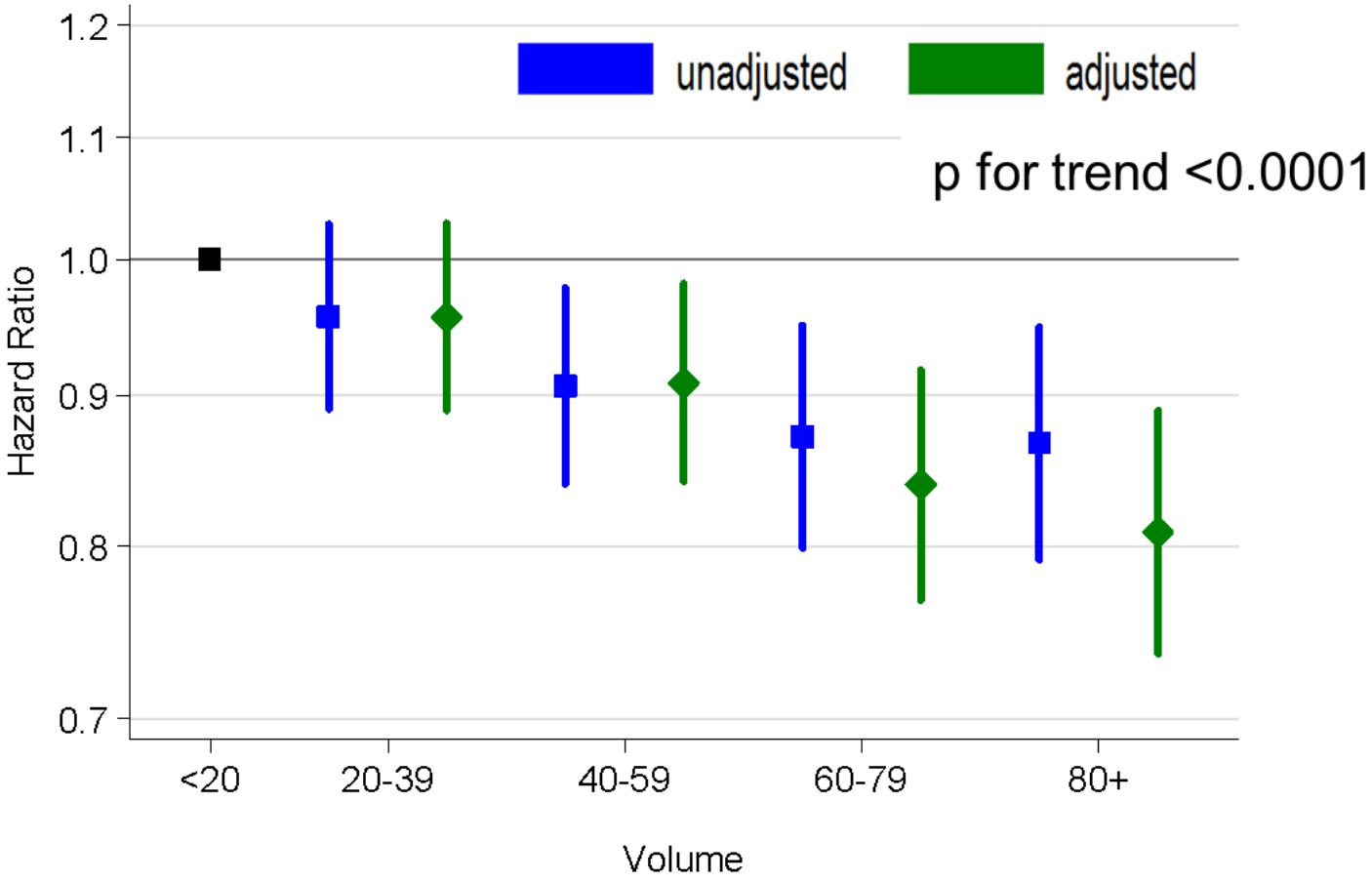
- Univariate and multivariate Cox proportional hazards regression analyses were used to estimate the all-cause mortality hazard ratios (HRs)

  - According to hospital volume
  - Adjusted for sex, age, deprivation, comorbidity and the proportion of patients resected in a PCT

Surgical resection by hospital volume – oesophageal and stomach cancer

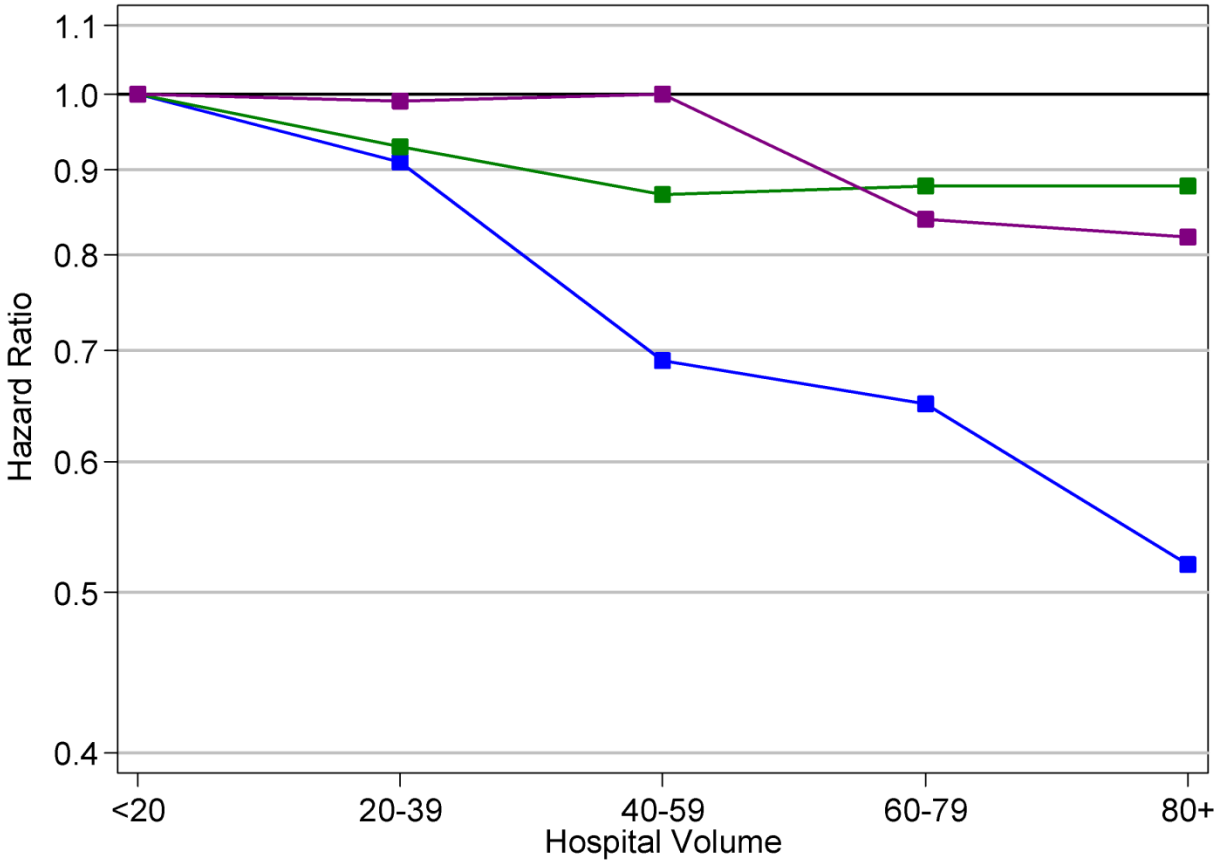


HR according to hospital volume – oesophageal and stomach cancer



Adjusted for sex, age, deprivation, co-morbidity, type of cancer and the proportion of patients resected in a PCT

Adjusted HRs according to hospital volume – oesophageal and stomach cancer



30-365 days
χ^2= 4.35; p=0.037

>365 days
χ^2=10.61; p=0.0011

<30 days
χ^2=28.29; p<0.0001

Hospital volume - Summary

- Oesophageal and stomach cancer
  - Higher short- and longer-term survival for patients who undergo surgery in high volume settings
  - Supports the continued centralisation of oesophageal and stomach cancer services in England
- Pancreatic cancer
  - Hospital procedure volume and survival was in the direction of higher survival in larger volume hospitals but the association was not statistically significant.

Routes to diagnosis - Aim

- To investigate the association between emergency presentation, surgery and survival

- Concentrate on pancreatic cancer, oesophageal cancer and stomach cancer in the first instance

Future analysis

Survival and deprivation

- Examine the difference in cancer survival between socioeconomic groups in England.
- Relative survival - 0-1 month, 1 month-1 year, 1-2 years and 2-5 years
- Annual excess deaths between the least deprived and most deprived quintile

Thank you