

Ongoing and planned national work in lung cancer epidemiology

Henrik Møller, Sharma Riaz, Mick D Peake

Thames Cancer Registry, King's College London
National Cancer Intelligence Network

High priorities in workplan

- Update linked dataset to incidence 2006: in progress
- Get access to national audit data and compare date of diagnosis, cell type, treatment
- Cancer survival by cancer network and PCT area
- Mesothelioma incidence and survival in regions and cancer networks
- Comparative survival in England, Norway and Sweden



Variation in radical resection for lung cancer in relation to survival

Henrik Møller, Sharma Riaz, Ruth Jack, Karen Linklater,
Victoria Coupland, Elizabeth Davies, Mick D Peake

Thames Cancer Registry, King's College London
National Cancer Intelligence Network

Lung cancer in the UK

- Incidence: 39,000 cases per year
- Mortality: 36,000 lung cancer deaths per year
- Survival: 5-year relative survival is 8.5%



National Lung Cancer Audit

Key findings about the quality of care for
people with Lung Cancer in England
incorporating headline and completeness
data from Wales

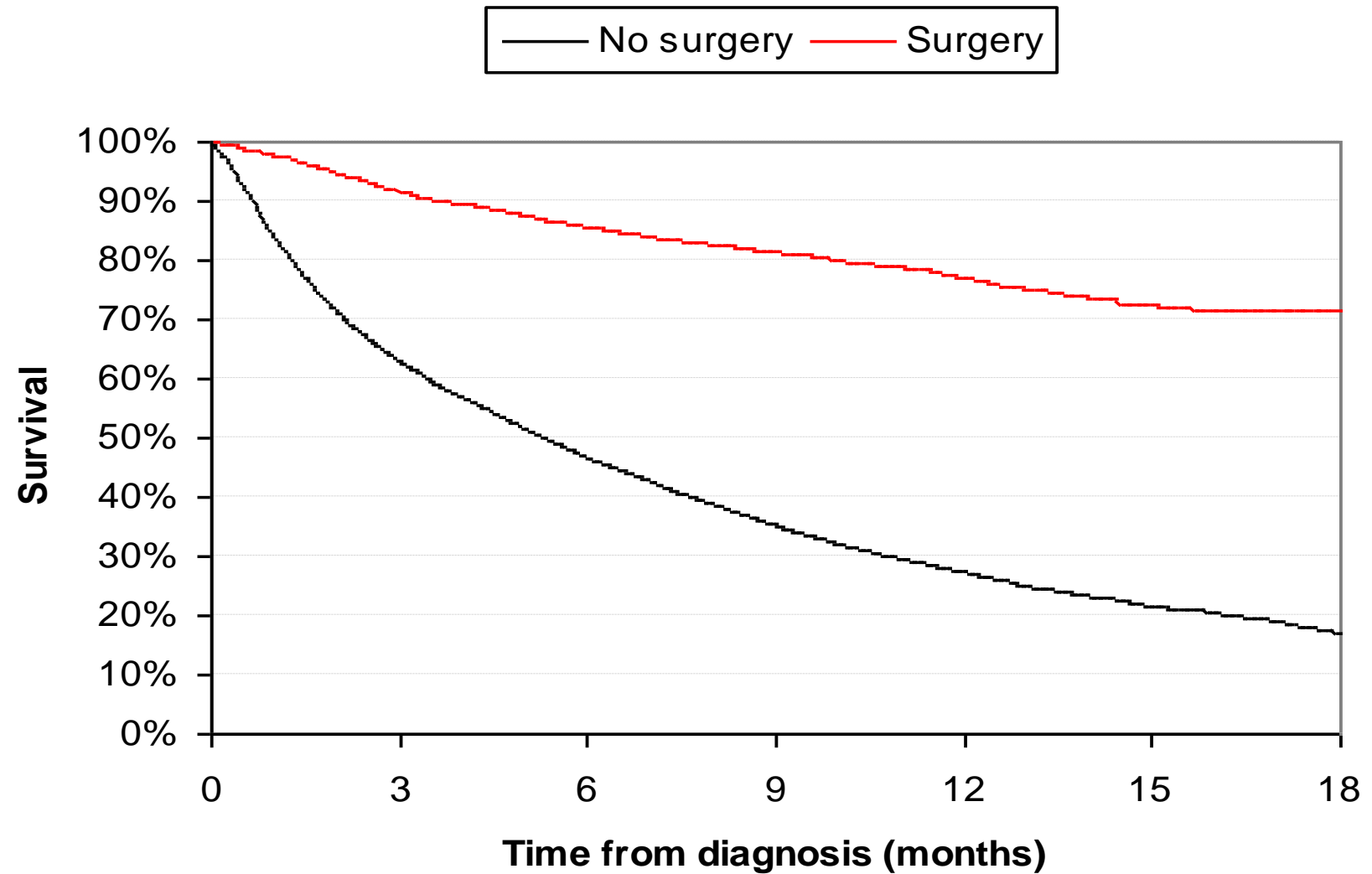
Report for the audit period 2005



Prepared in association with:
Healthcare Commission • Royal College of Physicians

FOR HEALTH AND SOCIAL CARE

Radical resection



Questions

- What proportion of lung cancer patients in England are treated with radical resection?
- How does this vary in the country?
- What is the association between radical surgery and survival?
- *Could we increase lung cancer survival by increasing the frequency of radical resection?*



Materials and methods

- Lung cancer in England, 1998-2003, excl. SCLC (n=152,000)

Source: cancer registries in England

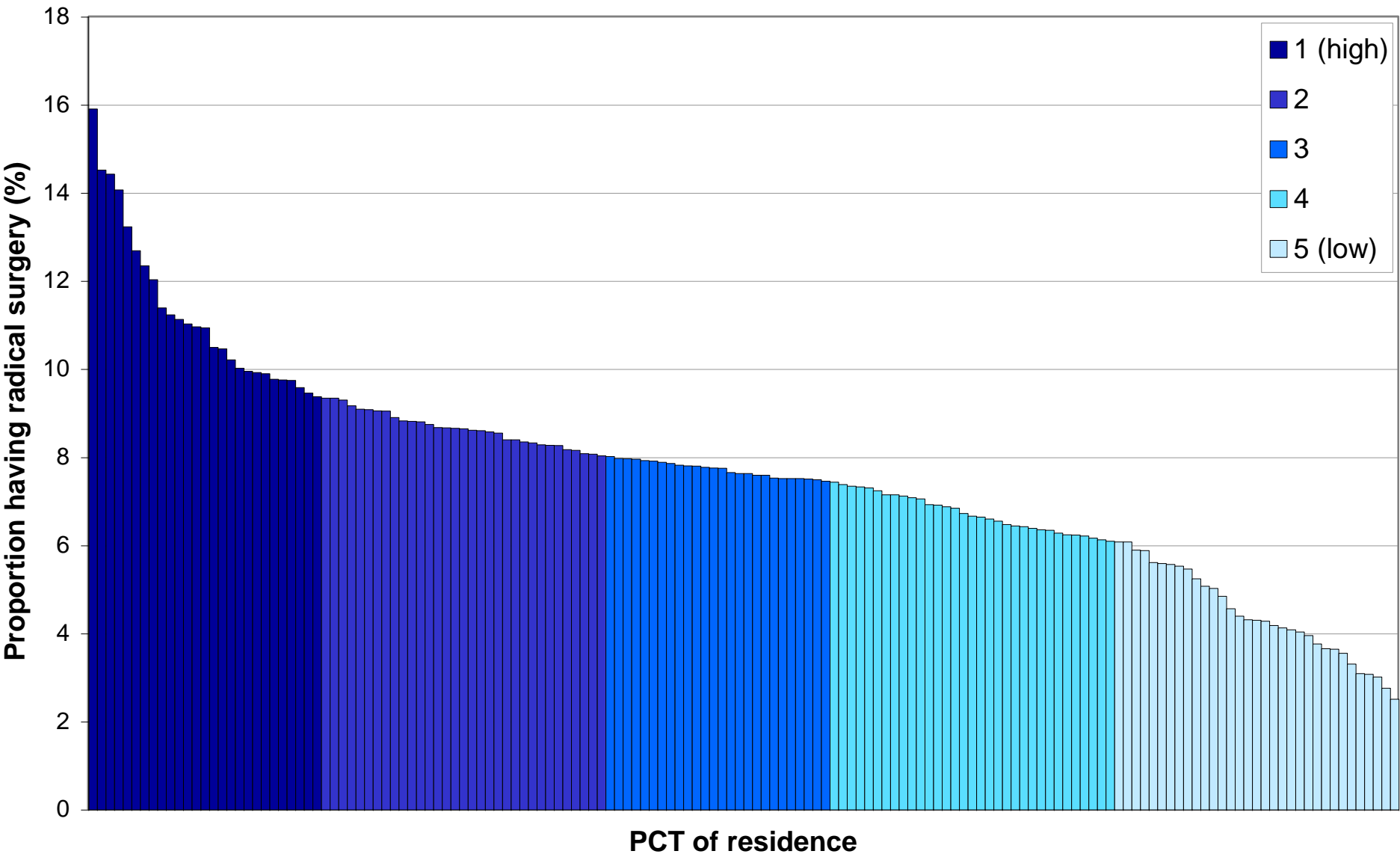
- Radical surgery (%) by PCT area: quintile distribution and map

Source: hospital episode statistics data

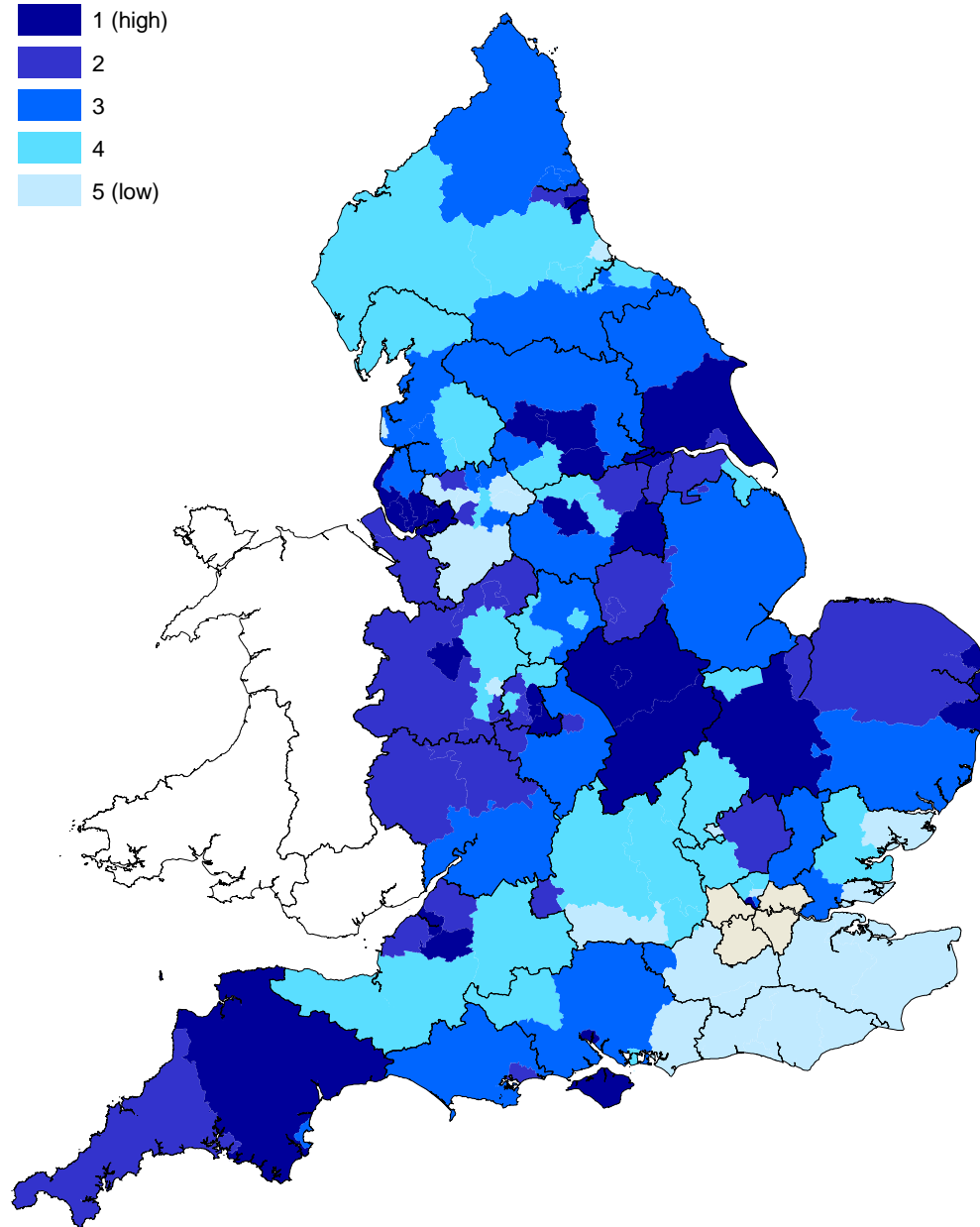
- Separate analysis of regional variation in England



PCT variation in radical surgery



PCT variation in radical surgery



Specific hypotheses

- Survival of all patients in relation to surgery quintile

Resection $\uparrow \rightarrow$ Survival \uparrow ?

- Survival of resected patients in relation to surgery quintile

Resection $\uparrow \rightarrow$ Survival \downarrow ??



Survival analysis: all NSCLC patients

All NSCLC patients

Unadjusted

Adjusted for sex, age
and SES

Surgery quintile	n	%	% Surg	HR	(95% CI)	HR	(95% CI)
1 (high)	30,956	20%	11%	0.96	(0.94, 0.97)	0.96	(0.95, 0.98)
2	30,297	20%	9%	0.97	(0.95, 0.98)	0.97	(0.95, 0.98)
3	30,036	20%	8%	0.98	(0.97, 1.00)	0.99	(0.97, 1.00)
4	30,351	20%	7%	1.01	(0.99, 1.03)	1.01	(1.00, 1.03)
5 (low)	30,325	20%	4%	1.00		1.00	
χ^2				44.33		44.40	
p for trend				<0.001		<0.001	



Survival analysis: resected NSCLC patients

Resected NSCLC patients

Unadjusted

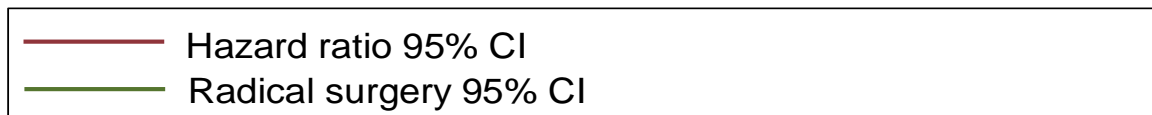
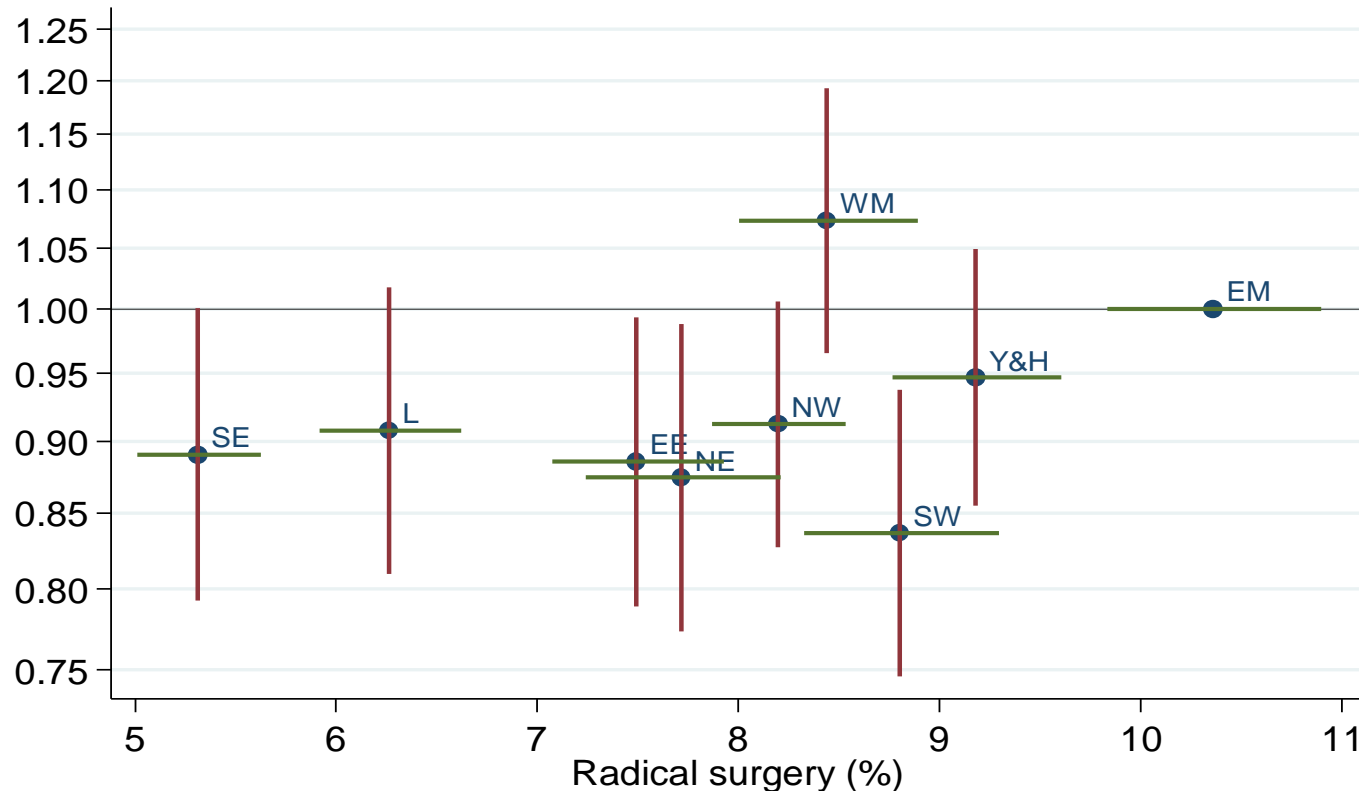
Adjusted for sex, age and SES

Surgery quintile	n	%	% Surg	HR	(95% CI)	HR	(95% CI)
1 (high)	3,542	30%	100%	1.19	(1.09, 1.31)	1.14	(1.04, 1.25)
2	2,638	22%	100%	1.14	(1.04, 1.26)	1.09	(0.99, 1.20)
3	2,327	20%	100%	1.09	(0.98, 1.20)	1.06	(0.96, 1.17)
4	2,068	17%	100%	1.12	(1.01, 1.24)	1.10	(0.99, 1.22)
5 (low)	1,338	11%	100%	1.00		1.00	
χ^2				12.87		5.65	
p for trend				<0.001		0.02	



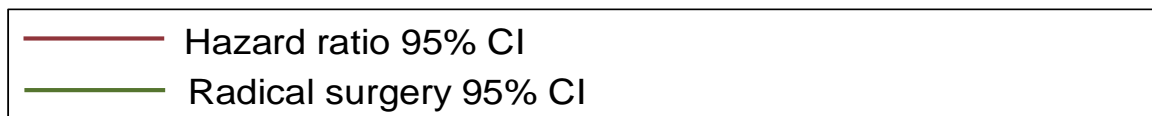
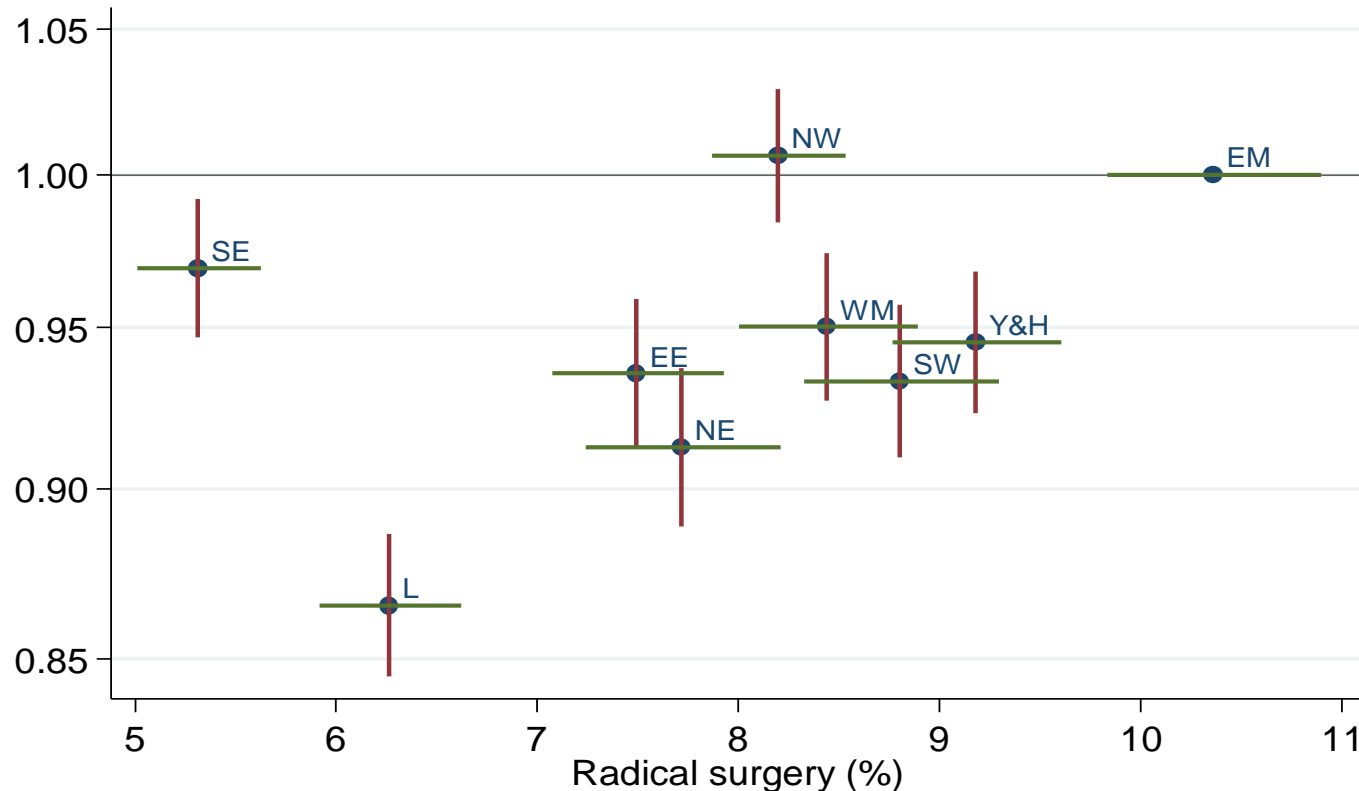
Regions in England

Survival of resected NSCLC patients, adjusted for age, sex and SES



Regions in England

Survival of all NSCLC patients, adjusted for age, sex and SES



Discussion

- PCT areas with high resection rates have high overall survival
 - ? *Eligibility for resection*
 - ? *Selection of patients*
- PCT areas with the highest resection rates have low survival of the resected patients
 - ? *Resection of “unresectable” patients*
 - ? *Diminishing returns*



Regional variations

Survival of resected NSCLC:

Low in West Midlands and East Midlands

Survival of all NSCLC:

Low in North West and East Midlands

High in London



Acknowledgment

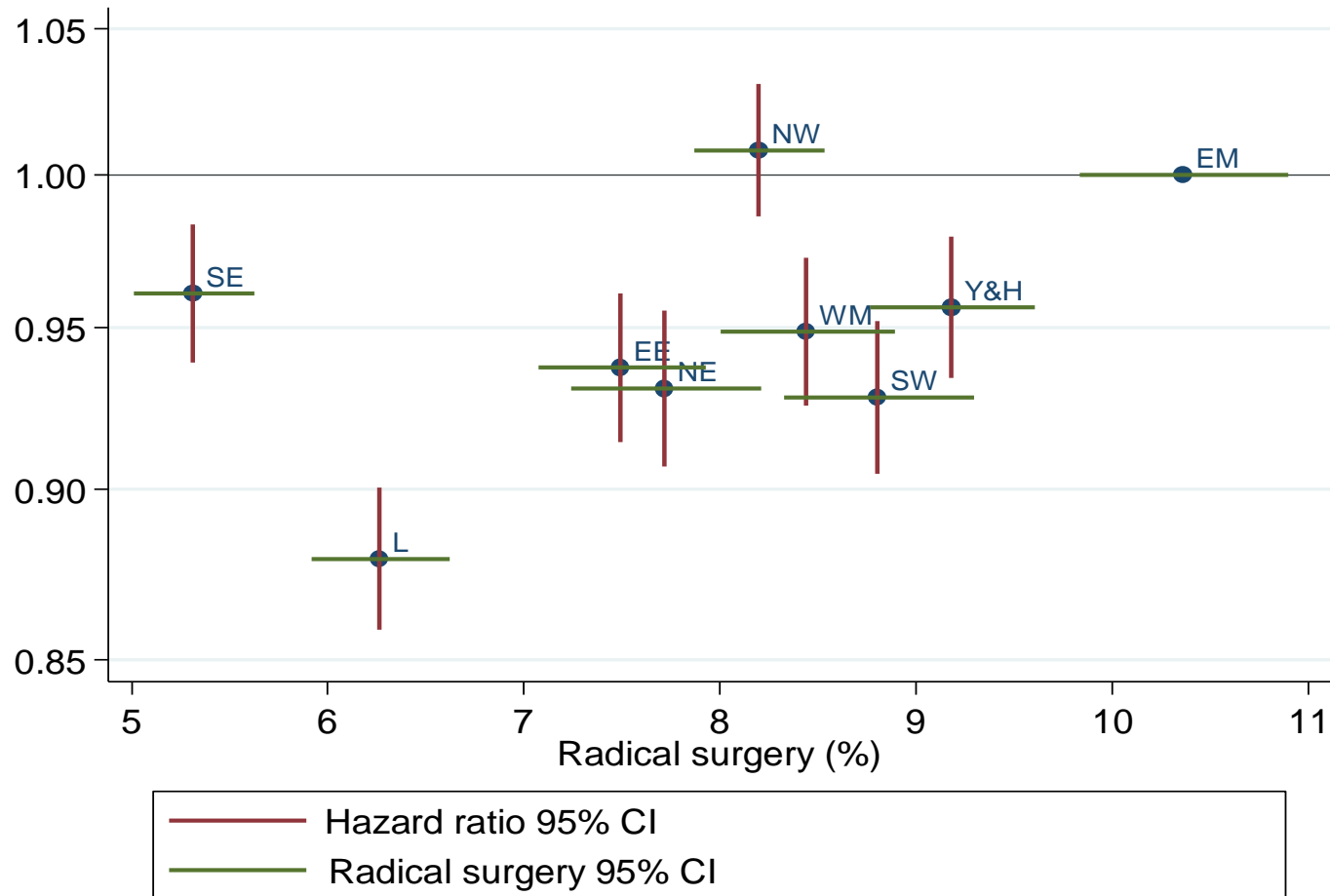
This is a contribution from the National Cancer Intelligence Network (www.ncin.org.uk) and is based on information collected and quality assured by the regional cancer registries in England (www.ukacr.org).





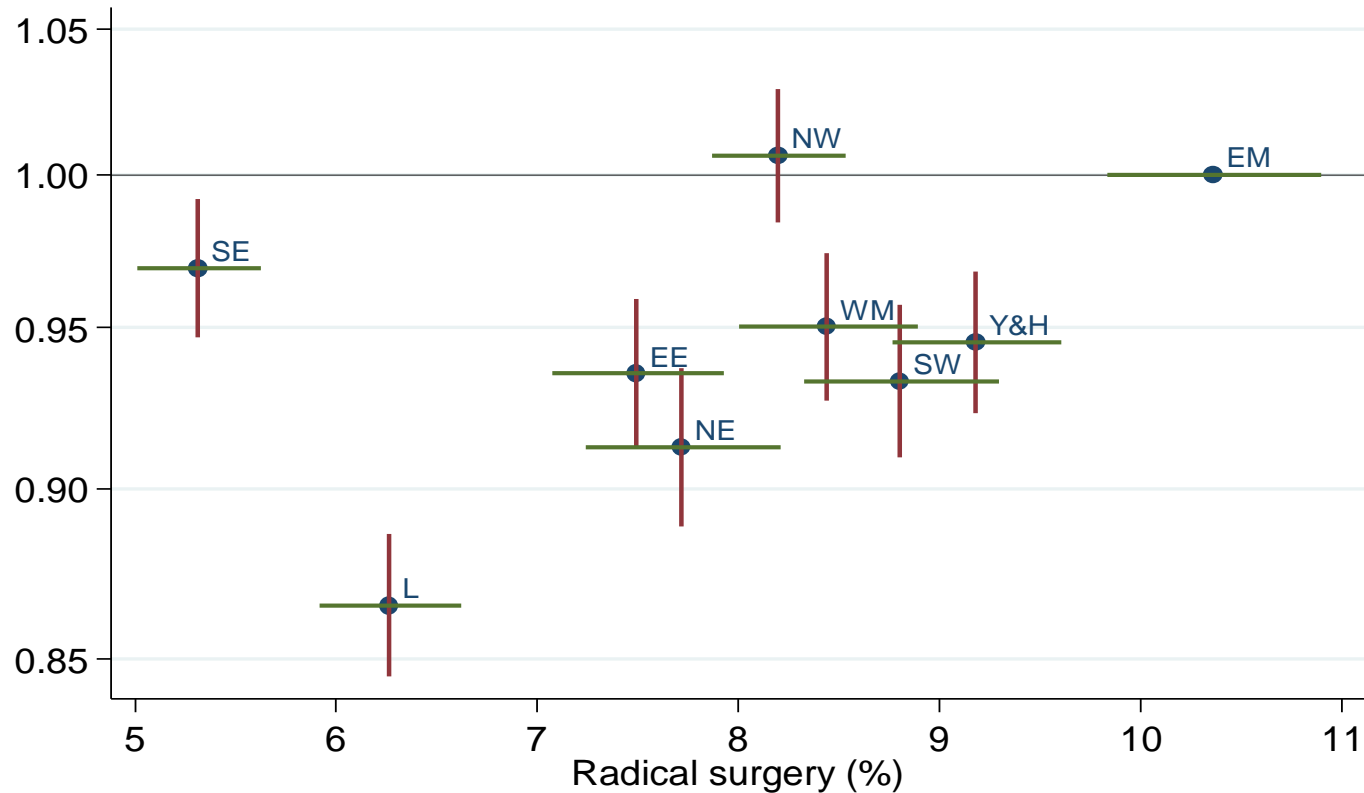
Regions in England

Survival of all NSCLC patients



Regions in England

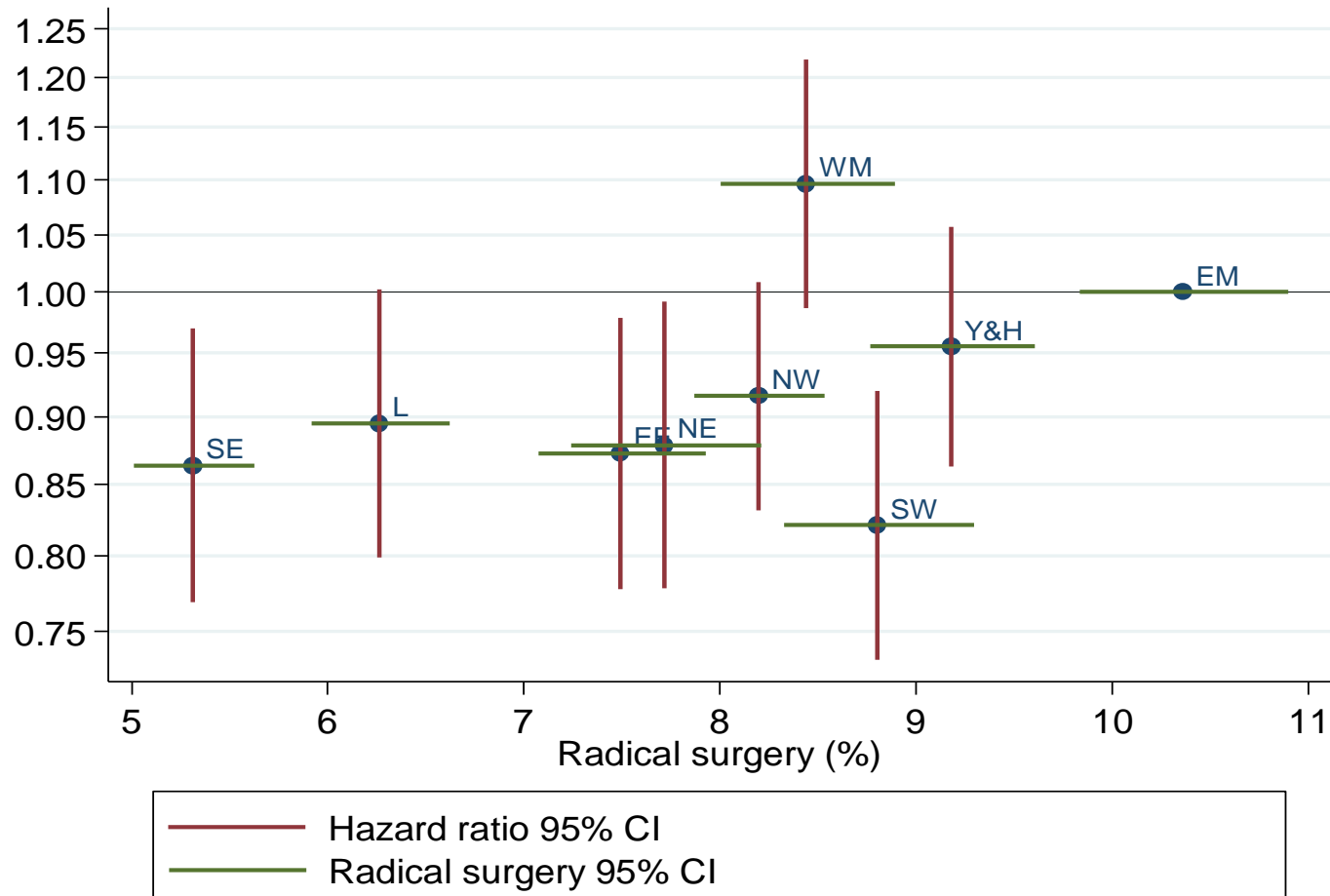
Survival of all NSCLC patients, adjusted for age, sex and SES



— Hazard ratio 95% CI
— Radical surgery 95% CI

Regions in England

Survival of resected NSCLC patients



Regions in England

Survival of resected NSCLC patients, adjusted for age, sex and SES

