Smokers' interest in a national lung cancer screening programme

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Lung cancer is a public health problem

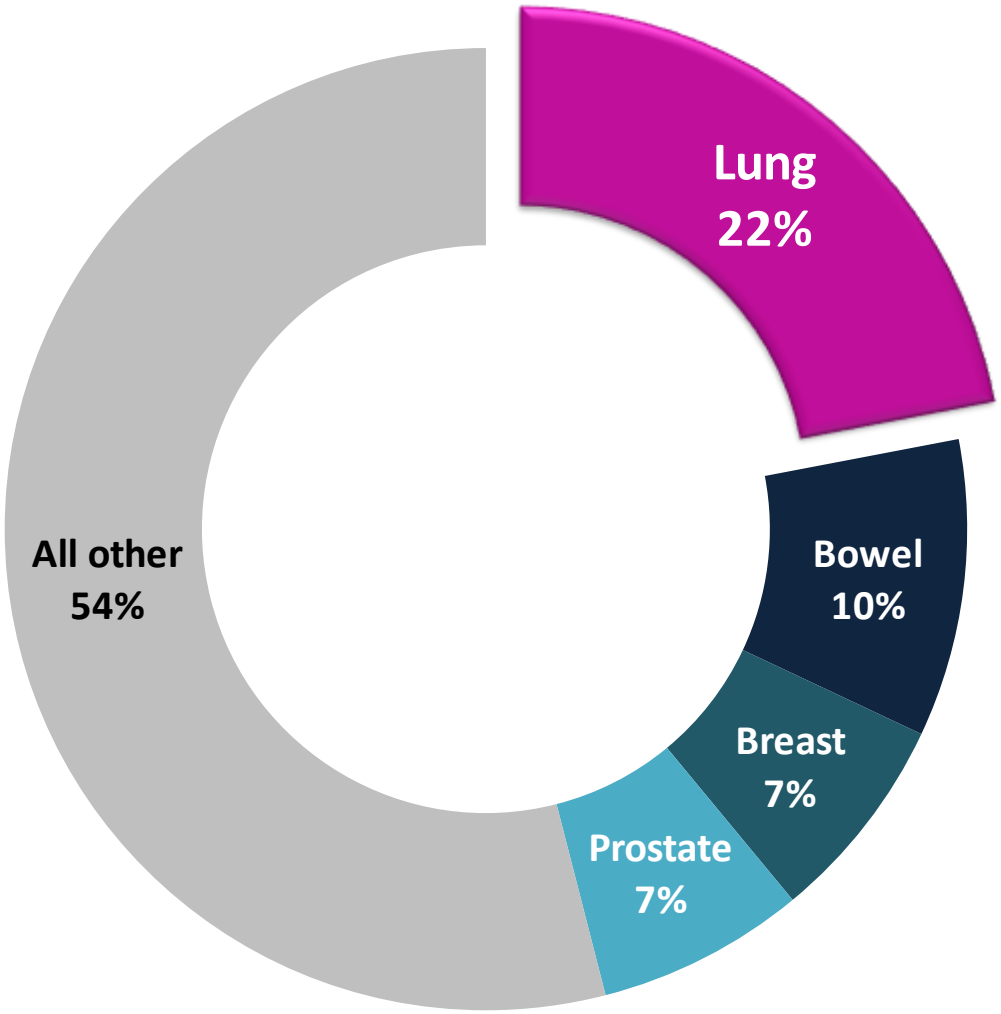

Figure: % all UK cancer mortality

High incidence:

- 2nd most common cancer
- 6.6% of US citizens
- increases with deprivation

High mortality:

- 17% 5-year survival in US
- 12% 5-year survival in UK
- Early stage 1A survival 82%

CR-UK (2014); IASLC (2016); O'Dowd et al (2015); ONS (2014;2011); SEER (2005-2012)

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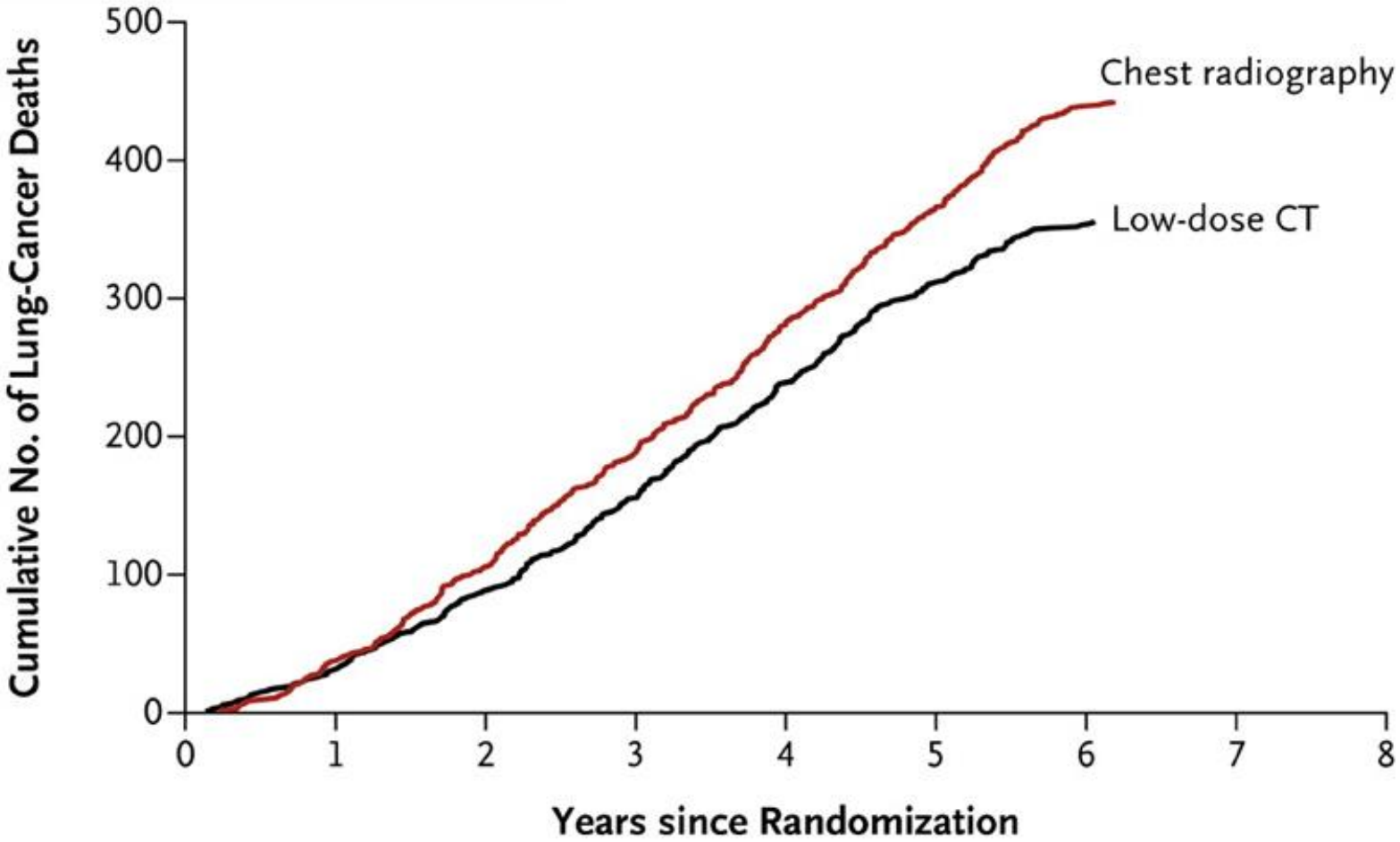
Reduced Lung-Cancer Mortality with Low-Dose Computed Tomographic Screening

The National Lung Screening Trial Research Team*



Implementation and the paradox in uptake

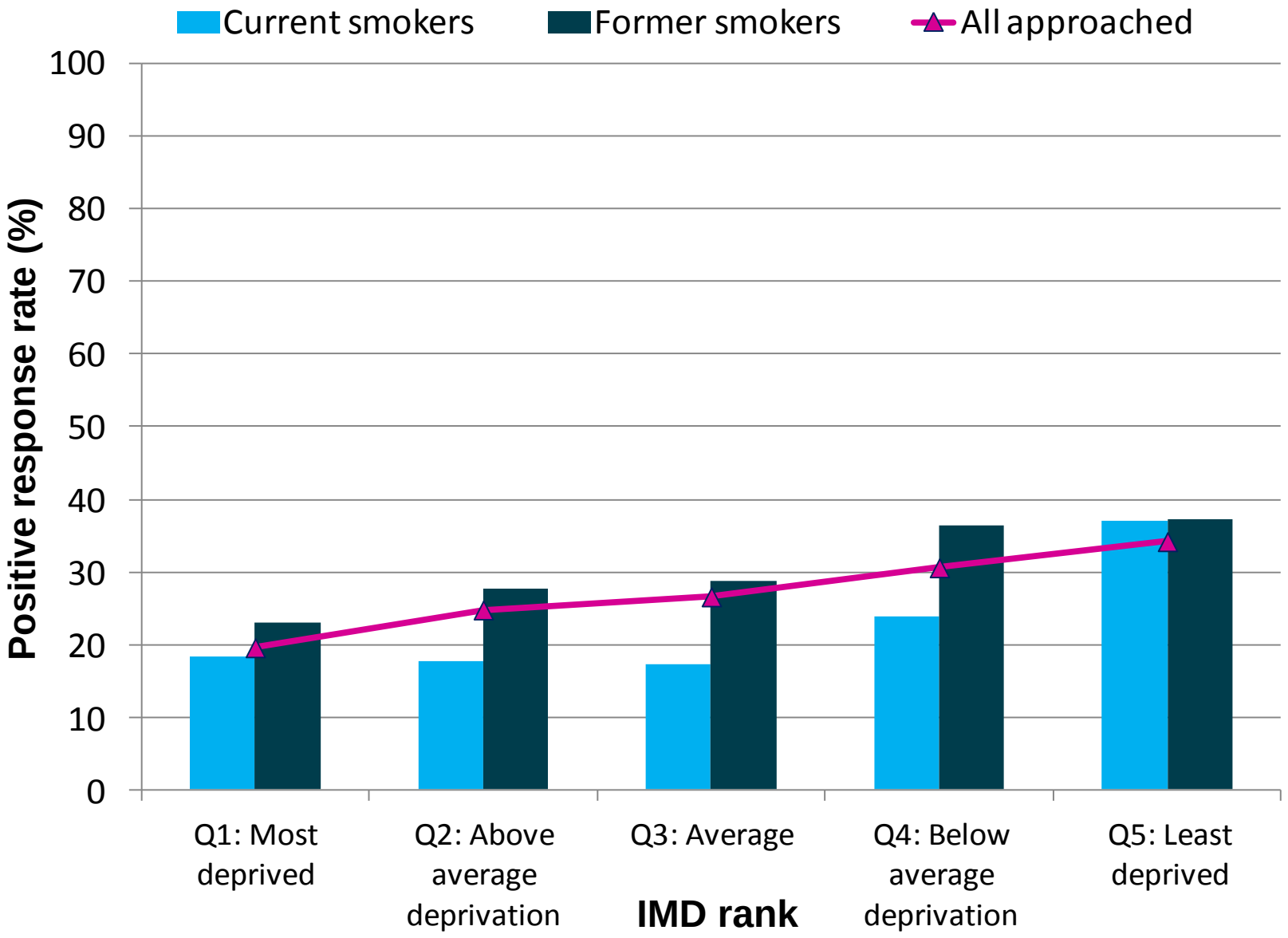
- Recommended by US Preventive Services Task Force
  - Aged 55-80 years, with recent and significant smoking history
  - Covered by Medicare and Medicaid Services

- UK National Screening Committee are deciding

- Increasing risk profile improves the risk-benefit ratio
- Smoking is the key risk factor but is consistently associated with **lower** uptake

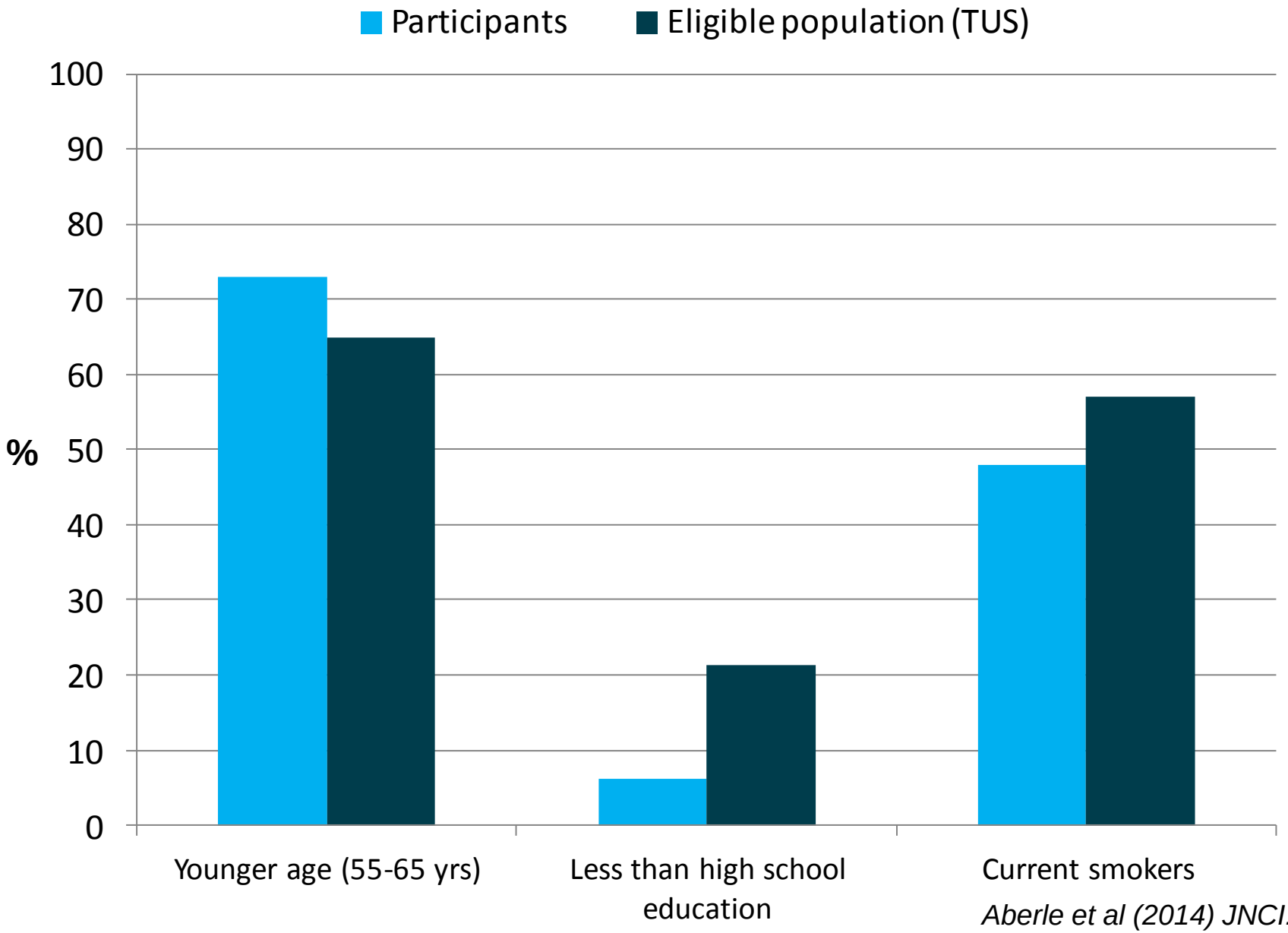
Aberle et al (2011) N Engl J Med: 365; O'Dowd et al (2014) Thorax: 0

UKLS response: smoking status & SEP



McRonald et al (2014) Cancer Prev Res: 7

US NLST participants vs. eligible population



Aberle et al (2014) JNCI: 102

Psychosocial and cognitive factors

- Qualitative studies of smokers and trial non-participants:
  - Fatalism and low perceived benefit
  - Emotional barriers, e.g. worry and avoidance
  - Stigma and distrust

- US nationwide survey (Silvestri et al., 2007) suggests smokers are:
  - Less willing to have a CT scan
  - Less likely to see benefit in early detection
  - Just 50% would undergo subsequent surgery

Ali et al (2015); Carter-Harris et al (2016); Patel et al (2012)

Objectives

- To collect comparable population-based data in the UK to gauge public interest in a national lung cancer screening programme

- To explore how perceptions of screening and early detection of lung cancer might differ in relation to smoking status

Methods and measures

- English population-based sample (n=1445; aged 50-70)
- Random location and quota sampling

- Computer-assisted home-based interviews measuring:
  - Screening intentions in different invitation scenarios
  - Early detection: mortality benefit, surgical treatment
  - Worry about lung cancer risk
  - Stigma
  - Demographics, smoking status and quit confidence

Sample characteristics

	All (N=1445)	Never smokers (22%)	Current smokers (26%)	Former smokers (52%)
Age, mean	60.4	60.1	59.2	61.8
Male, %	49.3	44.0	55.9	54.4
Married/cohabiting, %	61.7	65.3	48.2	65.7
White ethnicity, %	92.9	89.3	95.5	97.9
No qualifications, %	26.1	21.2	36.4	27.3
Cancer experience, %	70.2	68.8	69.0	74.0
Low quit confidence, %	-	-	61.6	-

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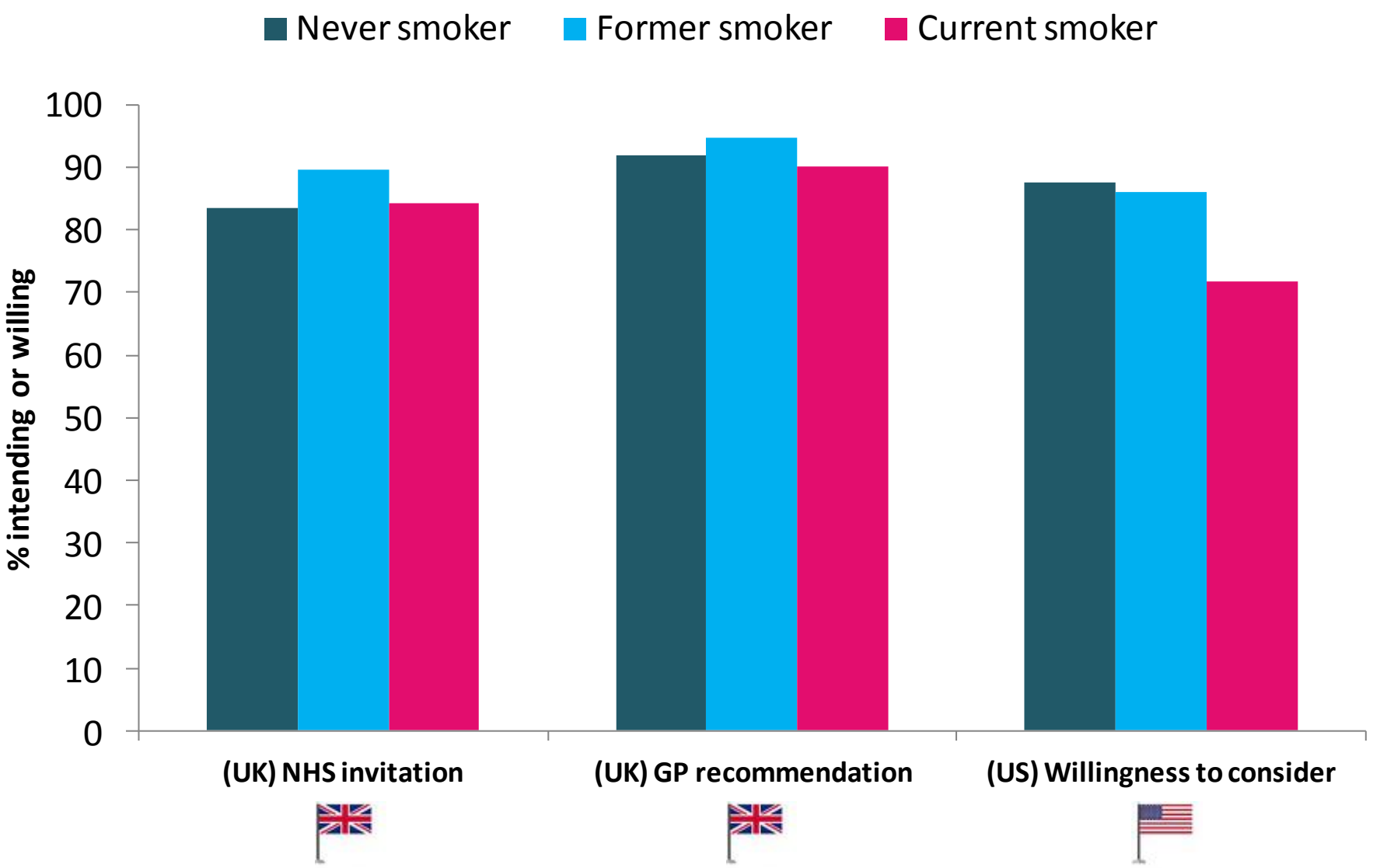
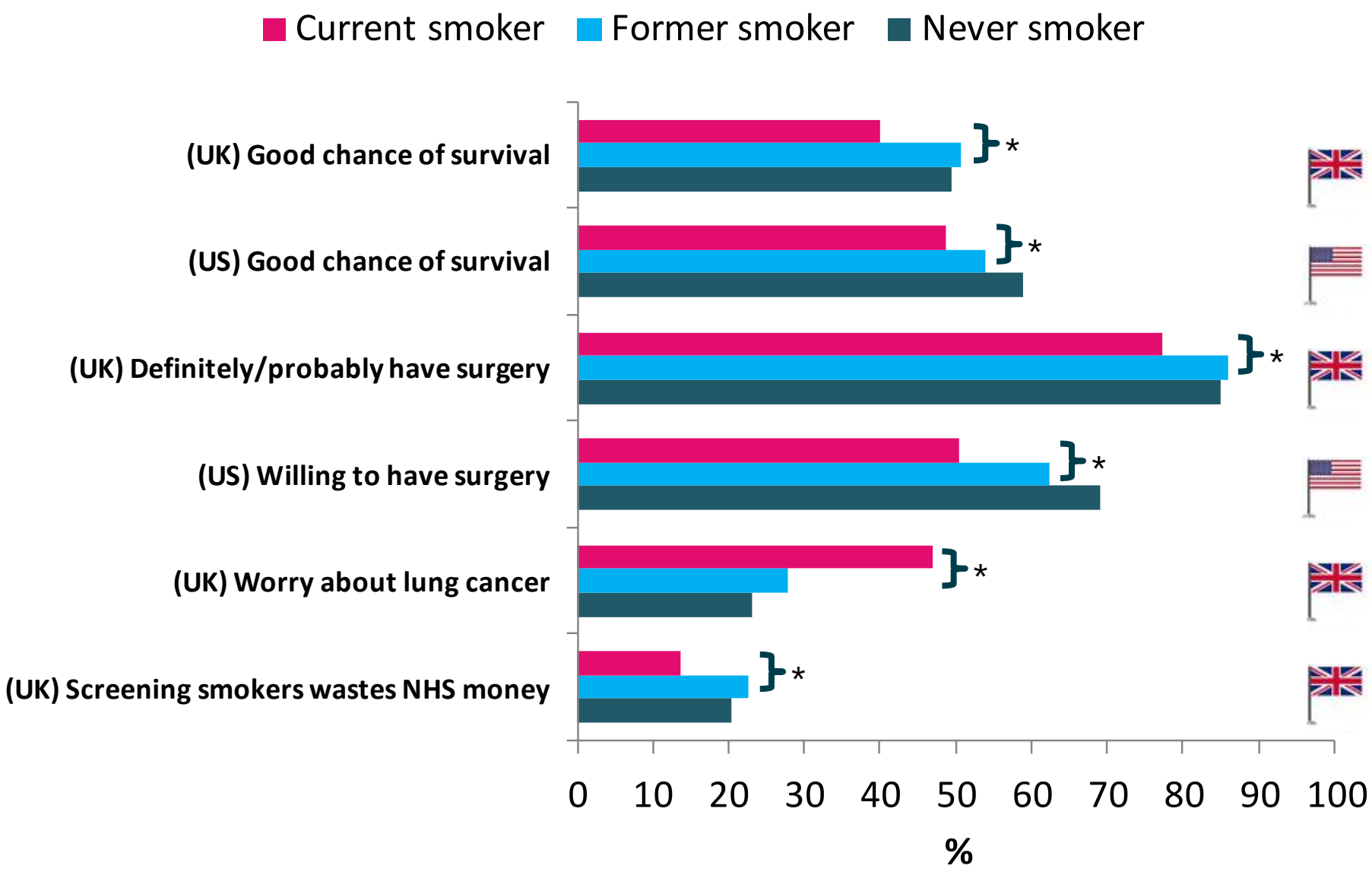
Lung cancer screening intentions



US data from: Silvestri et al (2007)Thorax:62:126-130

Beliefs about early detection & lung cancer



***adjusted odds, p<.05**

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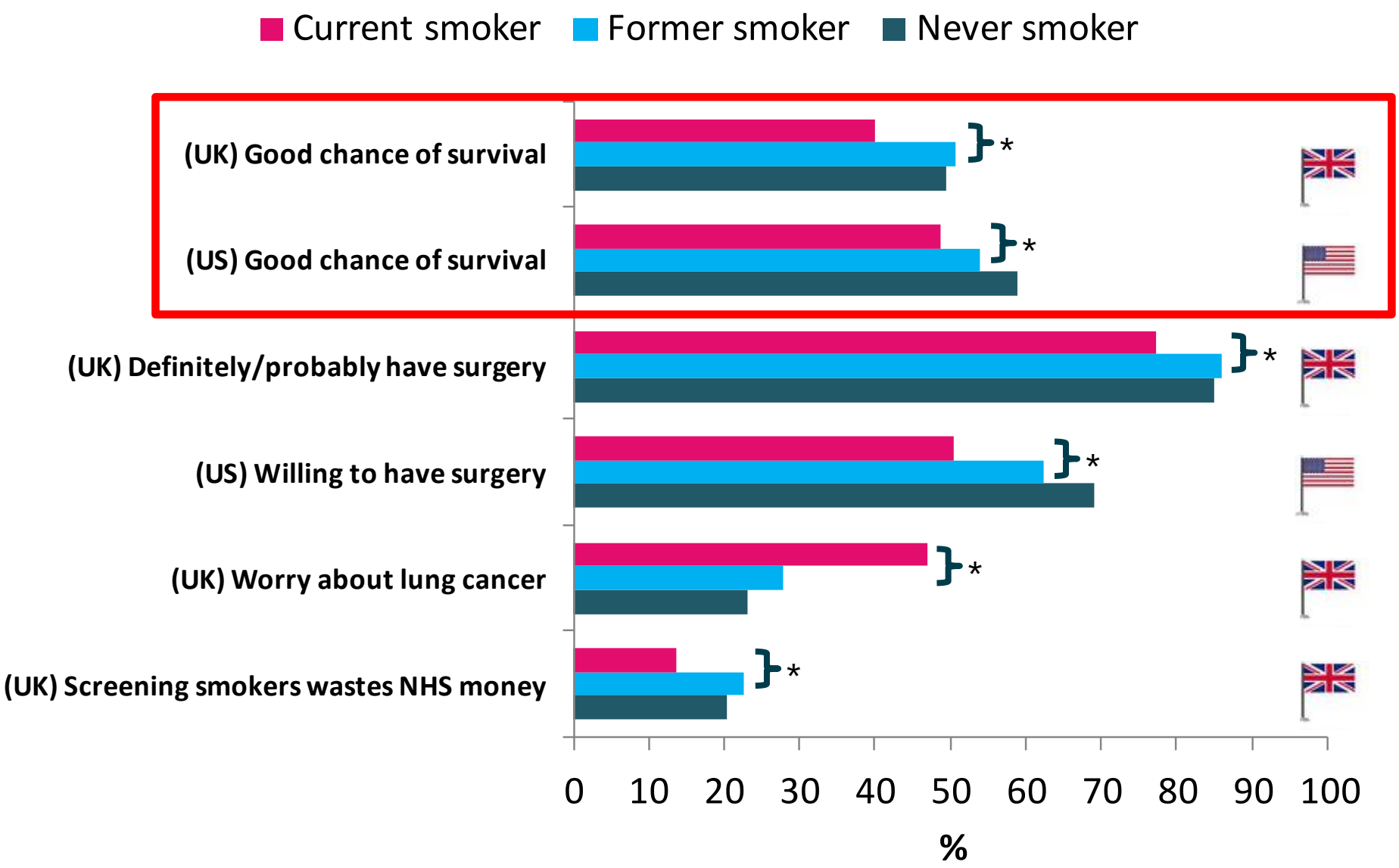

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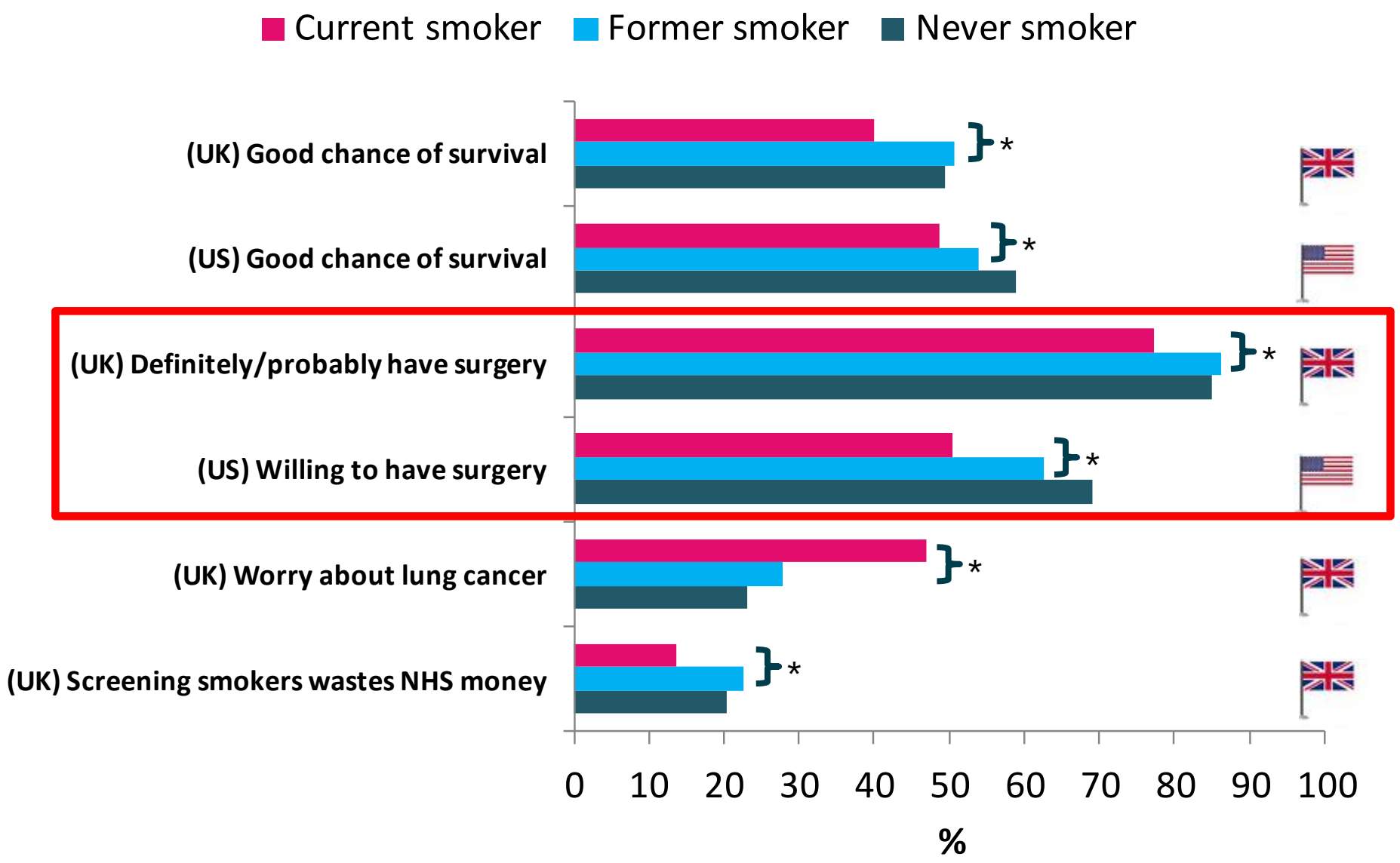

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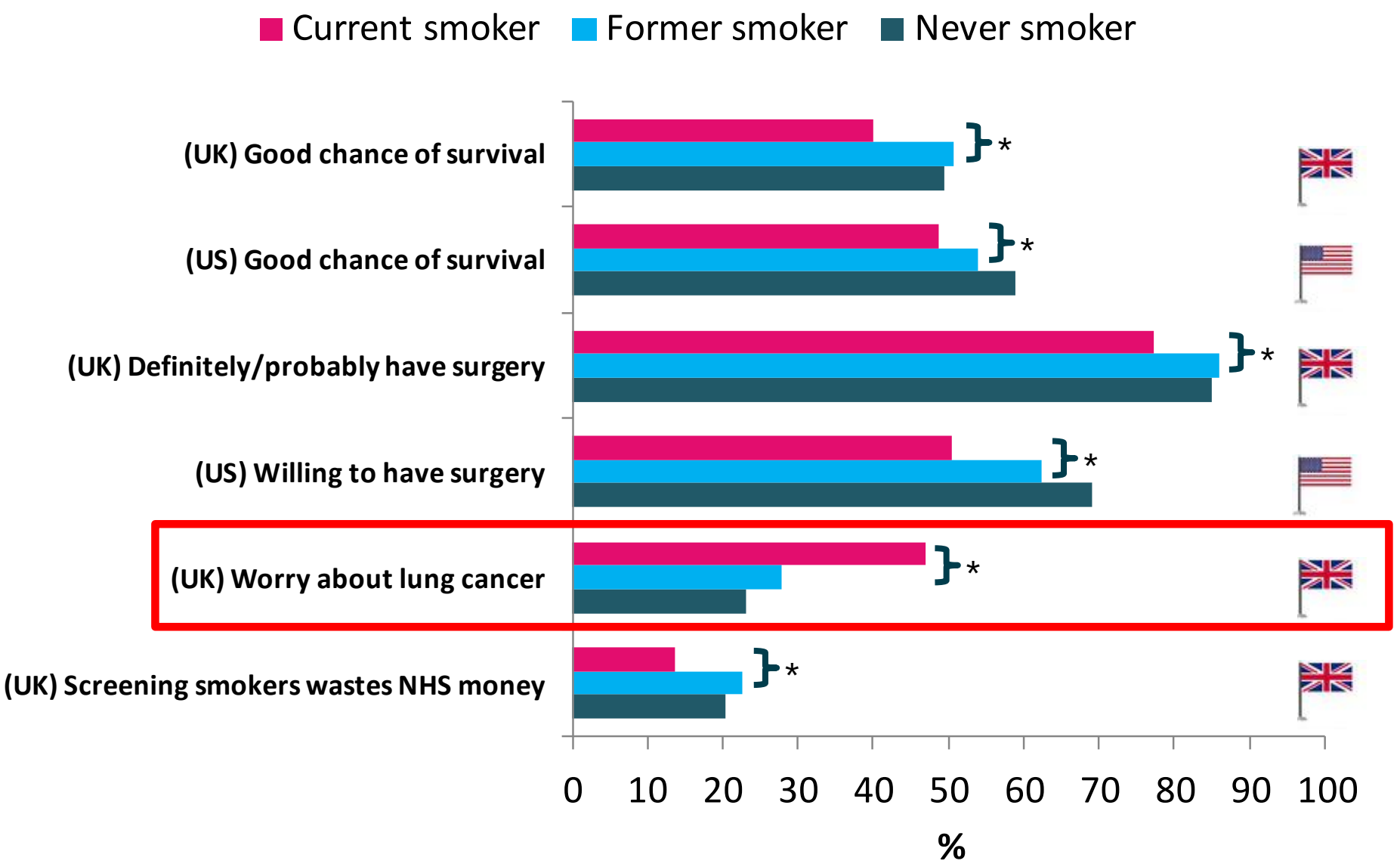

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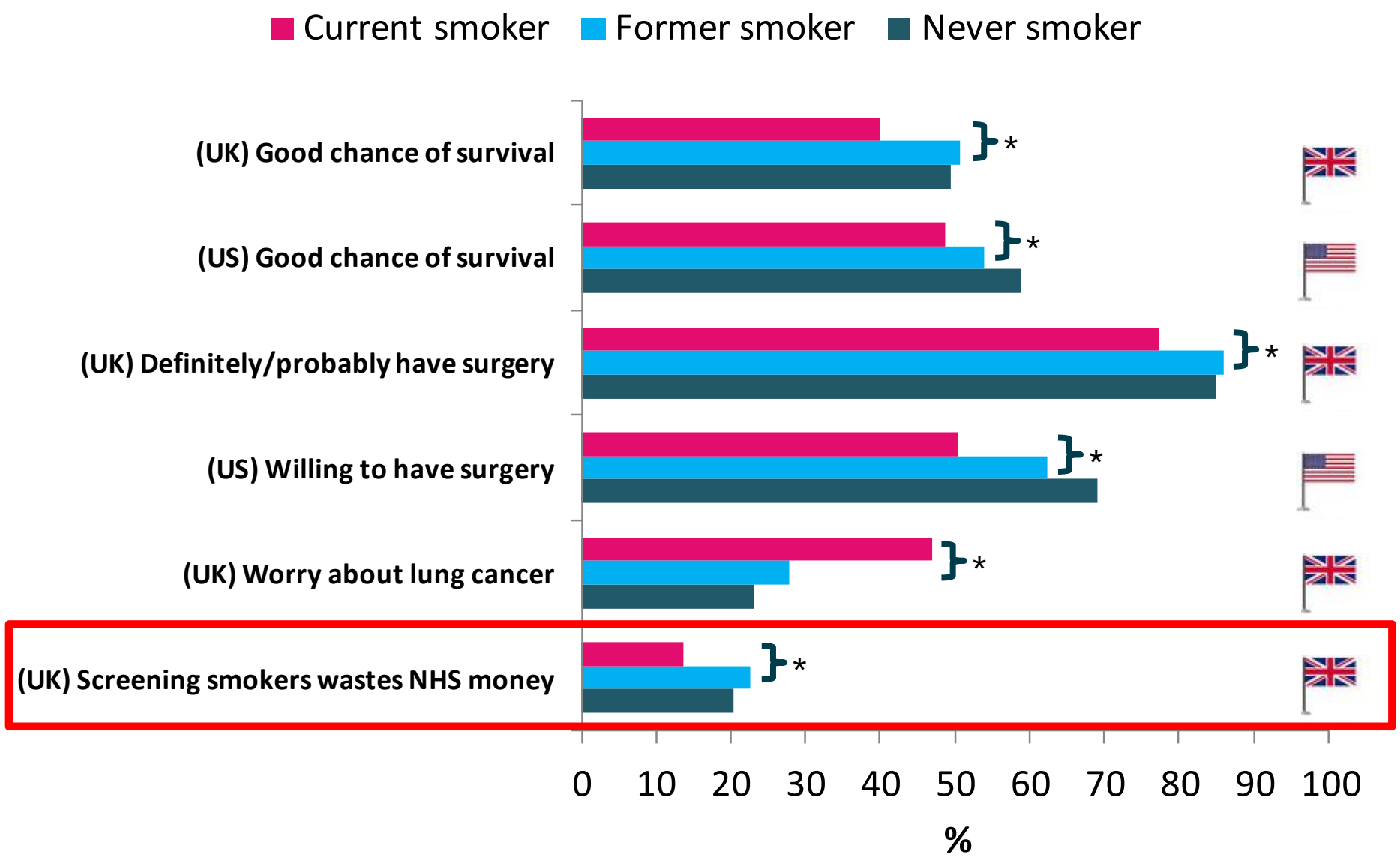

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Early detection beliefs associated with intentions

Odds of intending to be screened (adj)	NHS invitation	GP recommends
If lung cancer is detected early, what is the person's chance of surviving?		
Good	1.00	1.00
Fair/poor	**0.50** (0.33-0.76)	**0.30** (0.14-0.63)
If the screening test found you had early stage lung cancer, would you want to have the recommended surgery?		
Yes, definitely/probably	1.00	1.00
Definitely/probably not	**0.13** (0.07-0.22)	**0.04** (0.02-0.08)

Discussion and implications

- National screening programme would be welcome
- Implications for screening communication:
  - Improve perceptions of curability of early stage disease
  - Address concerns about surgical treatment
  - Mindful of anxiety and stigma

- Methodological limitations:
  - Intention ≠ action, cross-sectional, single item measures

- Future research on effective communication with high risk:
  - Difficulties communicating risk, uncertainty, overdiagnosis
  - Informed decision-making approach

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