

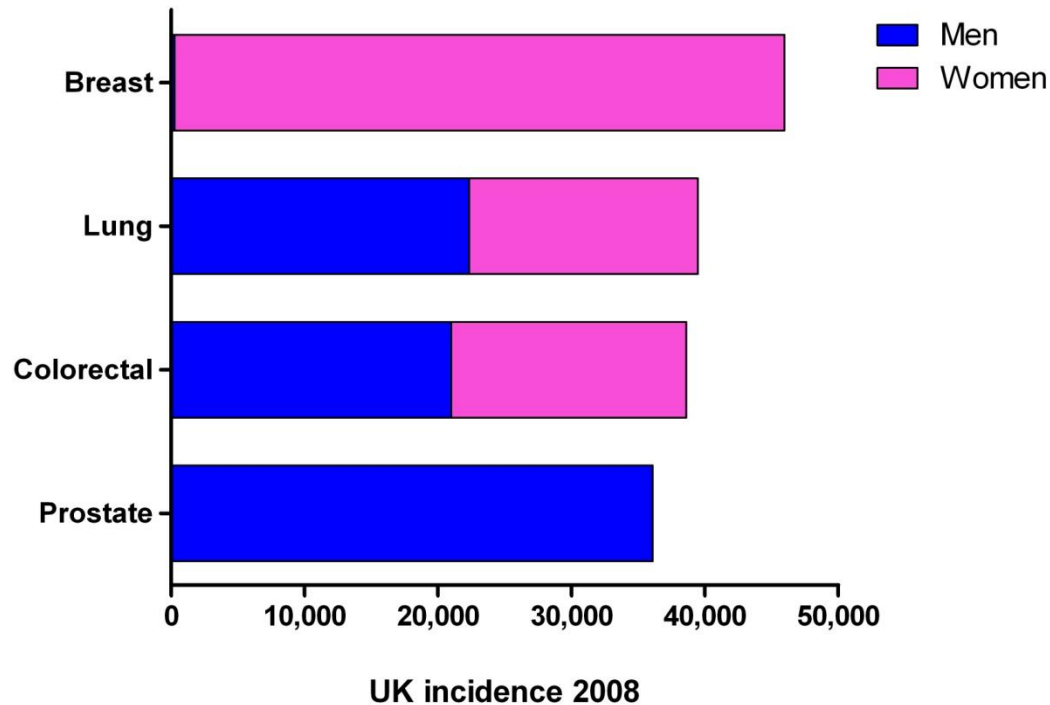
# Increasing early detection of lung cancer in Leeds

Mat Callister

Consultant Respiratory Physician  
Leeds Teaching Hospitals NHS Trust

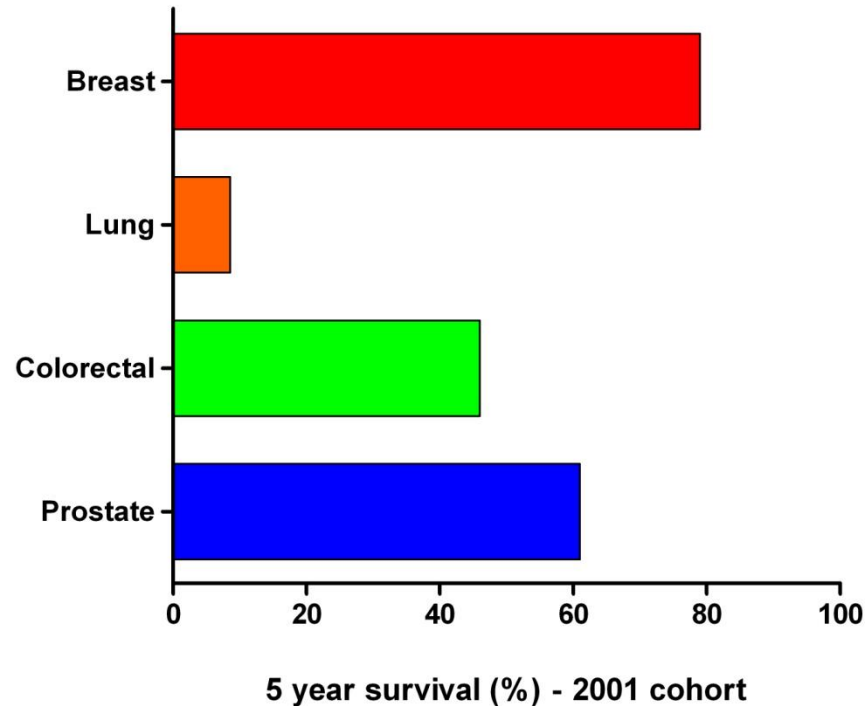
On behalf of Leeds Lung Cancer Early Diagnosis  
Project Steering Group

# UK cancer statistics



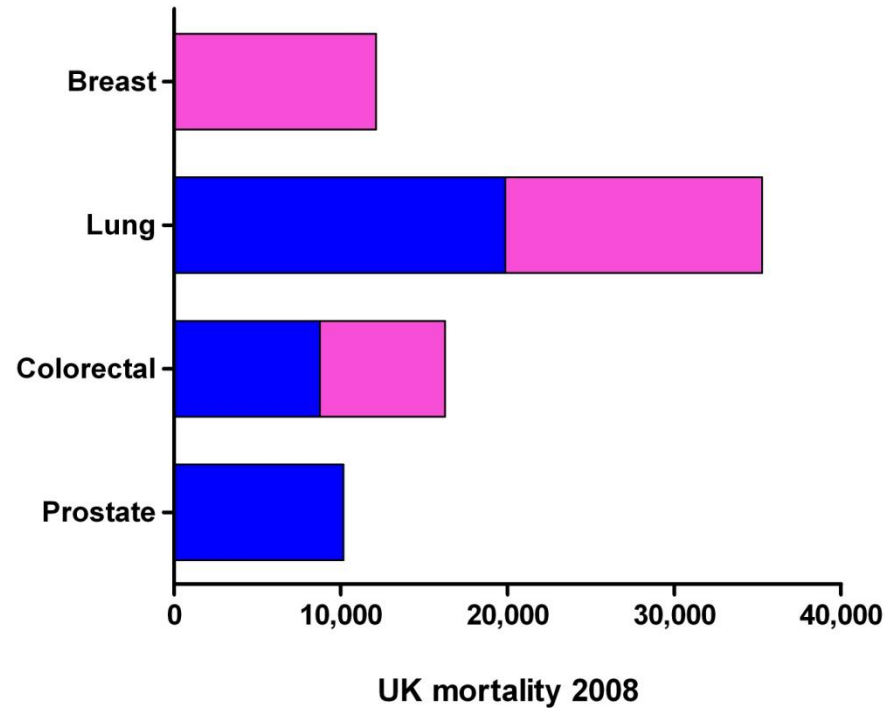
Cancer Research UK 2010 (taken from ONS England, ISD Scotland, Welsh Cancer Intelligence and Surveillance, Northern Ireland Cancer Registry)

# UK cancer statistics



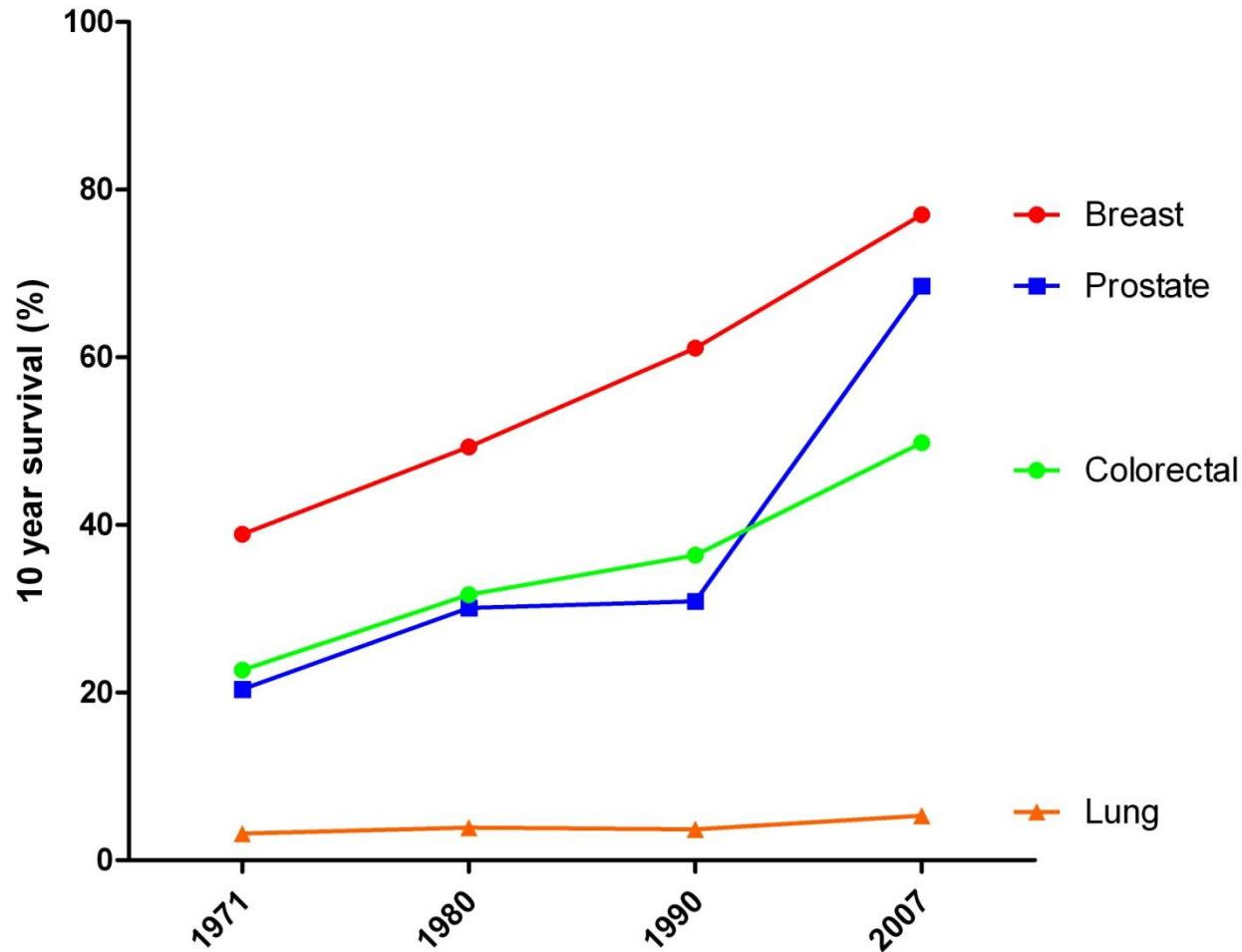
Cancer Research UK 2010 (taken from ONS England, ISD Scotland, Welsh Cancer Intelligence and Surveillance, Northern Ireland Cancer Registry)

# UK cancer statistics

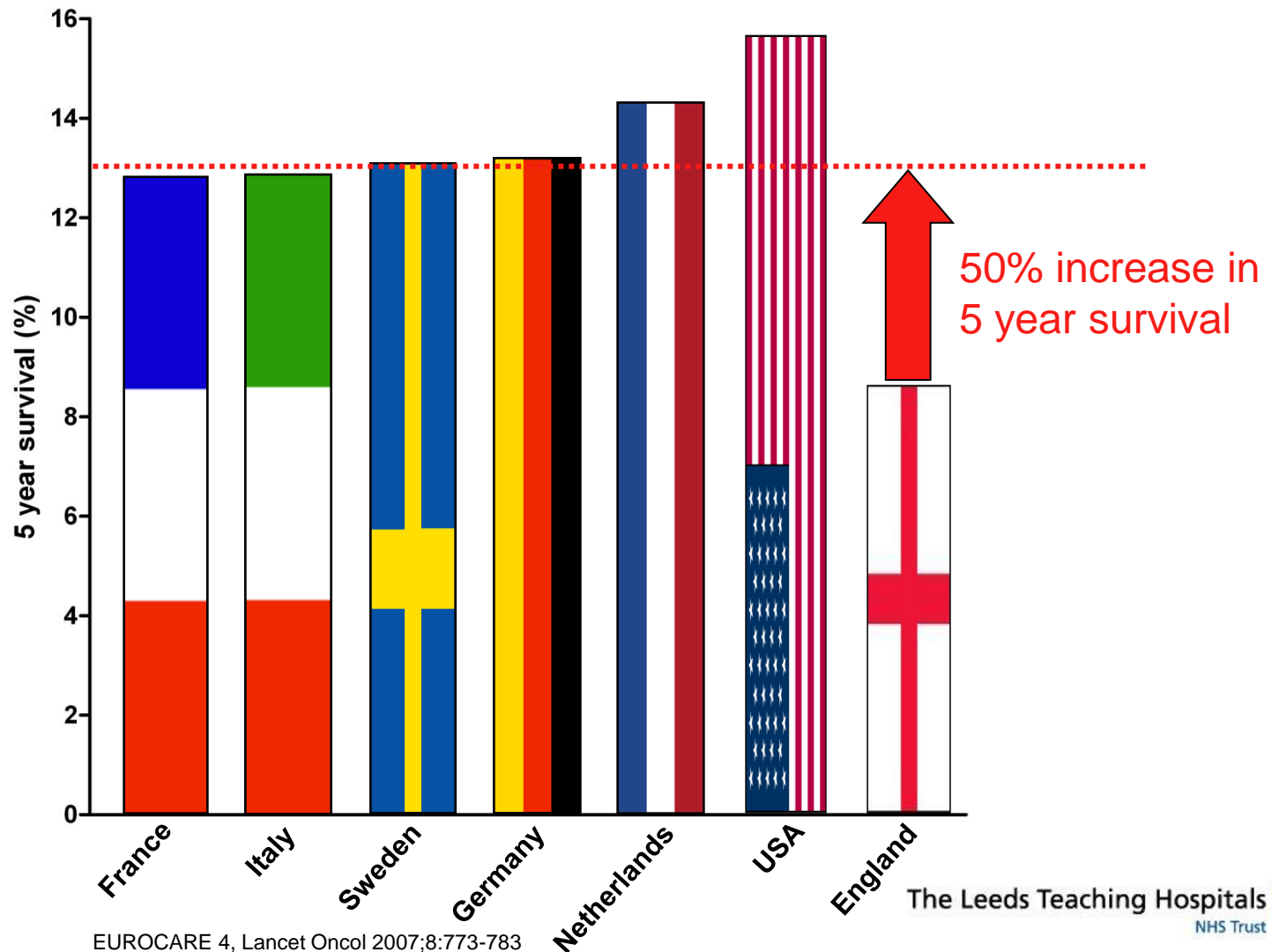


Cancer Research UK 2010 (taken from ONS England, ISD Scotland, Welsh Cancer Intelligence and Surveillance, Northern Ireland Cancer Registry)

# Changes in UK cancer survival 1971-2007

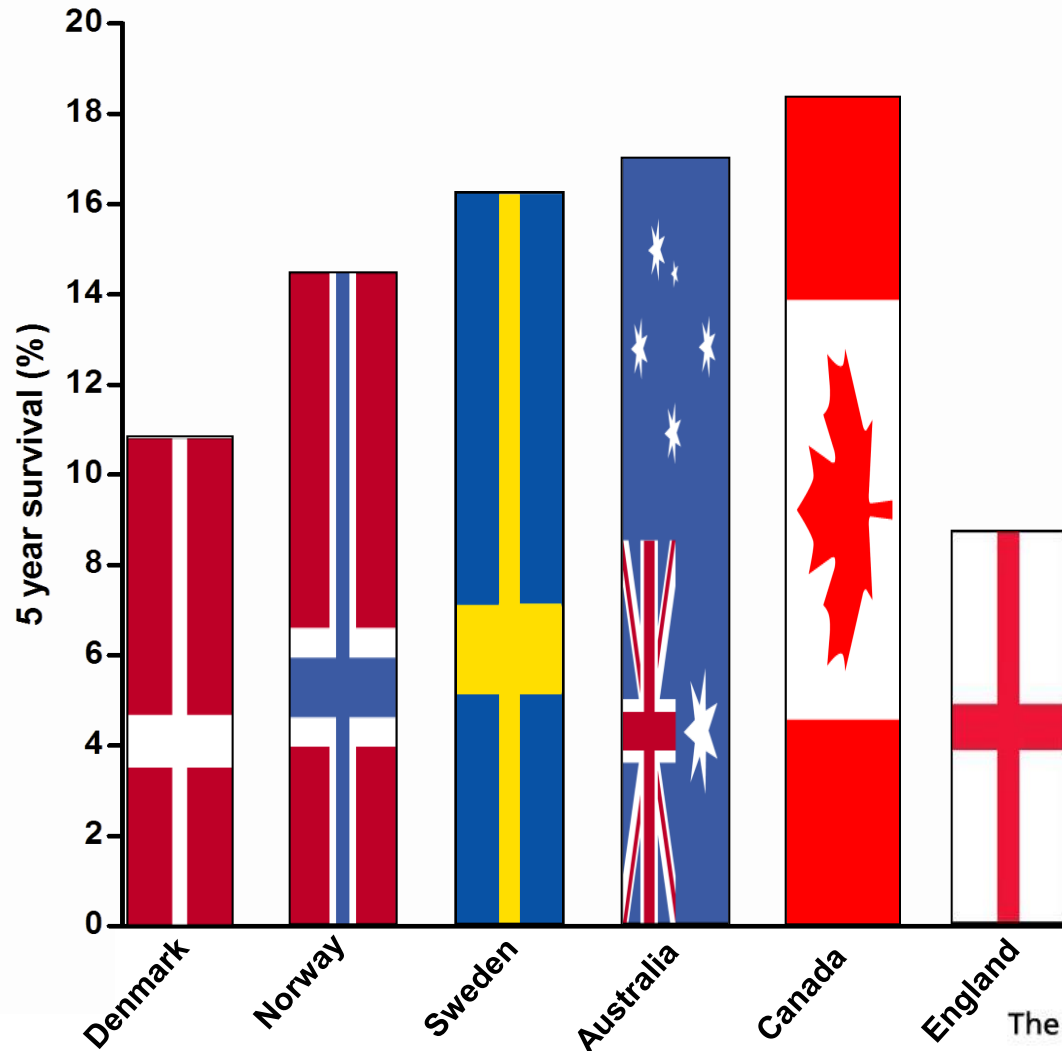


# 5 year survival by country EUROCARE 1995-1999



# 5 year survival by country

## ICBP 1995-2007



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# MailOnline

## Our cancer shame: Survival rates in UK are the worst among leading nations

By [JENNY HOPE](#)

Last updated at 11:39 AM on 22nd December 2010

 [Comments \(52\)](#) |  [Add to My Stories](#)

The chances of surviving cancer in the UK are the poorest among leading Western nations, says a damning study.

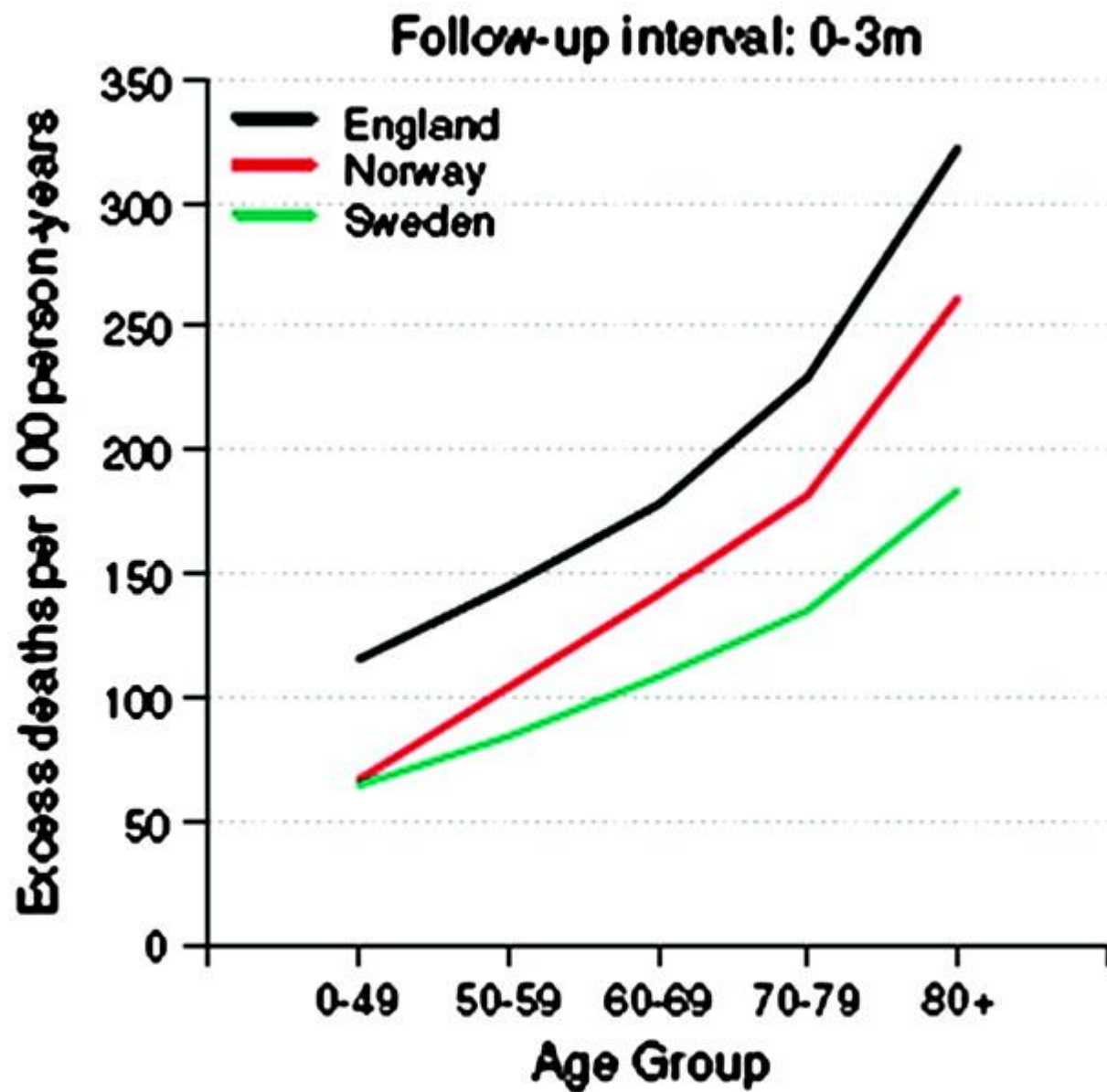


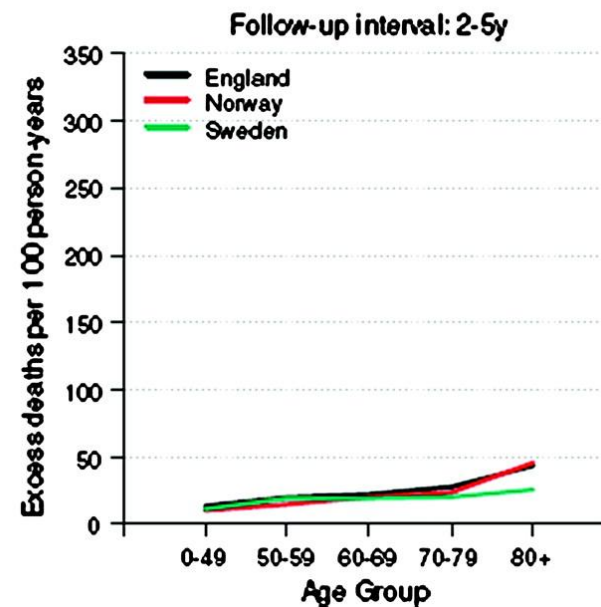
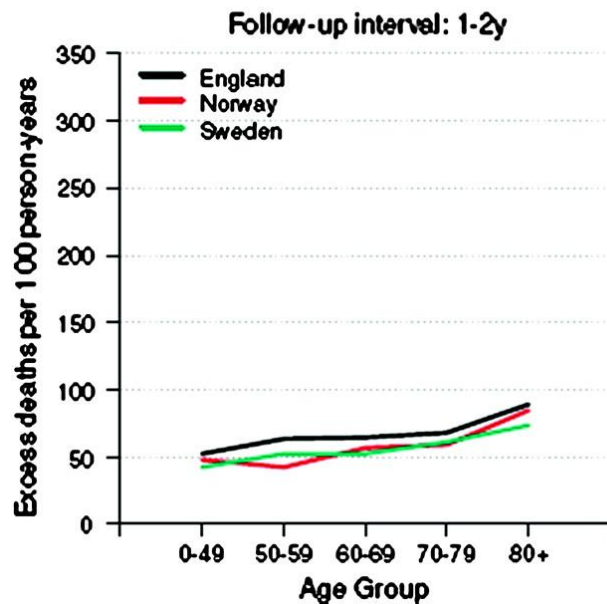
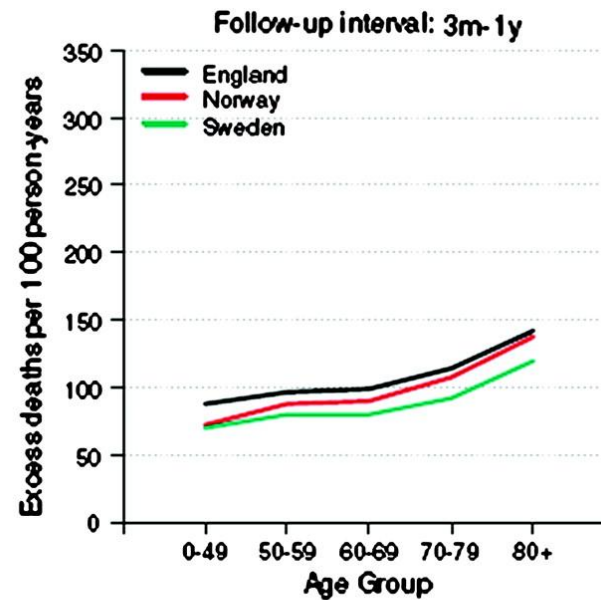
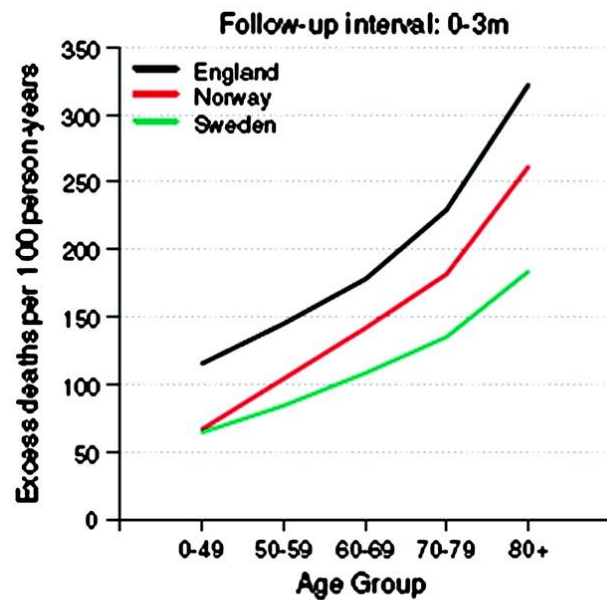
Lung cancer



## National comparisons of lung cancer survival in England, Norway and Sweden 2001–2004: differences occur early in follow-up

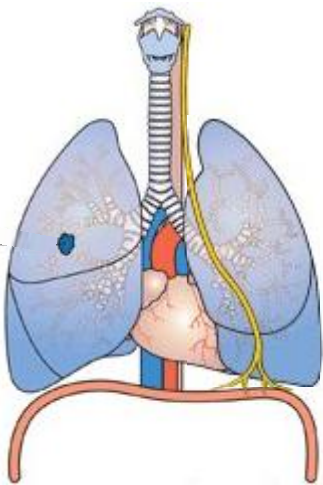
Lars Holmberg,<sup>1</sup> Fredrik Sandin,<sup>2</sup> Freddie Bray,<sup>4</sup> Mike Richards,<sup>5</sup> James Spicer,<sup>1</sup>  
Mats Lambe,<sup>3</sup> Åsa Klint,<sup>6</sup> Mick Peake,<sup>7</sup> Trond-Eirik Strand,<sup>4</sup> Karen Linklater,<sup>1</sup>  
David Robinson,<sup>1</sup> Henrik Møller<sup>1</sup>



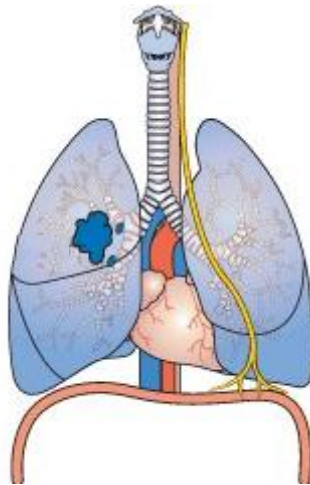


# Lung cancer staging

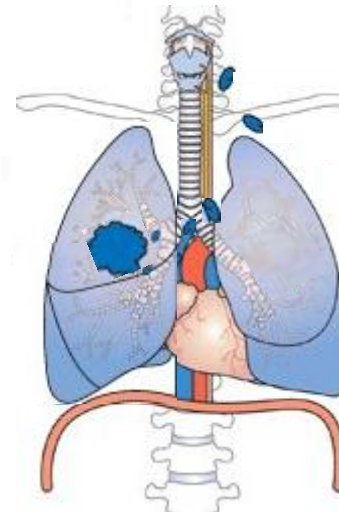
Stage I



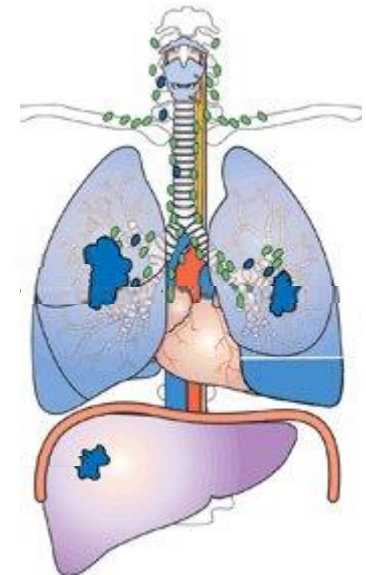
Stage II



Stage III

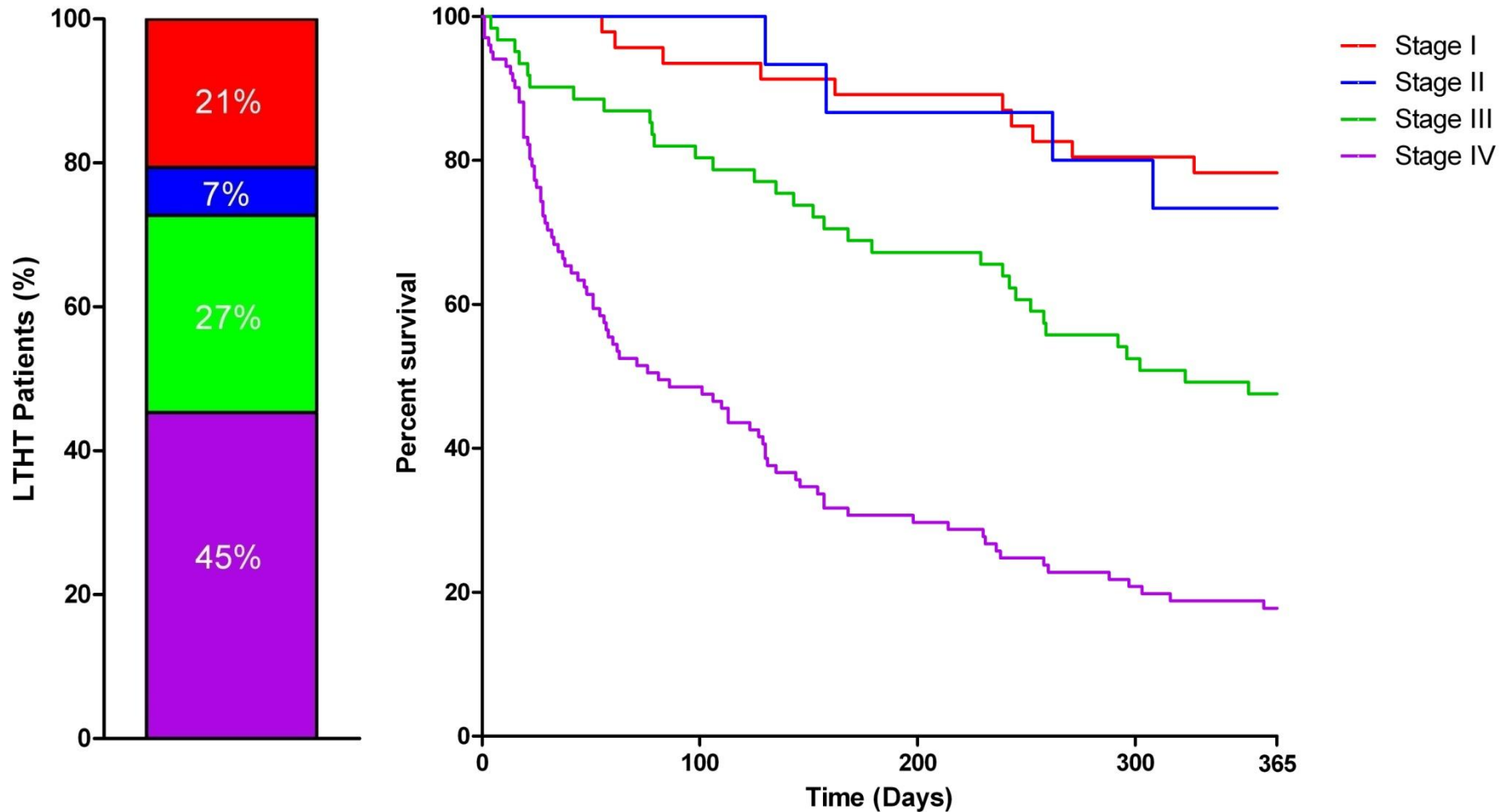


Stage IV

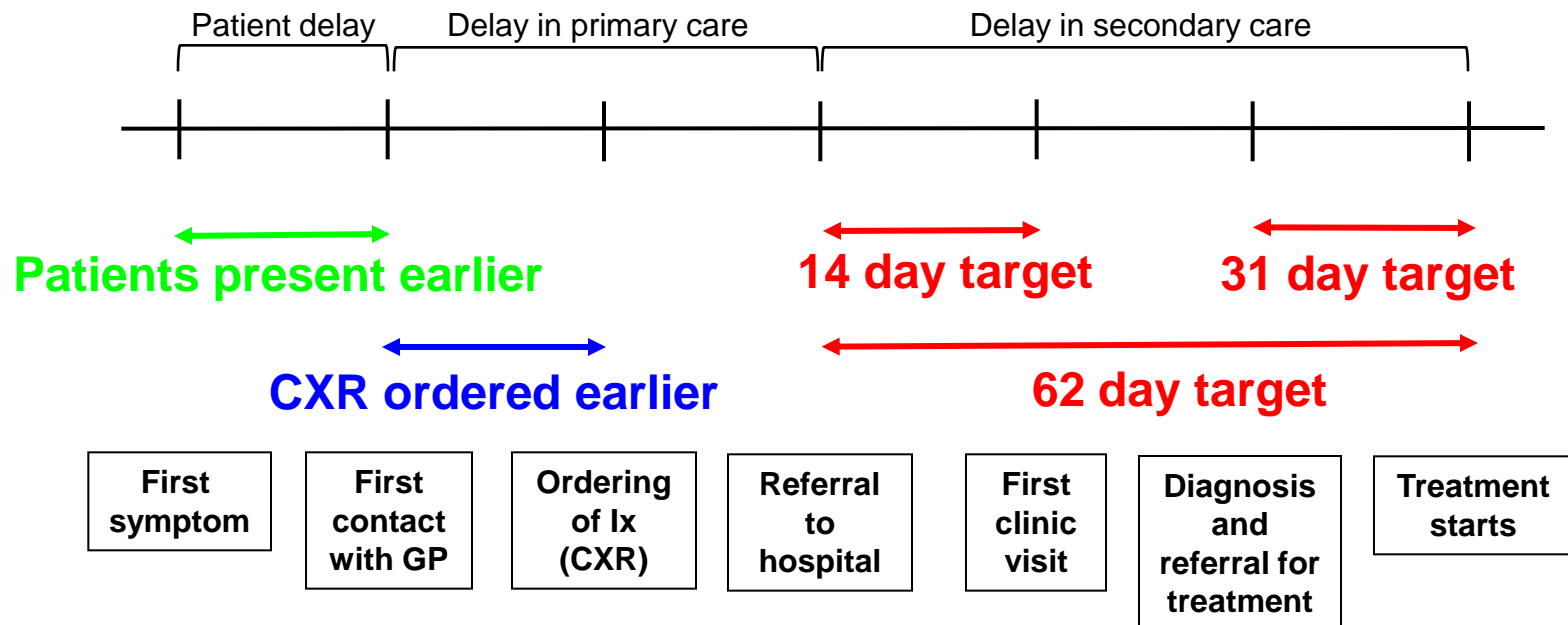


© Copyright CancerHelp UK

# Lung cancer survival by stage

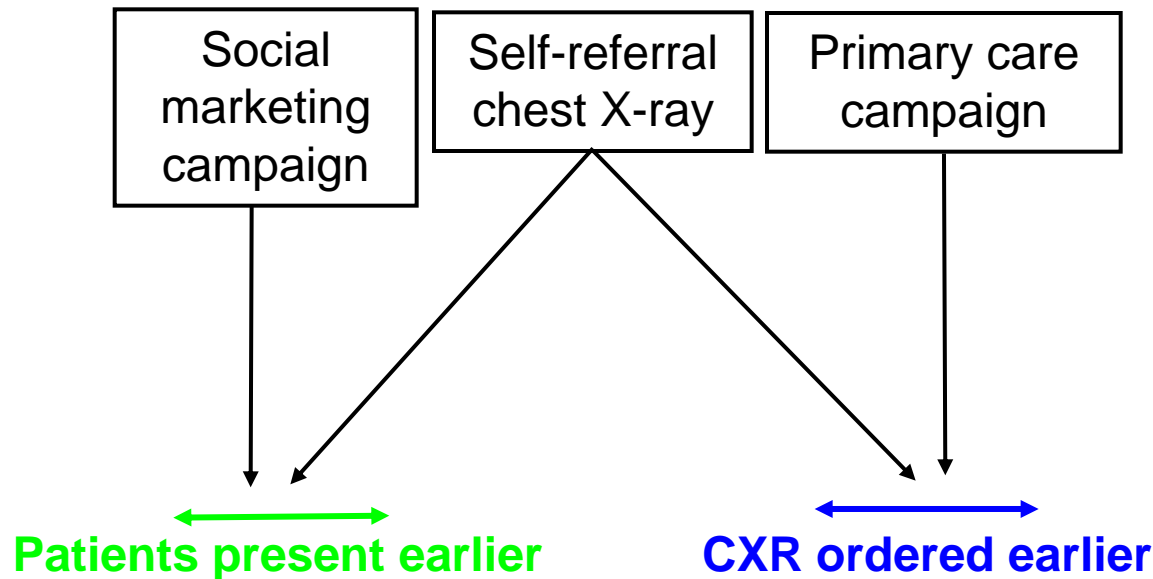


# Delays in cancer treatment

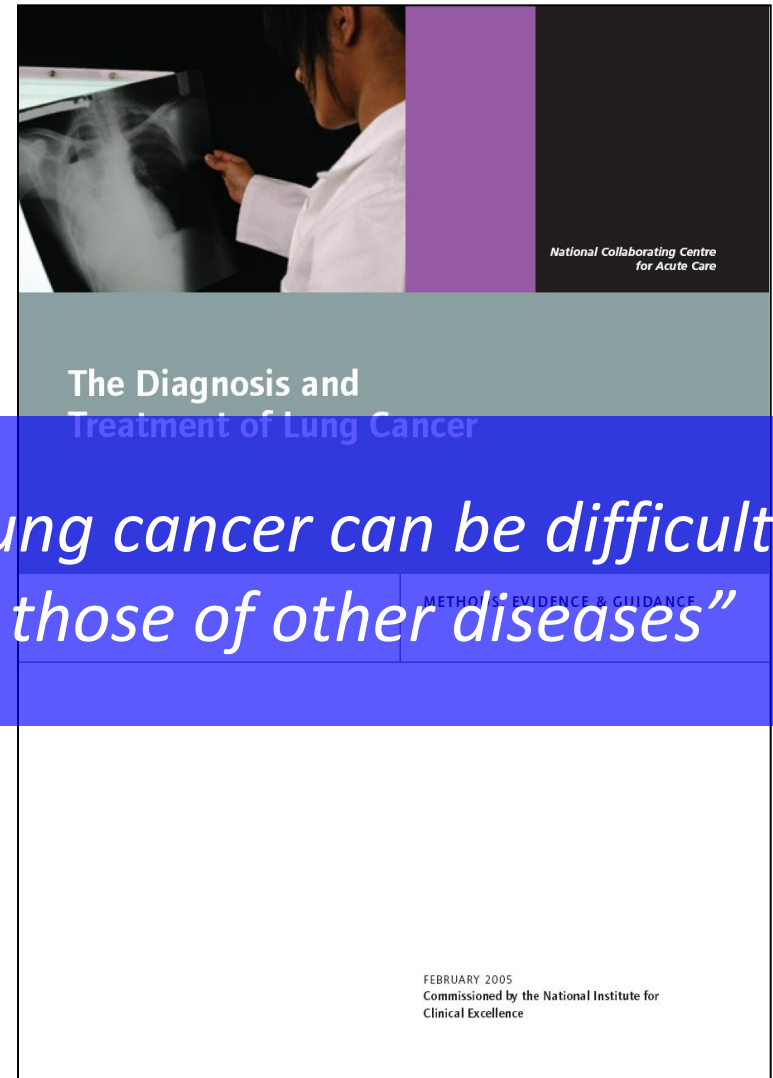


Olesen et al. BJC 2009;101:S5-S8

# Leeds Early Lung Cancer Project



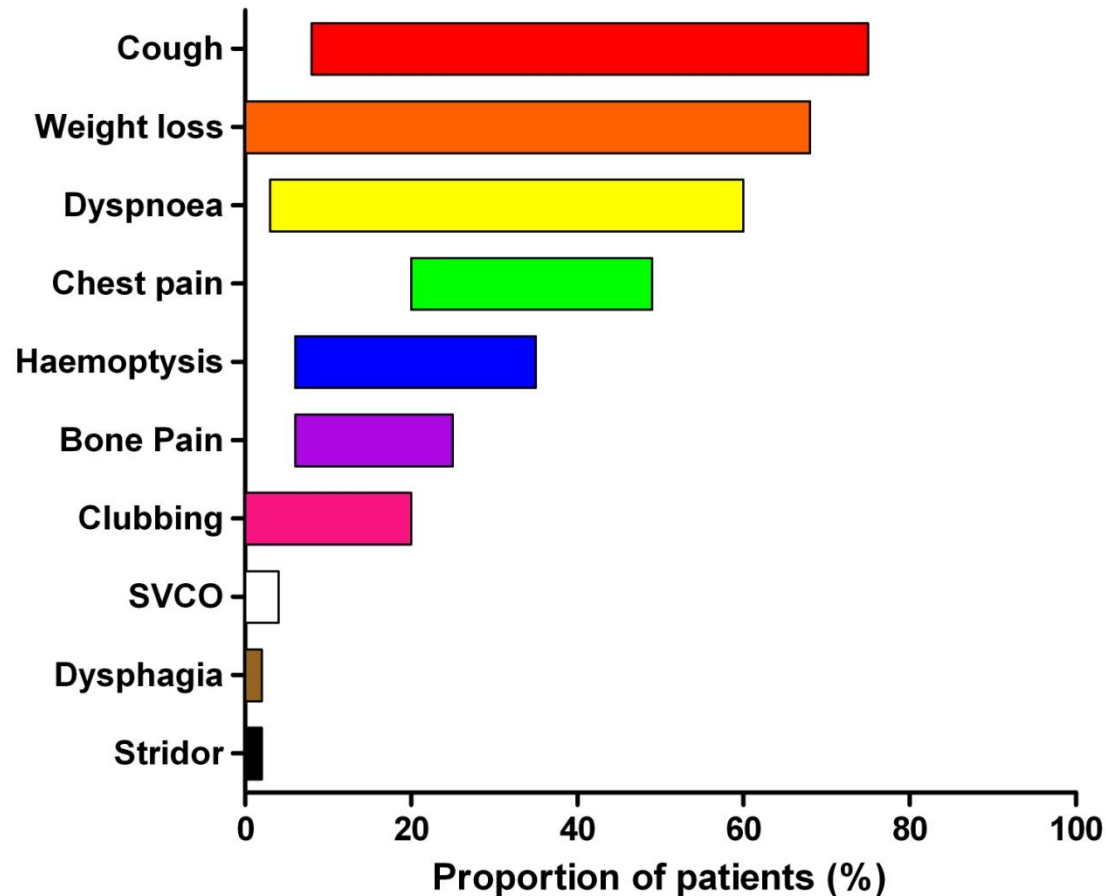
## Referral Guidelines for Suspected Cancer



*“The symptoms and signs of lung cancer can be difficult  
for GPs to distinguish from those of other diseases”*



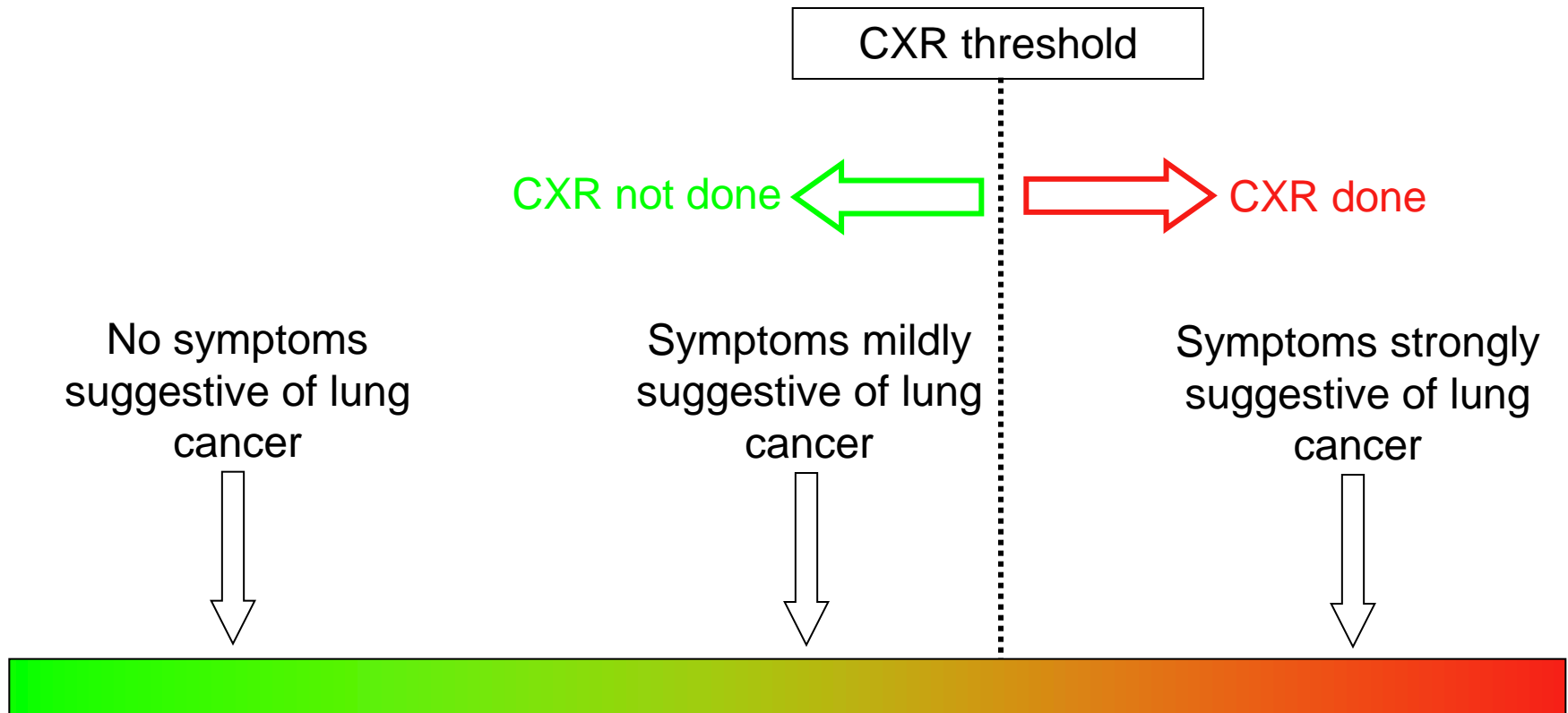
# Key symptoms and signs of lung cancer



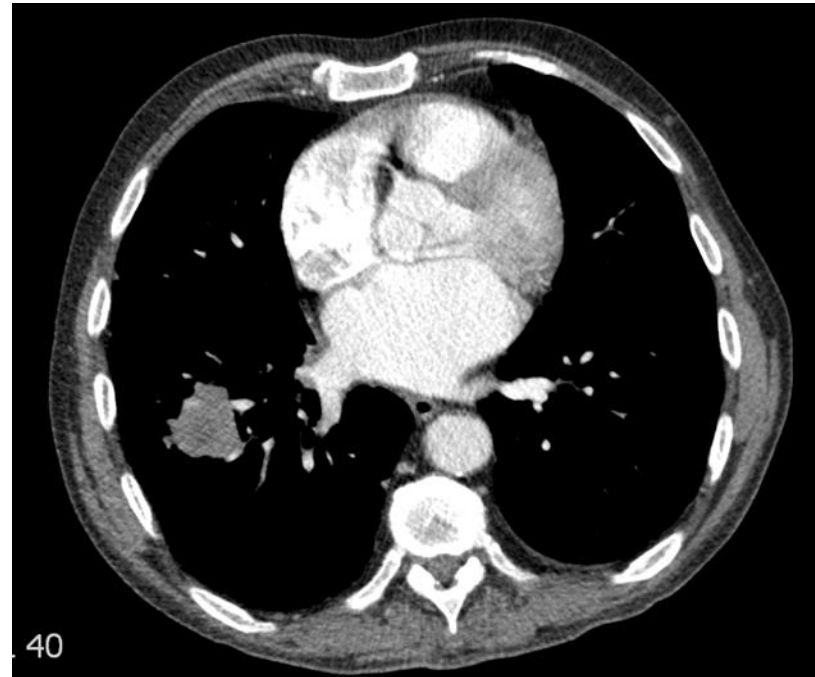
# Indications for urgent CXR – DH/NICE

- Haemoptysis
- Unexplained or persistent – for three weeks or more
  - Cough
  - Breathlessness
  - Chest/shoulder pain
  - Weight loss
  - Chest signs
  - Hoarseness
  - Clubbing

# Spectrum of lung cancer symptoms



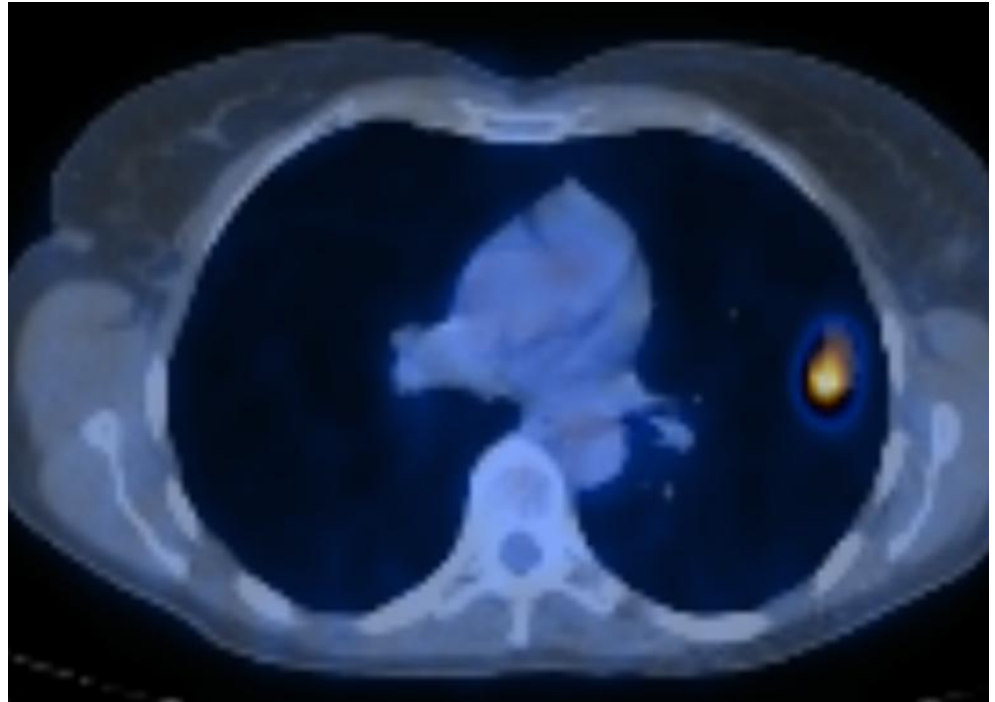
Mr CW  
79 year old man  
Smoker (105 pack years)  
Returned from cruise 05.01.09  
Since then daily haemoptysis  
1 stone weight loss over 1/12  
3/52 increasing breathlessness  
GP consultation 14.01.09



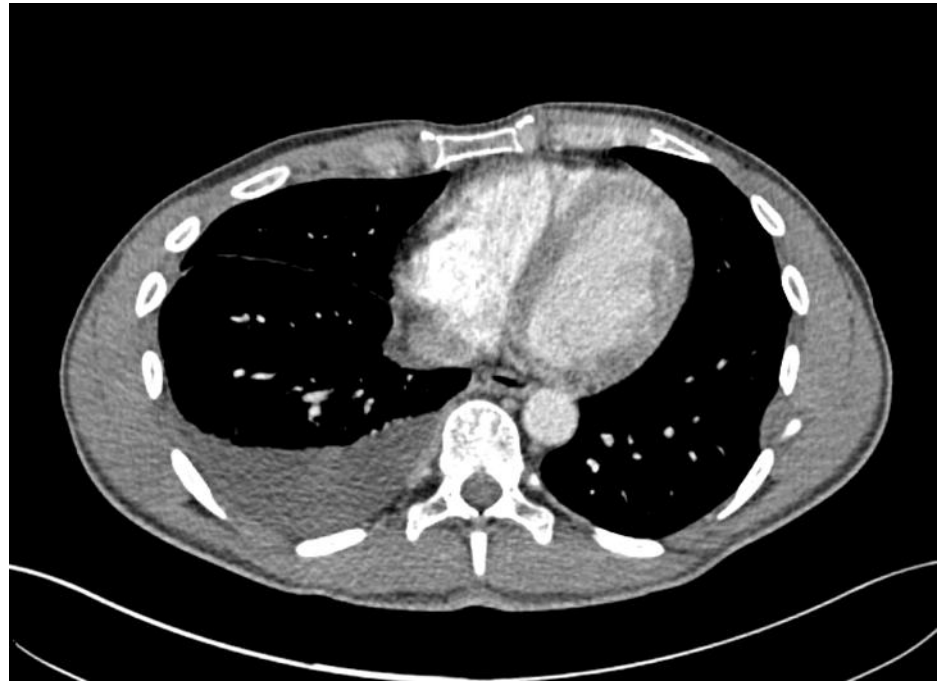
Mr DA  
68 yr old man  
Smoker (45 pack years)  
No respiratory symptoms  
Borderline hypertension  
Attends surgery for BP check



Mrs JB  
55 yr old woman  
Never smoker  
A-level teacher  
3/52 persistent dry cough  
No other concerning symptoms  
Consulted GP 09.10.08



Dr MC  
37yr old man  
Healthcare professional  
Never smoker  
6/52 non-productive cough  
No other concerning symptoms



Mr DA  
Normal CXR  
(Screening – no symptoms)



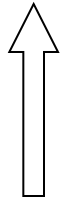
Mrs JB  
T1N1M0  
Adenocarcinoma



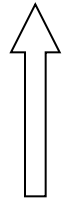
Dr MC  
Pleural TB



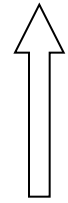
Mr CW  
T3N3M1b  
Small Cell Lung Cancer



No symptoms  
suggestive  
of lung cancer



Symptoms mildly  
suggestive  
of lung cancer



Symptoms strongly  
suggestive  
of lung cancer



CXR threshold

CXR not done ← → CXR done

Mrs JB  
T1N1M0  
Adenocarcinoma

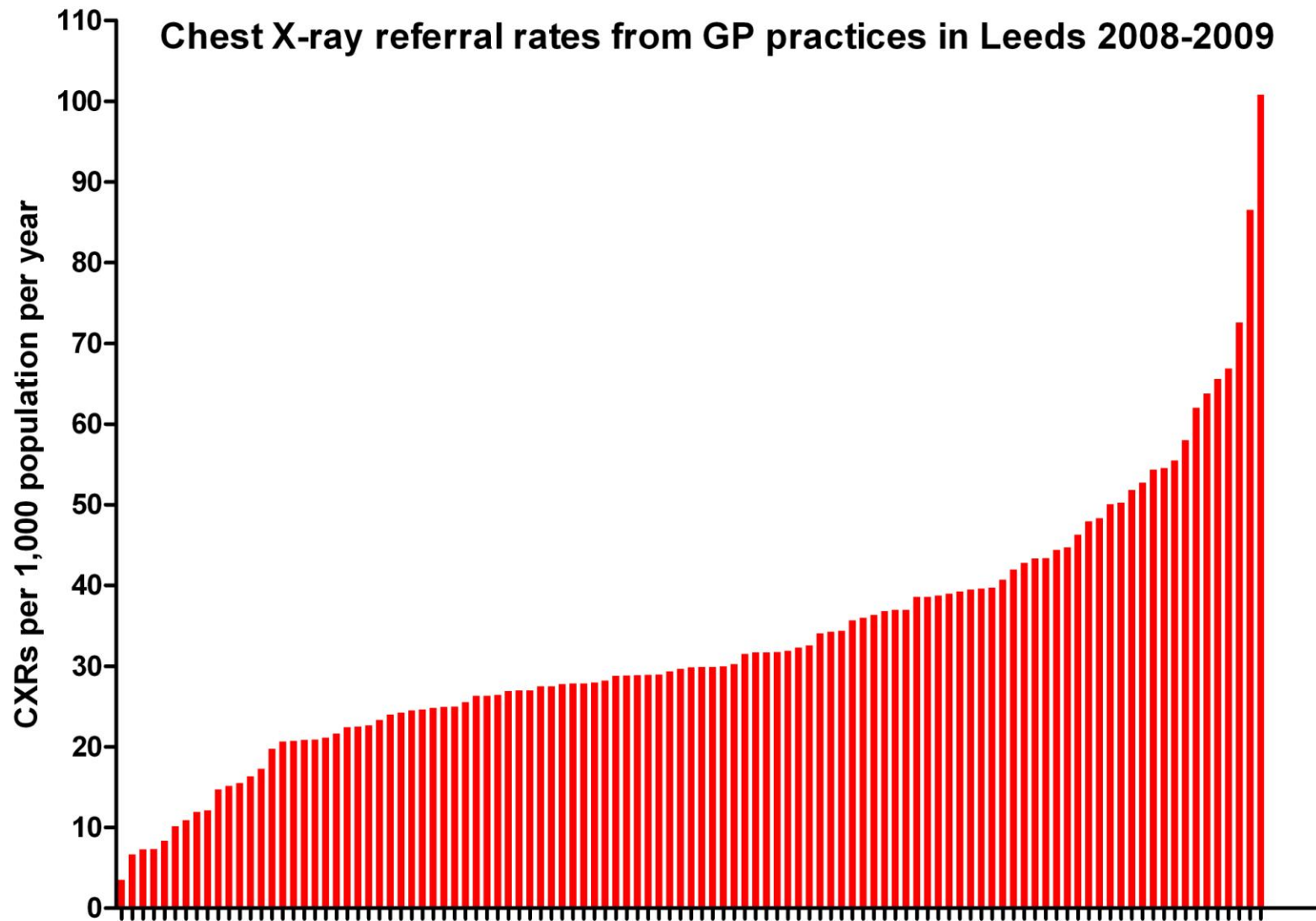


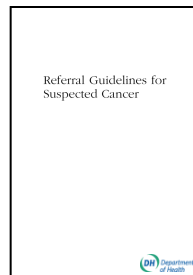
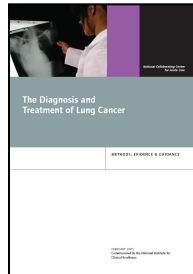
↑  
No symptoms  
suggestive  
of lung cancer

↑  
Symptoms mildly  
suggestive  
of lung cancer

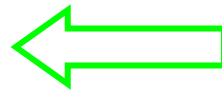
↑  
Symptoms strongly  
suggestive  
of lung cancer

**Chest X-ray referral rates from GP practices in Leeds 2008-2009**



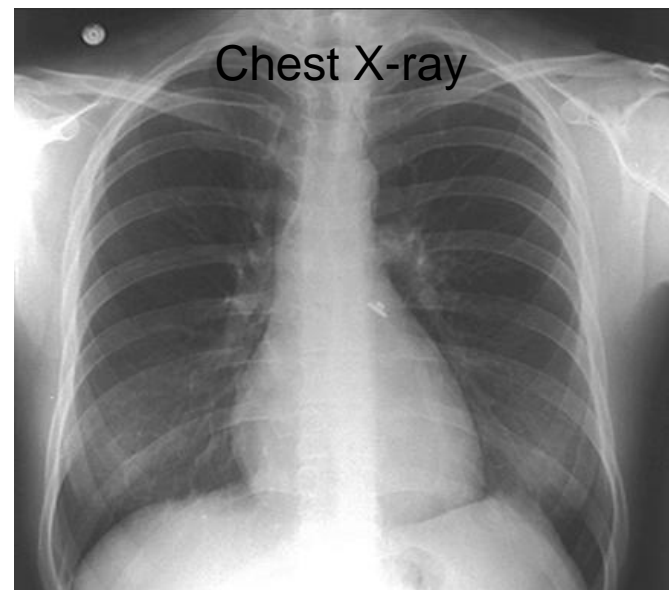
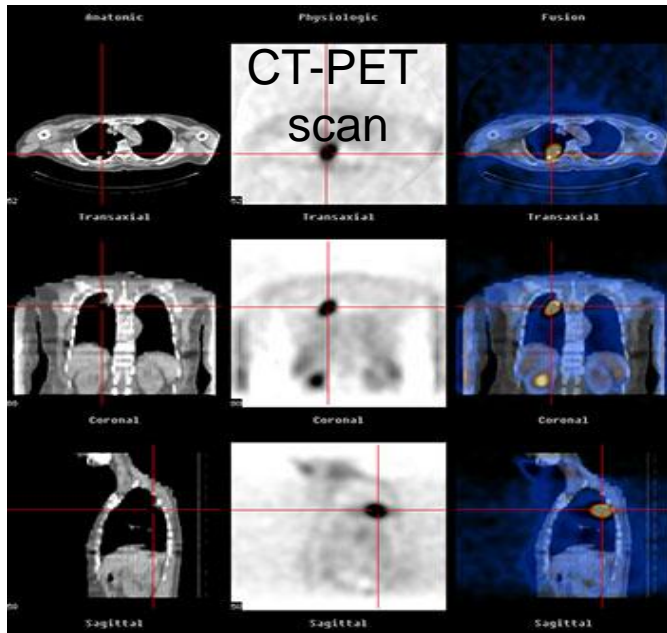


CXR threshold



# Radiation exposure from a chest X-ray









# Cost of a chest X-ray



## Cost of 1 course of Gefitinib for metastatic lung cancer



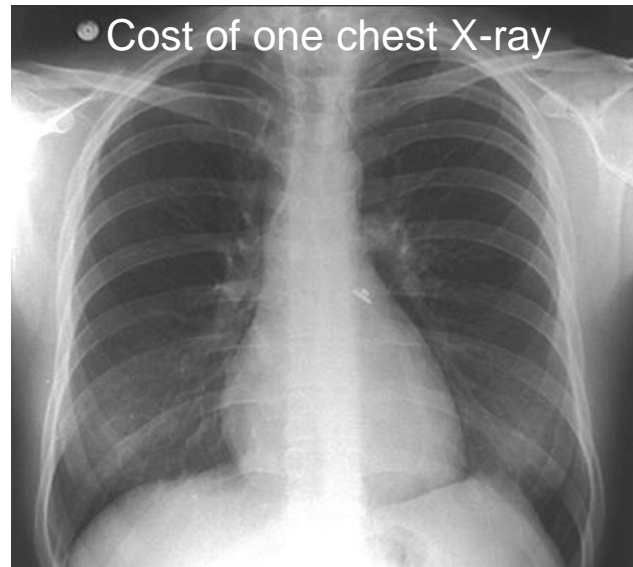
## Cost of Pemetrexed for lung cancer per QALY



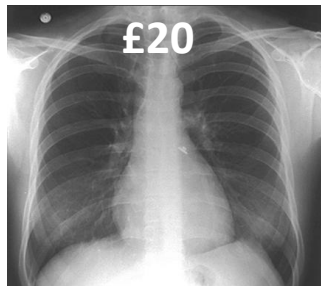
## Cost of Seretide 250 evohaler for 1 year



## Cost of one chest X-ray







£10

£100

£1,000

£10,000

£100,000

# Capacity of local hospital for chest X-rays





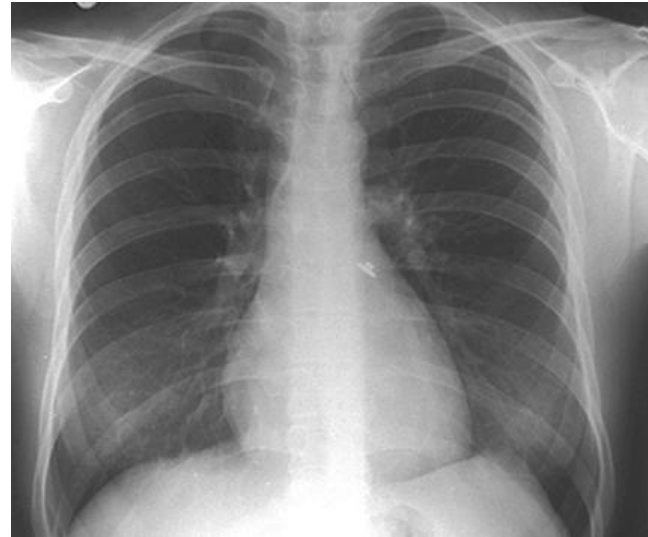


Leeds Teaching Hospitals  
has 25 X-ray machines

One X-ray machine (in  
Leeds Chest Clinic) can  
process 70 patients/day

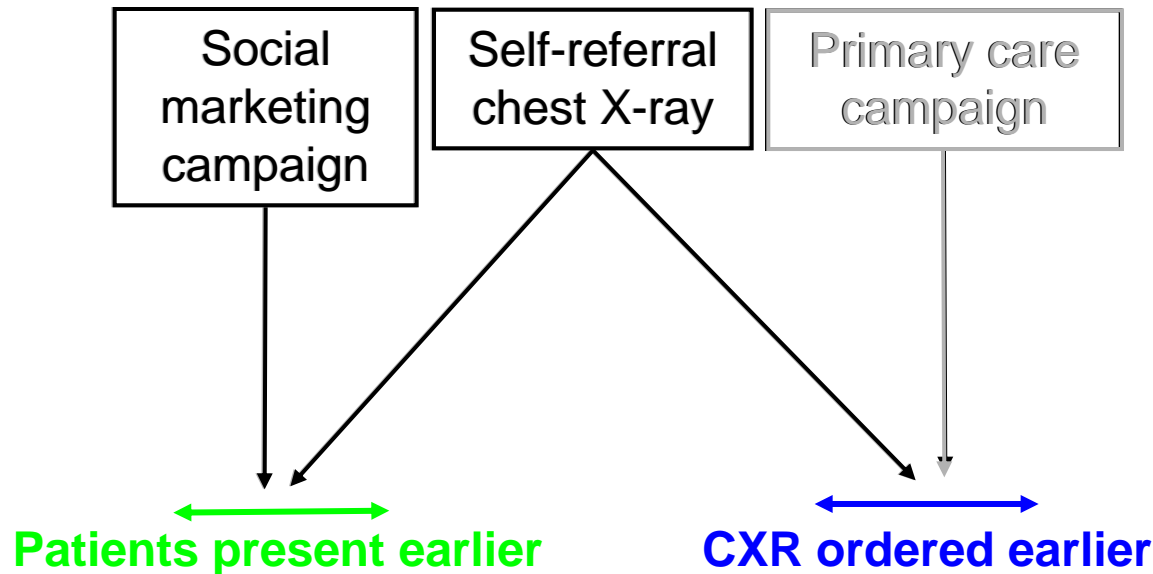


# Antibiotics vs Chest X-ray

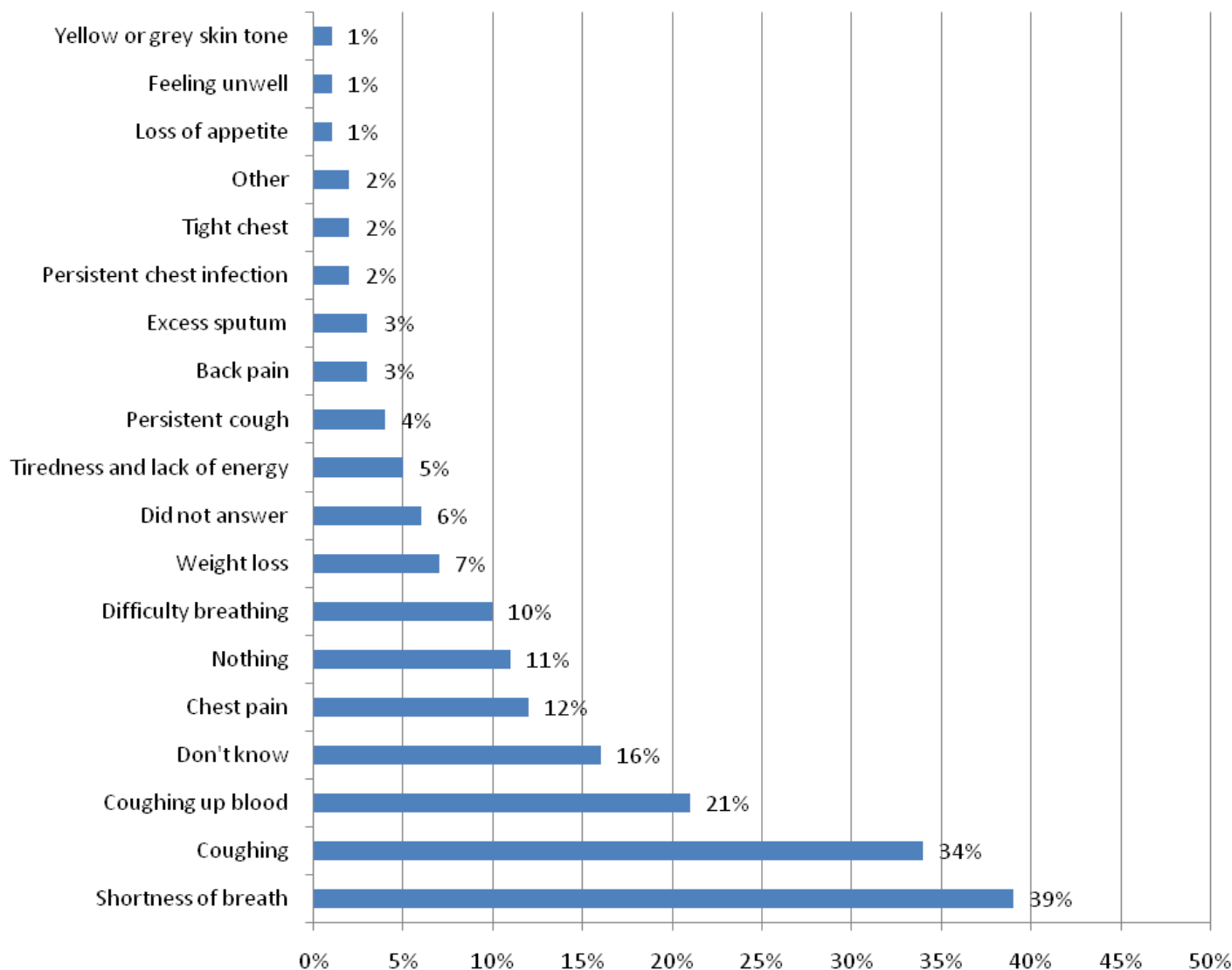


- DH/NICE guidelines suggest CXR for 3/52 of chest symptoms - no reference to antibiotic prescription
- No evidence to support delaying CXR until after 1 or 2 (or more) courses of antibiotics

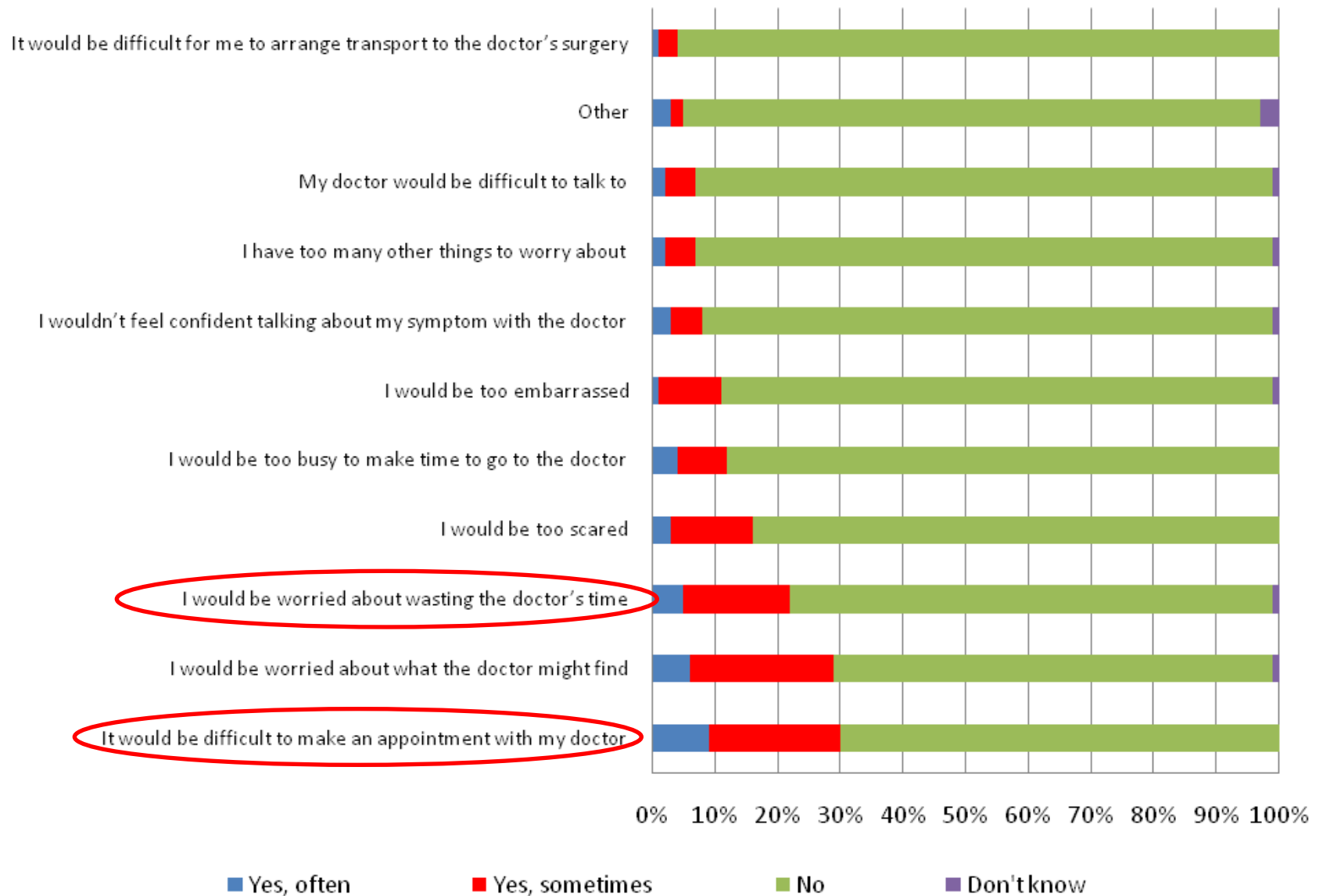
# Leeds Early Lung Cancer Project



## Perception of Warning Signs of Lung Cancer (unprompted)



## Reasons for Not Reporting Symptoms of Lung Cancer



# Self-referral chest X-ray

*“A new and innovative intervention?”*



N.E. METROPOLITAN REGIONAL HOSPITAL BOARD

---

REGULAR  
**MASS X-RAY**  
SERVICE

at the  
**OLD DRILL HALL**

[East Herts College Annex]

CROSSBROOK STREET  
**CHESHUNT**

**EACH FRIDAY**

From 10 a.m. to 2 p.m.

[HOLIDAYS EXCEPTED]

---

OPEN TO ALL OVER 14 YEARS OF AGE

No Appointment Necessary

**No Undressing : Free : Confidential**

If you do not hear from us you will know that your X-ray is satisfactory

ANY ENQUIRIES TO 01-520 2312



# Self-referral chest X-ray

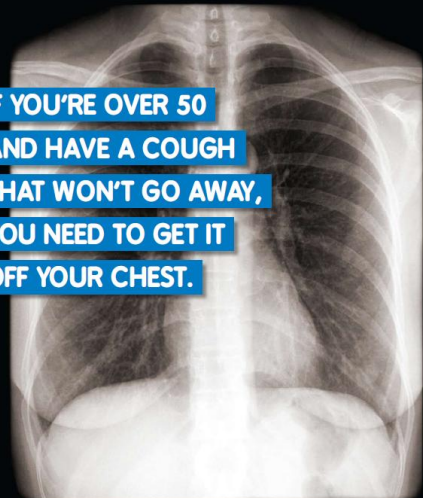
- Patients complete tick-box questionnaire
- Criteria
  - Age > 50yrs
  - Cough or other respiratory symptoms > 3/52
  - No previous CXR on system in previous 3/12
- Reports sent to GP – automatically recalled for CT then chest clinic if suspicious for cancer
- REC, IR(ME)R, R&D, NIHR CSP approved

# Social marketing campaign

***If you have cough or other chest symptom for 3 weeks,  
you need a chest X-ray to rule out serious lung disease***

- Community health educators
- Bus routes through target area
- Media events
- Beer mats/flyers/posters
- Pharmacy bags

**NHS  
Leeds**



**IF YOU'RE OVER 50  
AND HAVE A COUGH  
THAT WON'T GO AWAY,  
YOU NEED TO GET IT  
OFF YOUR CHEST.**

A persistent cough could be the first signs of a more serious health problem that could be easily treated if caught early. If you have a cough for over three weeks, speak to your GP or call 0800 123 456 to book yourself in for a chest x-ray.

**NHS  
Leeds**




**If you're over 50 **COUGH**  
and have a cough  
that **COUGH** won't go away,  
ask your GP **COUGH**  
for a check-up.**

A persistent cough could be the first signs of a more serious health condition.

If you've had a cough for more than three weeks, speak to your GP or call **0800 123 456** to book a simple chest examination.



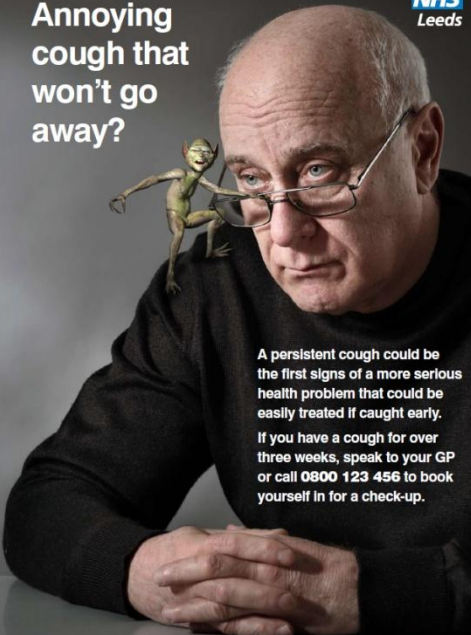
**NHS  
Leeds**



**If you're over 50, a persistent cough might be the first sign of a health problem that could be easily treated if caught early. If you have a cough for over three weeks, speak to your GP or call 0800 123 456 to book yourself in for a check-up.**

**NHS  
Leeds**

**Annoying  
cough that  
won't go  
away?**

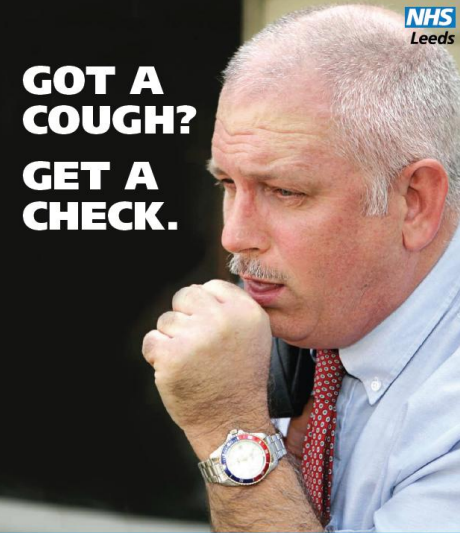


A persistent cough could be the first signs of a more serious health problem that could be easily treated if caught early.

If you have a cough for over three weeks, speak to your GP or call **0800 123 456** to book yourself in for a check-up.

**NHS  
Leeds**

**GOT A  
COUGH?  
GET A  
CHECK.**



If you're over 50 and have a cough for over three weeks, it could be the first signs of a more serious health problem.

The earlier your diagnosis, the better your chances of a full and speedy recovery. Don't delay, speak to your GP or call **0800 123 456** to book a health check.



A close-up photograph of a middle-aged man with grey hair and a mustache, wearing a light blue shirt and a red patterned tie. He is shown in profile, coughing into his right fist. He is also wearing a silver-toned wristwatch with a white face and a red and blue bezel. The background is dark and out of focus.

# **GOT A COUGH? GET A CHECK.**

If you're over 50 and have a cough for over three weeks, it could be the first signs of a more serious health problem. The earlier your diagnosis, the better your chances of a full and speedy recovery. Don't delay, speak to your GP or call **0800 123 456** to book a health check.

**GOT A  
COUGH?  
GET A  
CHECK.**

YJ09FWZ

69412

**If you have a cough for over three weeks,  
you need a chest x-ray.**

Ask your GP or, if you're over 50, visit us at Seacroft Hospital on York Road.  
Open Monday to Friday, 9.30am to 4.30pm – no appointment needed.

**NHS**  
Leeds



**GOT A  
COUGH?  
GET A  
CHECK.**

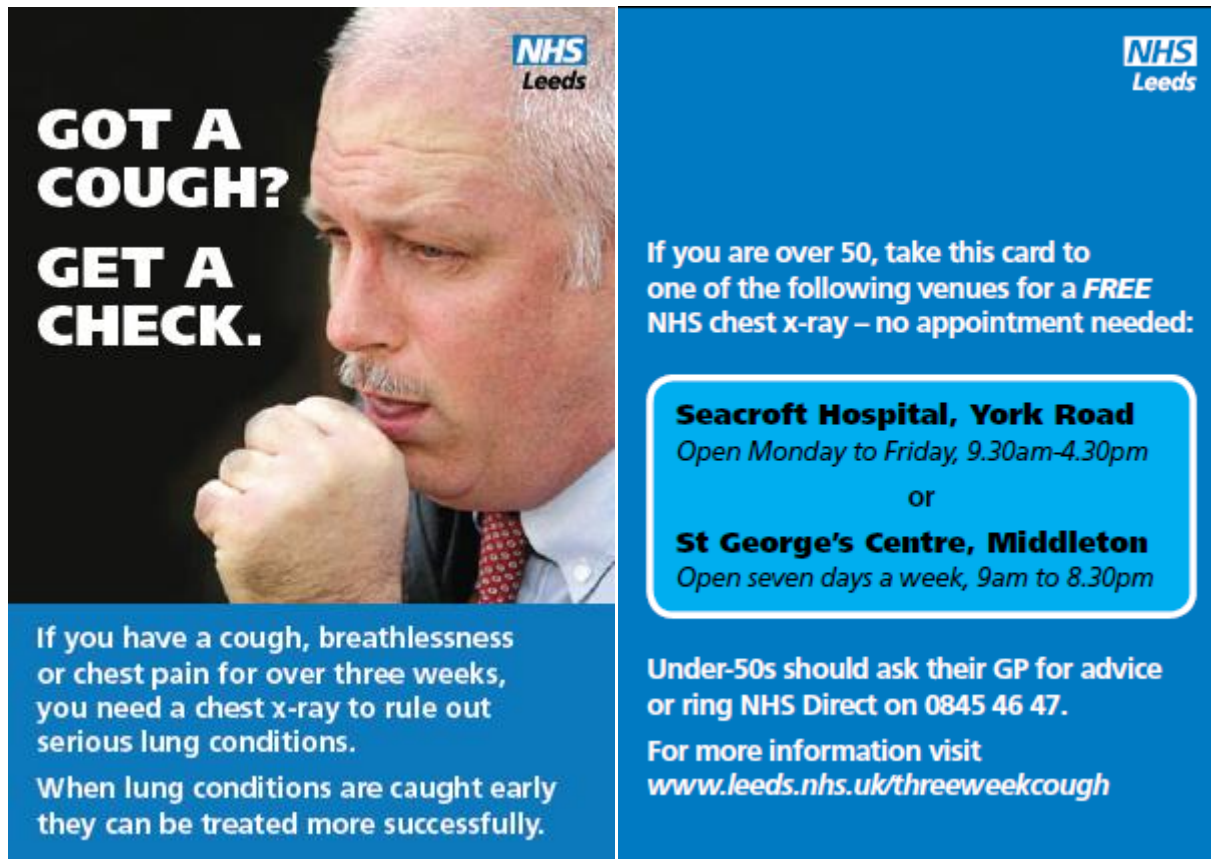
**YJ09 FWP**



**If you have a cough for over three weeks,  
you need a chest x-ray.**

Ask your GP or, if you're over 50, visit us at St George's Centre, Middleton.  
Open seven days a week, 9.00am to 8.30pm – no appointment needed.

**NHS**  
*Leeds*



The poster is divided into two main sections. The left section features a black and white photograph of an older man with a mustache, looking down with his hand to his chin as if coughing. To the left of the photo, the text 'GOT A COUGH? GET A CHECK.' is written in large, bold, white capital letters. Below the photo, on a blue background, is white text explaining the need for a chest x-ray and the benefits of early treatment. The right section has a solid blue background with white text. It includes the NHS Leeds logo at the top right, followed by instructions for those over 50 to take the card to specific venues for a free chest x-ray. A white rounded rectangle contains the names and opening hours of Seacroft Hospital and St George's Centre. Below this, it advises under-50s to consult their GP or NHS Direct, and provides a website for more information.

**GOT A COUGH?  
GET A CHECK.**

**NHS Leeds**

If you have a cough, breathlessness or chest pain for over three weeks, you need a chest x-ray to rule out serious lung conditions.

When lung conditions are caught early they can be treated more successfully.

**NHS Leeds**

If you are over 50, take this card to one of the following venues for a **FREE** NHS chest x-ray – no appointment needed:

**Seacroft Hospital, York Road**  
Open Monday to Friday, 9.30am-4.30pm  
or  
**St George's Centre, Middleton**  
Open seven days a week, 9am to 8.30pm

Under-50s should ask their GP for advice or ring NHS Direct on 0845 46 47.

For more information visit  
[www.leeds.nhs.uk/threeweekcough](http://www.leeds.nhs.uk/threeweekcough)

Practice nurses  
District nurses  
GPs  
Pharmacists

Community health educators  
Community respiratory nurses  
Smoking cessation counsellors  
Pass onto a friend or relative



# Leeds Early Lung Cancer Project

Primary care  
campaign



Self-referral  
chest X-ray

Social  
marketing  
campaign



# Outcome measures

- Primary outcome measure – number of CXRs per 1,000 population per year

	2009 (Run-in)	2010 (Run-in)	2011 (Campaign)
Inner East & Inner South Leeds	27.6		
Rest of Leeds	29.3		
Kirklees			
Wakefield			
Calderdale			



# Outcome measures

- Secondary outcome measure
  - Public awareness of symptoms of lung cancer (CAM) pre- vs post-campaign
  - Number of lung cancers diagnosed
  - Proportions of stage I and II cancers
  - Proportions receiving radical treatment (curative surgery or radical/stereotactic radiotherapy)
  - 1 year survival rates

# Outcome measures

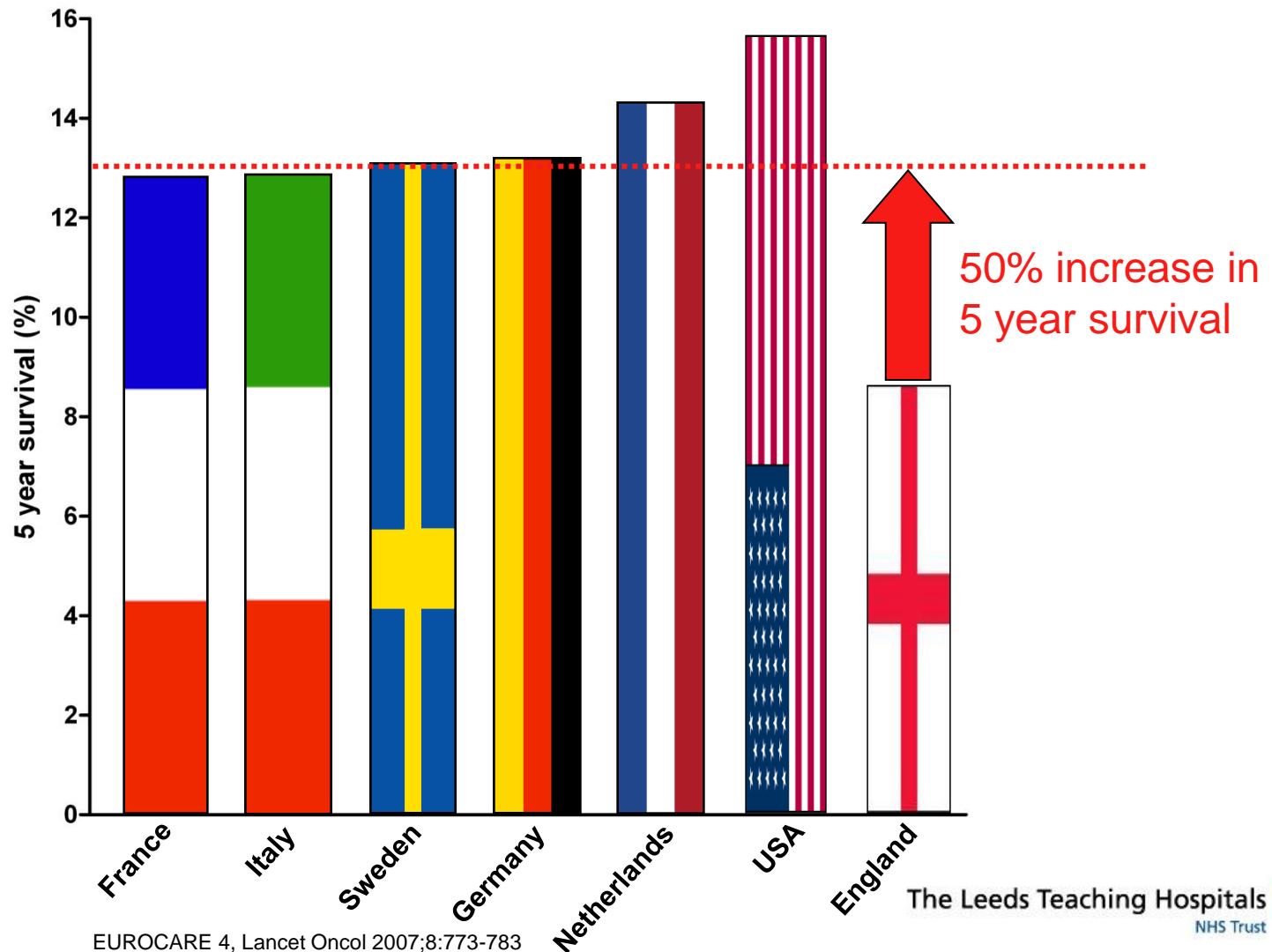
- Proportion of stage I/II lung cancers (%)

	2009 (Run-in)	2010 (Run-in)	2011 (Campaign)
Inner East & Inner South Leeds	22.9		
Rest of Leeds	29.4		
Mid-Yorkshire NHS Trust			
Calderdale & Huddersfield NHS Trust			
Yorkshire Cancer Network			
England and Wales (NLCA)			

# Summary

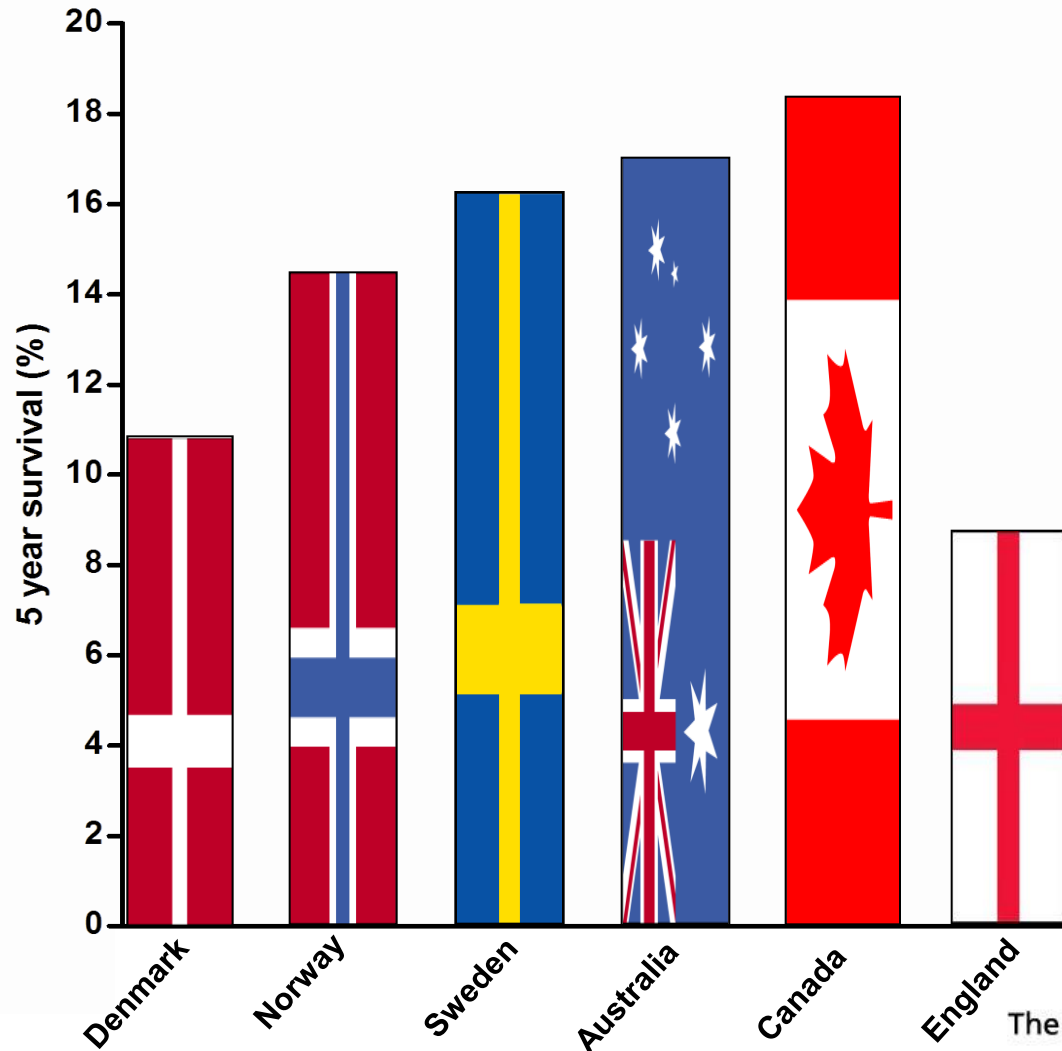


# 5 year survival by country EUROCARE 1995-1999



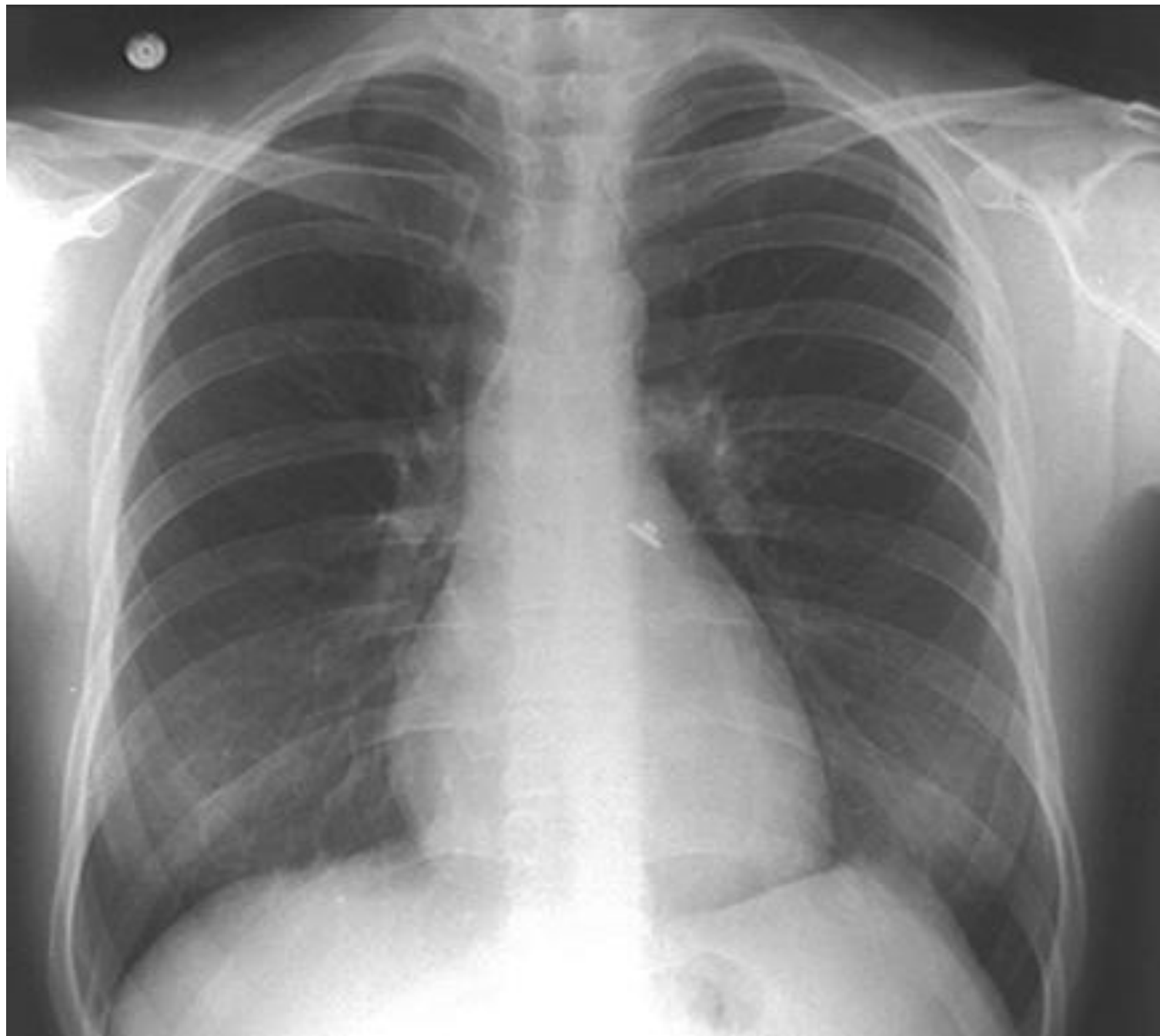
# 5 year survival by country

## ICBP 1995-2007



# Indications for urgent CXR – DH/NICE

- Haemoptysis
- Unexplained or persistent – for three weeks or more
  - Cough
  - Breathlessness
  - Chest/shoulder pain
  - Weight loss
  - Chest signs
  - Hoarseness
  - Clubbing

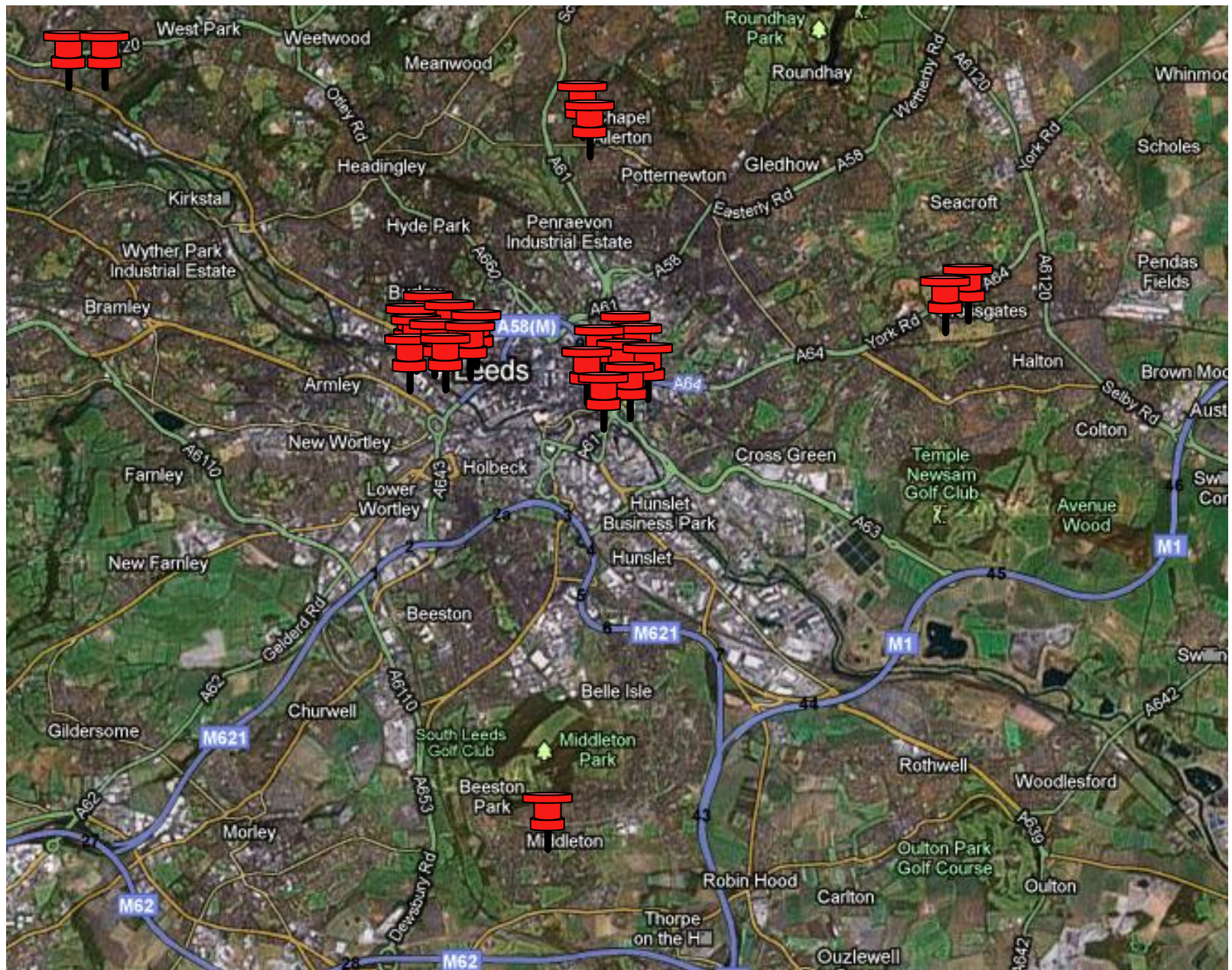














# Acknowledgements

## LTHT

Richard Milton  
Paul Plant  
Puneet Malhotra  
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Bobby Bhartia  
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Adrienne Byatt  
Chris Rhodes

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Amanda Boughey  
Sara Hiom

## NHS Leeds

Catherine Foster  
Veronica Lovett  
Fran Hewitt  
Jon Fear  
Dominic Pickering  
Norma Thompson  
Brenda Fullard

