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Programme of  
Action for  
Cancer  
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PACT



JOLANTA KWASNIEWSKA'S FOUNDATION  
Communication Without Barriers



# Why do we need global surveillance of cancer survival ?

**Michel Coleman**  
London School of Hygiene and Tropical Medicine, UK  
on behalf of the CONCORD Steering Committee



**World Cancer Congress**  
Montreal, Canada - 30 August 2012

# **Why surveillance of cancer survival ?**

- **Cancer control – both driver and evaluation metric**
- **How CONCORD will deliver global surveillance**
- **Survival for high-income countries**
- **Survival for low- and middle-income countries**

# **World Cancer Declaration – 11 goals for 2020**

## **UICC, Geneva, 2008**

- **Achieve major improvements in cancer survival in all countries (#11)**
- **Improve measurement of global cancer burden and impact of cancer control interventions (#2)**
- **Ensure effective delivery systems (#1)**
- **Dispel damaging myths and misconceptions (#5)**
- **Provide training opportunities (#9)**

**Surveillance and reporting every two years**

# What could explain survival differences ?

- **Longer delays, more advanced stage**
- **Availability and uptake of screening**
- **Access to treatment**
- **Differences in co-morbidity**
- **Quality of treatment**
- **Organisation of treatment services**
- **Human and financial resources**

# Global variations in cancer survival

- Access to diagnostic and treatment services
- Lack of investment in health resources
- Poor countries:
  - 80% of childhood cancers
  - Failure to start or complete treatment - 60%
- Rich countries:
  - Gross domestic product
  - Total national expenditure on health
  - Health technology - CT scanners

# National policy concerns

**Is survival equitable?**

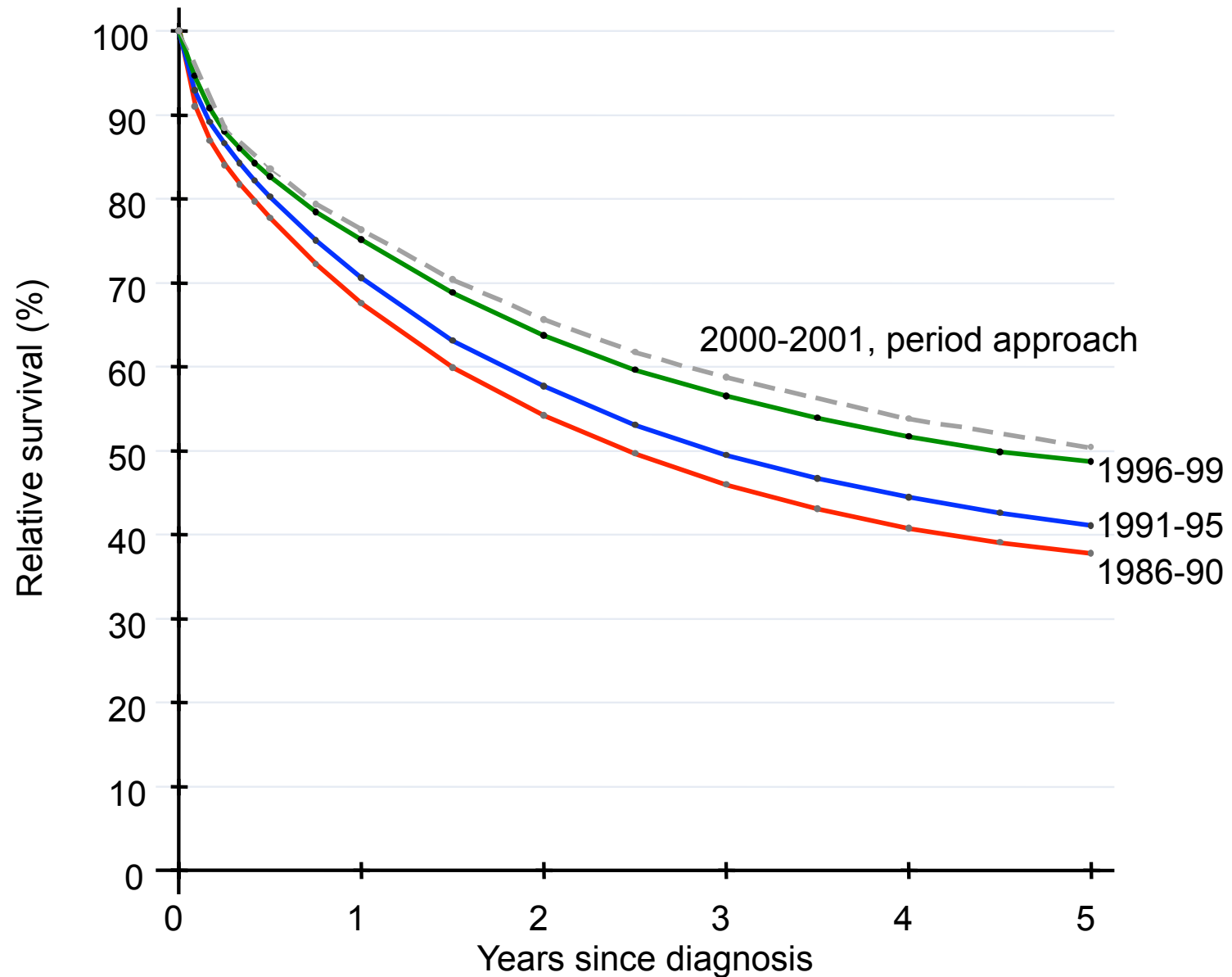
**Is national cancer plan effective?**

**Is survival as high as other countries?**

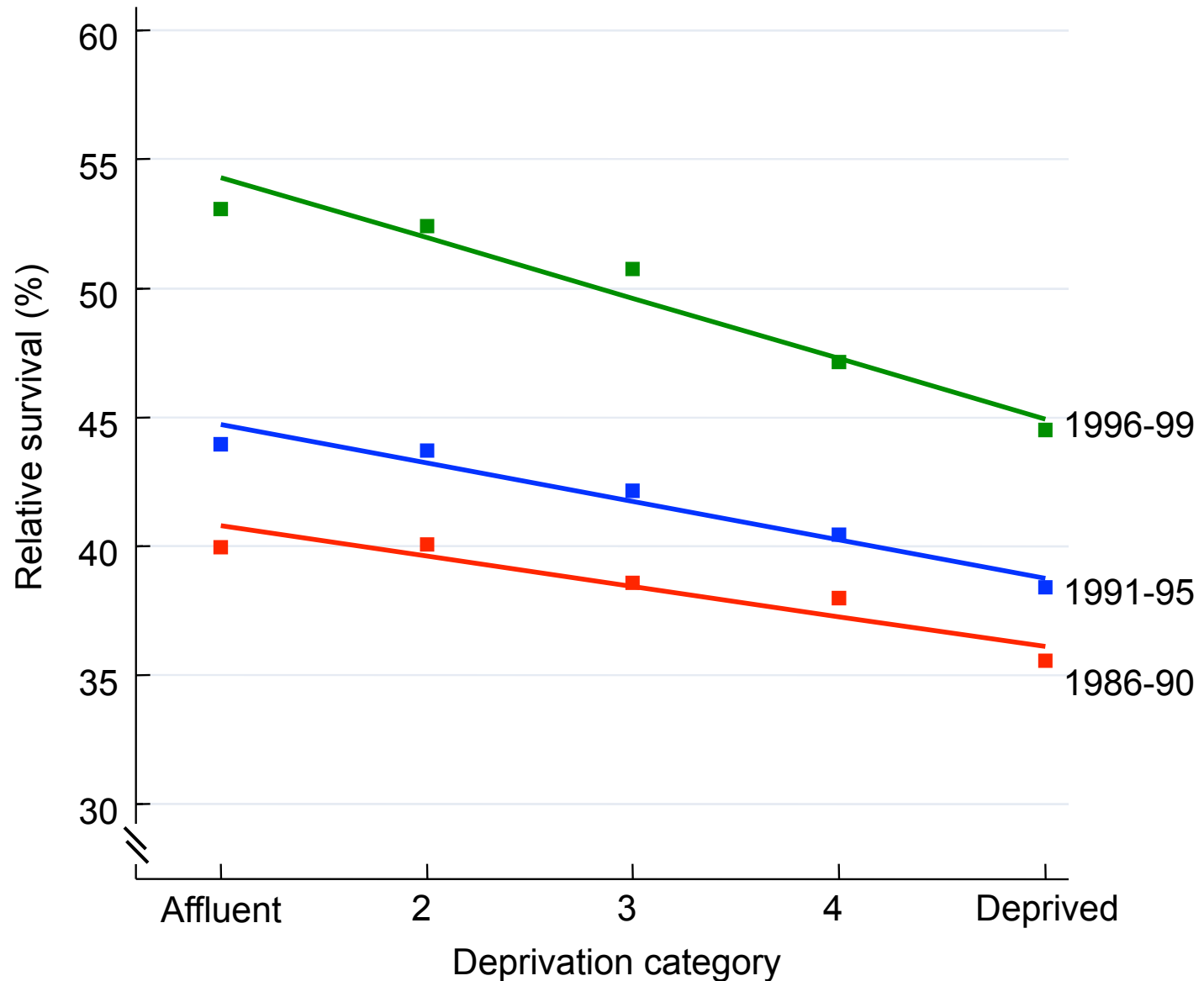
**If not:**

- **Why not?**
- **Can we see any improvements?**
- **What policy is required?**
- **How many premature deaths?**

# Rectal cancer survival, men, England and Wales



# Rectal cancer survival, men, England and Wales





# National policy concerns

Is survival equitable?

Is national cancer plan effective?

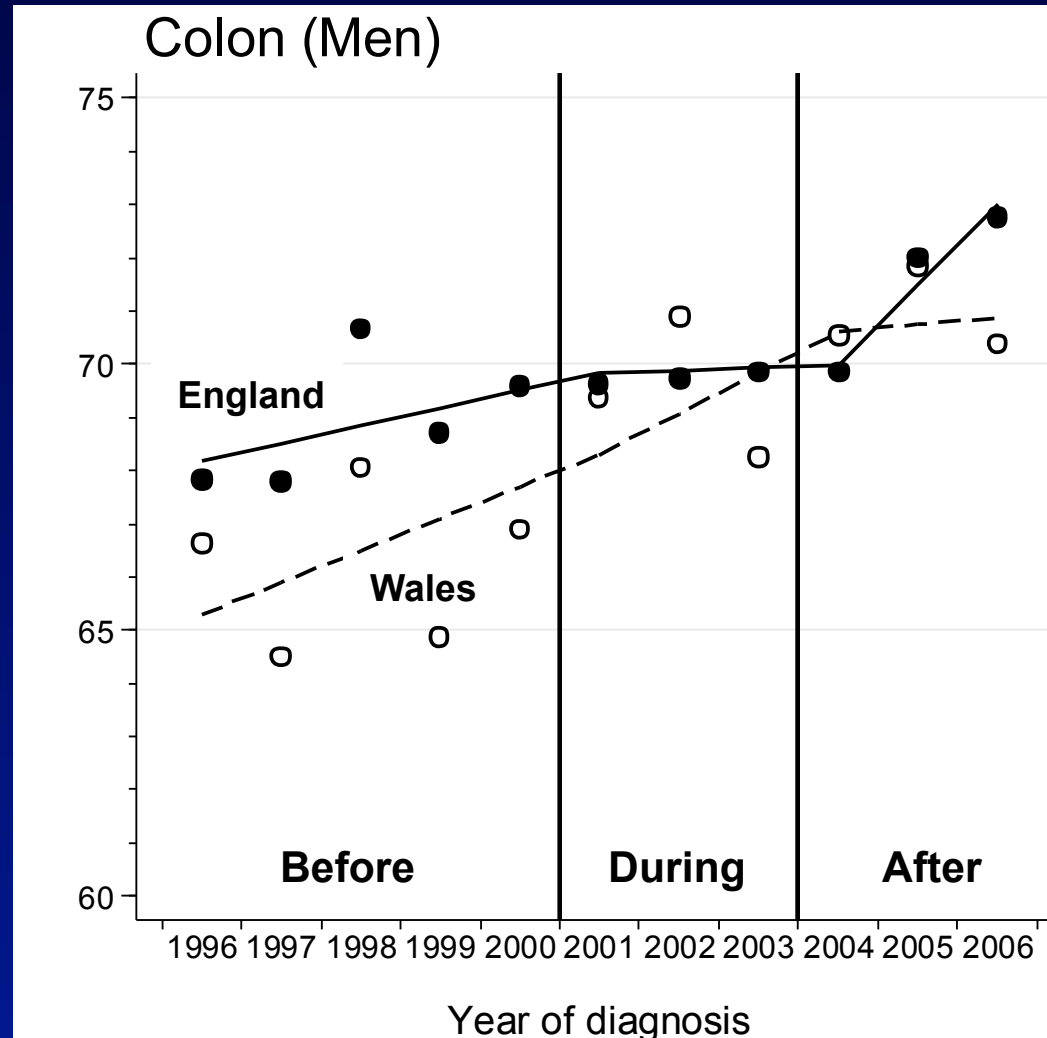
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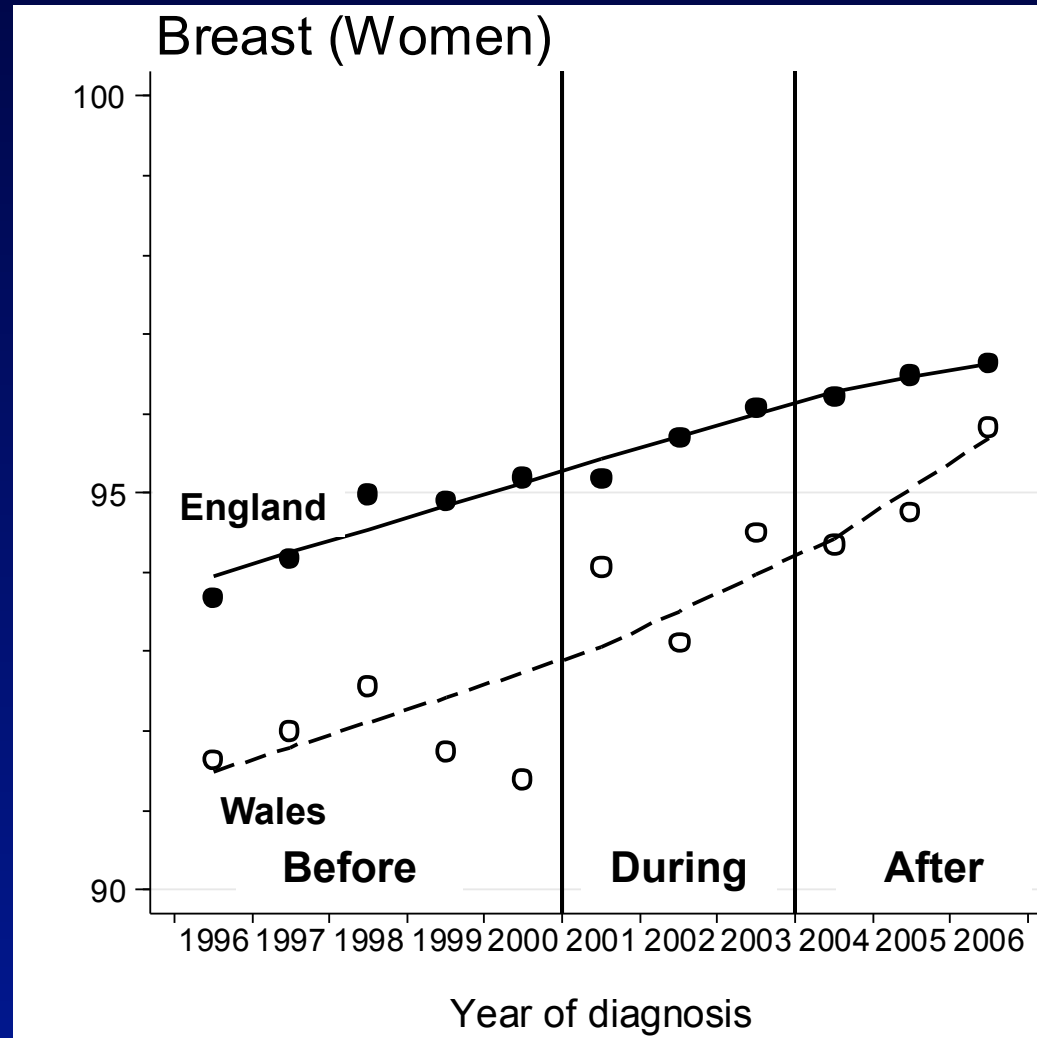
# Colon cancer: one-year survival trends

## England and Wales, men 1996-2006



# Breast cancer: one-year survival trends

## England and Wales, women, 1996-2006



# National policy concerns

Is survival equitable?

Is national cancer plan effective?

Is survival as high as other countries?

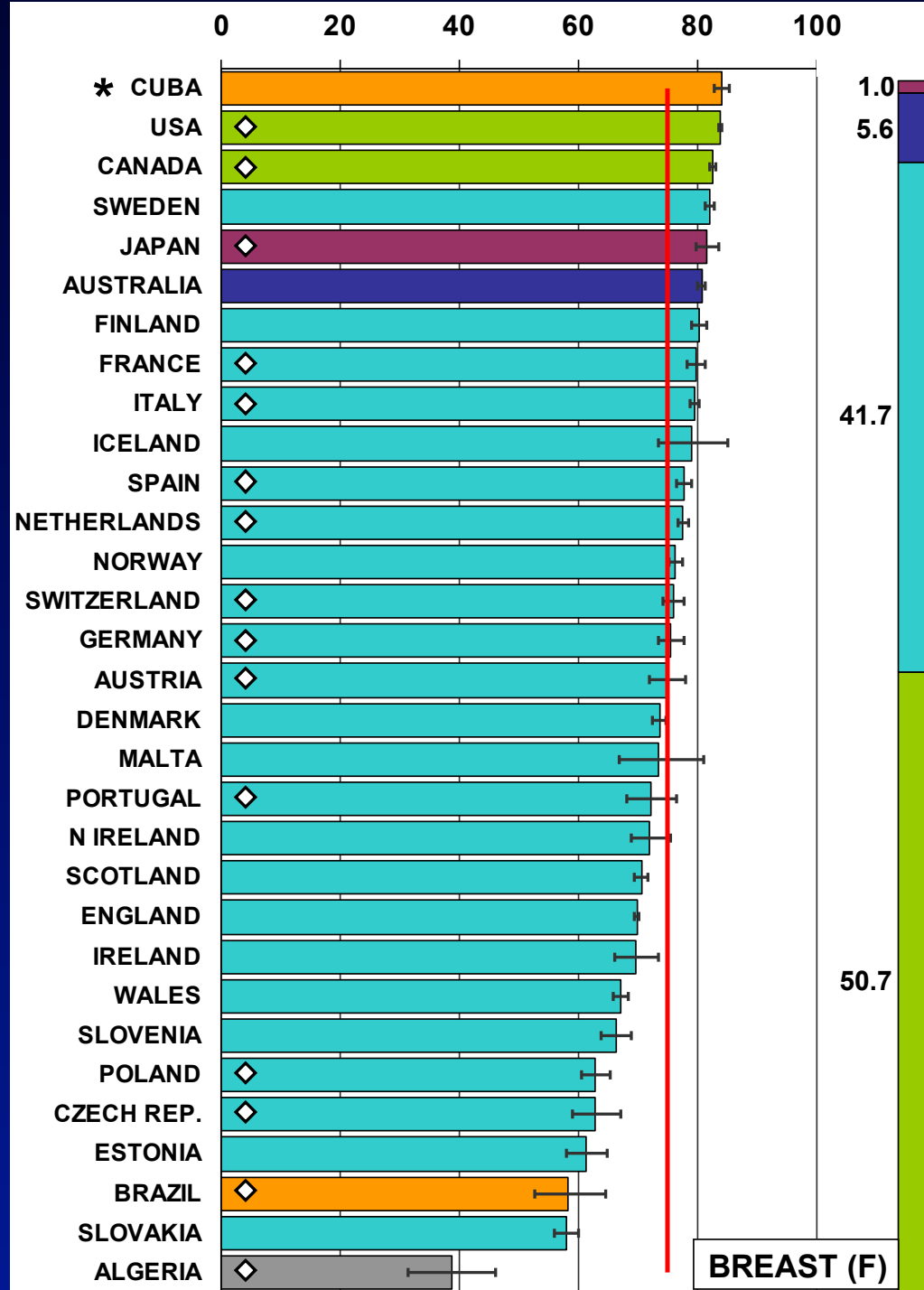
If not:

- Why not?
- Can we see any improvements?
- What policy is required?
- How many premature deaths?

# **Cancer survival in five continents (first CONCORD study)**

- **31 countries**
- **1.9 million cancer patients (aged 15-99)**
- **Breast (F), colon, rectum, prostate**
- **Diagnosed 1990-94, followed to 1999**

# Five-year relative survival (%) - breast cancer, women (15-99 years)



# **CONCORD high-resolution study**

**Most treatments from 1990s still widely used**

**Direct access to clinical records**

- 19,000 women aged 15-99, diagnosed 1996-98
- 7 US states
- 26 registries in 12 European countries

**Net survival, flexible parametric models**

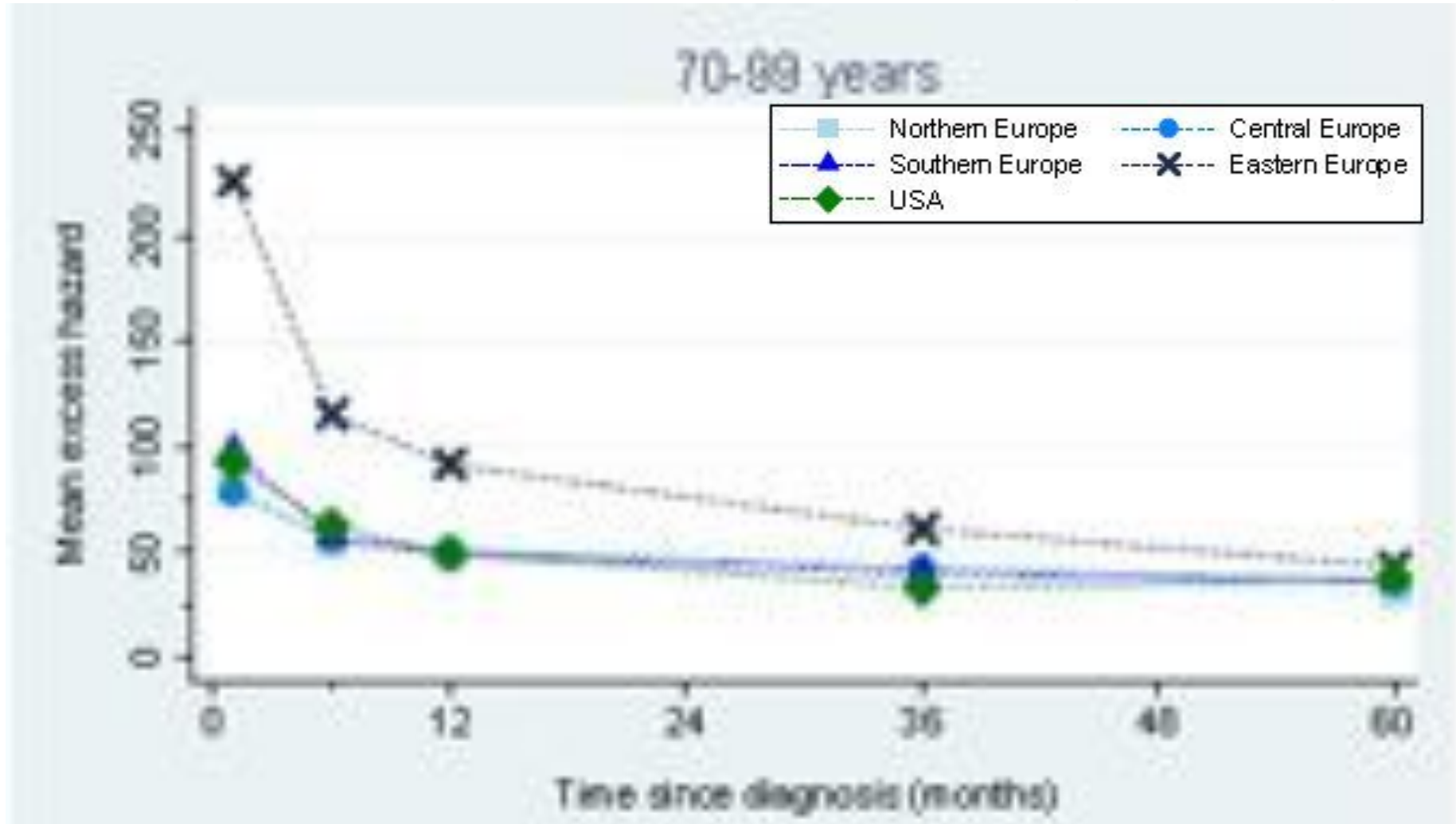
- Age-standardised net survival up to 5 years
- Excess hazard of death by stage and age

# Breast cancer survival in Europe and the US: a CONCORD high-resolution study





# Mean excess hazard of death per 1,000 person-years, breast cancer, Europe, late 1990s, by region and age



# CONCORD-2 - broader scope

## Wider geographic coverage

- Additional registries – up to 180
- Additional countries – up to 60

## Long-term trends, additional cancers

- Patients diagnosed 1995-2009 (+15 years)
- Follow-up to 2009 (+10 years)
- Stomach, liver, lung, cervix, ovary, leukaemia  
*as well as breast, colon, rectum, prostate*

# Ten cancers world-wide, 2008

New diagnoses in 2008: number (%) by economic development

NEW DIAGNOSES	Overall		Developed		Developing	
	No.	%	No.	%	No.	%
Stomach	989,600	7.8	275,700	8.8	713,900	18.8
Colorectum	1,233,700	9.7	727,400	13.1	506,400	7.5
Liver	748,300	5.9	122,000	2.2	626,700	8.8
Lung	1,608,500	12.7	724,300	13.8	884,500	12.4
Breast (F)	1,383,500	10.9	602,200	12.4	691,300	9.7
Cervix	529,500	4.2	76,500	1.4	453,300	6.4
Ovary	225,500	1.8	100,300	1.8	125,200	1.8
Prostate	903,500	7.1	648,400	11.7	255,300	2.8
Leukemia	350,300	2.8	140,700	2.5	209,900	3.8
Others	4,693,900	37.1	2,652,500	38.9	2,841,400	37.2
All cancers	12,847,500	100.0	5,946,000	100.0	7,907,600	100.0
DEATHS	7,871,700		2,751,400		4,829,900	

# Ten cancers in CONCORD-2, 1995-2009

	World 2008		CONCORD-2 1995-2009	
Stomach	989,600	7.8	2,500,000	7.8%
Colorectum	1,233,700	9.7	6,400,000	20.1%
Liver	748,300	5.9	1,300,000	4.1%
Lung	1,608,800	12.7	8,500,000	26.6%
Breast (F)	1,383,500	10.9	4,600,000	14.4%
Cervix	529,800	4.2	925,000	2.9%
Ovary	225,500	1.8	1,185,000	3.7%
Prostate	903,500	7.1	4,000,000	12.5%
Leukaemia	350,900	2.8	2,500,000	7.8%
CONCORD-2	7,973,600	62.9	31,910,000	100.0%
All cancers	12,667,500	100.0		

# Countries\* in CONCORD programme

	CONCORD	CONCORD-2
<b>Africa</b>	1	8
<b>America C&amp;S</b>	2	7
<b>America, North</b>	2	2
<b>Asia</b>	1	14
<b>Europe</b>	24	27
<b>Oceania</b>	1	2
	<hr/> 31	<hr/> 60

\* Provisional – recruitment still in progress

# Registries\* in CONCORD programme

	CONCORD	CONCORD-2	Registries
Africa	1	8	11
America C&S	2	7	24
America, North	2	2	24
Asia	1	14	30
Europe	24	27	87
Oceania	1	2	4
	31	60	180

\* Provisional – recruitment still in progress

# Additional analyses

## Timely, high-quality estimates:

- Geographic variation
- Recent trends
- Short-term predictions
- Estimates by race/ethnic group
- Prevalence by time since diagnosis
- Population “cure”
- Avoidable premature deaths (cancer, race)

# Wider programme

## Survival analyses, plus ...

- **Analytic tools**
- **Training in survival methodology**
  - Short courses in London
  - Bursaries for low-income countries
  - Outreach courses
- **Doctoral and post-doc fellowships**
- **Methodological development network**
- **Health policy applications**



# Time-line

- ✓ • **Protocol**
- ✓ • **Ethical and statutory approval**
- ✓ • **Peer review**
- ✓ • **Funding decisions – also in progress**
- **Data submission – from October 2012**
- **Quality control – by March 2013**
- **Analyses completed – from June 2013**
- **Short course in survival – June 2013**

# CONCORD Steering Committee 2012

Algeria	Mokhtar Hamdi Chérif	Italy	Milena Sant
Australia	Graham Giles	Italy	Arduino Verdecchia
Brazil	Sergio Koifman	Japan	Tomohiro Matsuda
Brazil	Gulnar Azevedo e Silva	Korea	Sohee Park
Canada	Loraine Marrett	The Gambia	Ebrima Bah
Canada	Donna Turner	UK	Michel Coleman
China	Chen Wan-Qing	UK	Charles Stiller
Colombia	Marión Piñeros	Uruguay	Jean-Michel Lutz
Finland	Timo Hakulinen	USA	Hannah Weir
India	A Nandakumar	USA	John Young
Italy	Franco Berrino	USA	Thomas C Tucker
Italy	Riccardo Capocaccia	IACR	Brenda Edwards

# Union for International Cancer Control

**High-priority health policies include:**

- **Bridge gaps in global cancer surveillance**
- **Increase number of health professionals with expertise in cancer control**

# Organisation of Economic Co-operation and Development

**CONCORD programme for global surveillance of cancer survival:**

- “ ... proving to be hugely valuable in our own work in documenting the quality of health care across countries.”**
- “ ... has contributed to a sea-change in how national policymakers are using international comparisons to improve their health systems.”**

# WHO European Region

## The CONCORD programme:

- **Fills a huge gap in the knowledge of cancer survival world-wide**
- **Enables comparison between low-income countries with innovative programmes**
- **Evidence base for health care effectiveness**
- **High-quality evidence for surveillance of public health threats**
- **Is coherent with WHO strategic objectives**



# Measures of cancer burden - definition

- Incidence – new cases (rate/ $10^5$  p-years)
- Survival – probability alive at time “ $t$ ”
- Prevalence – survivors (proportion)
- Mortality – deaths (rate/ $10^5$  p-years)

# Measures of cancer burden – for me

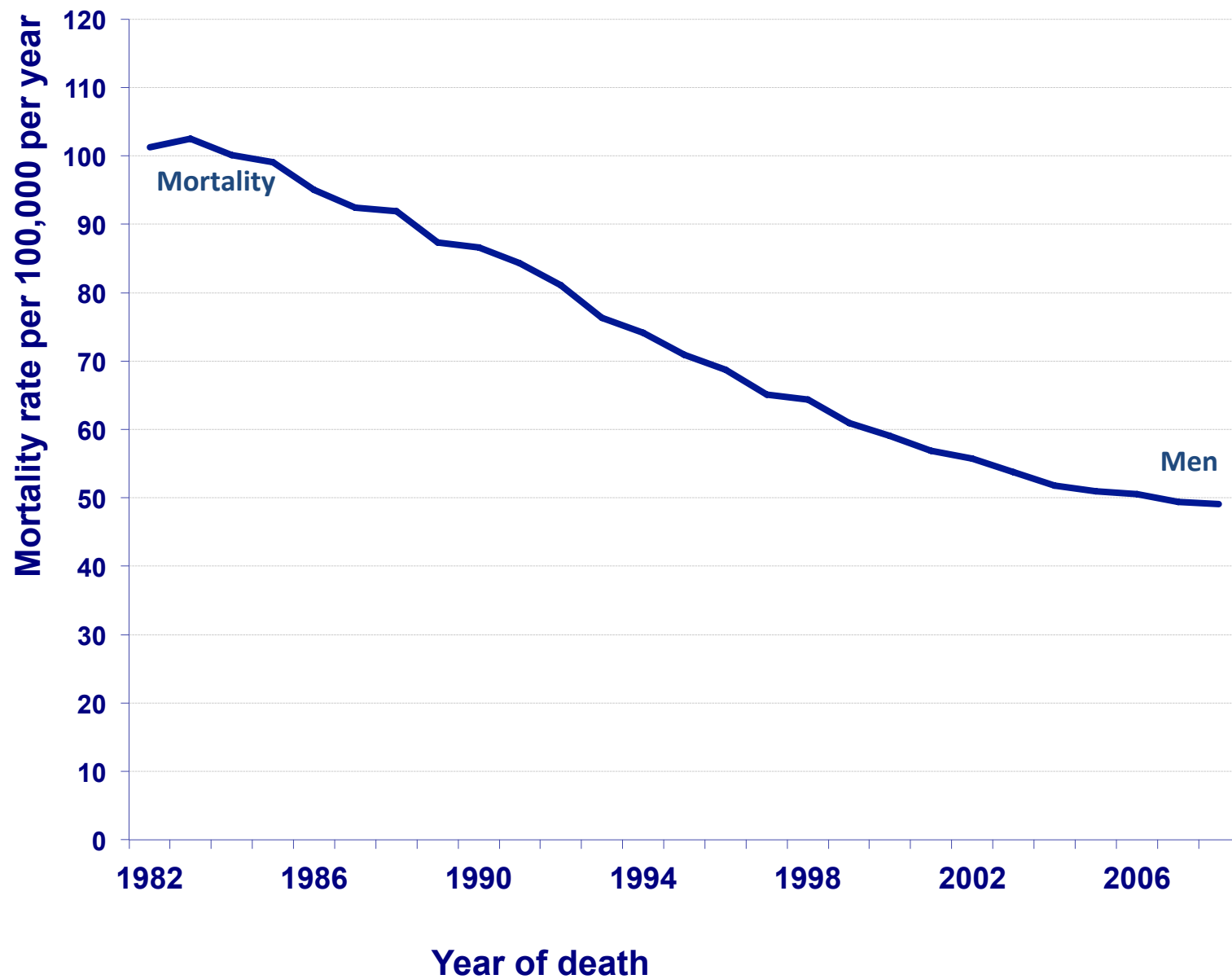
- Incidence – what's my risk?
- Survival – what are my chances?
- Prevalence – how many of us are there?
- Mortality – those we have lost ...



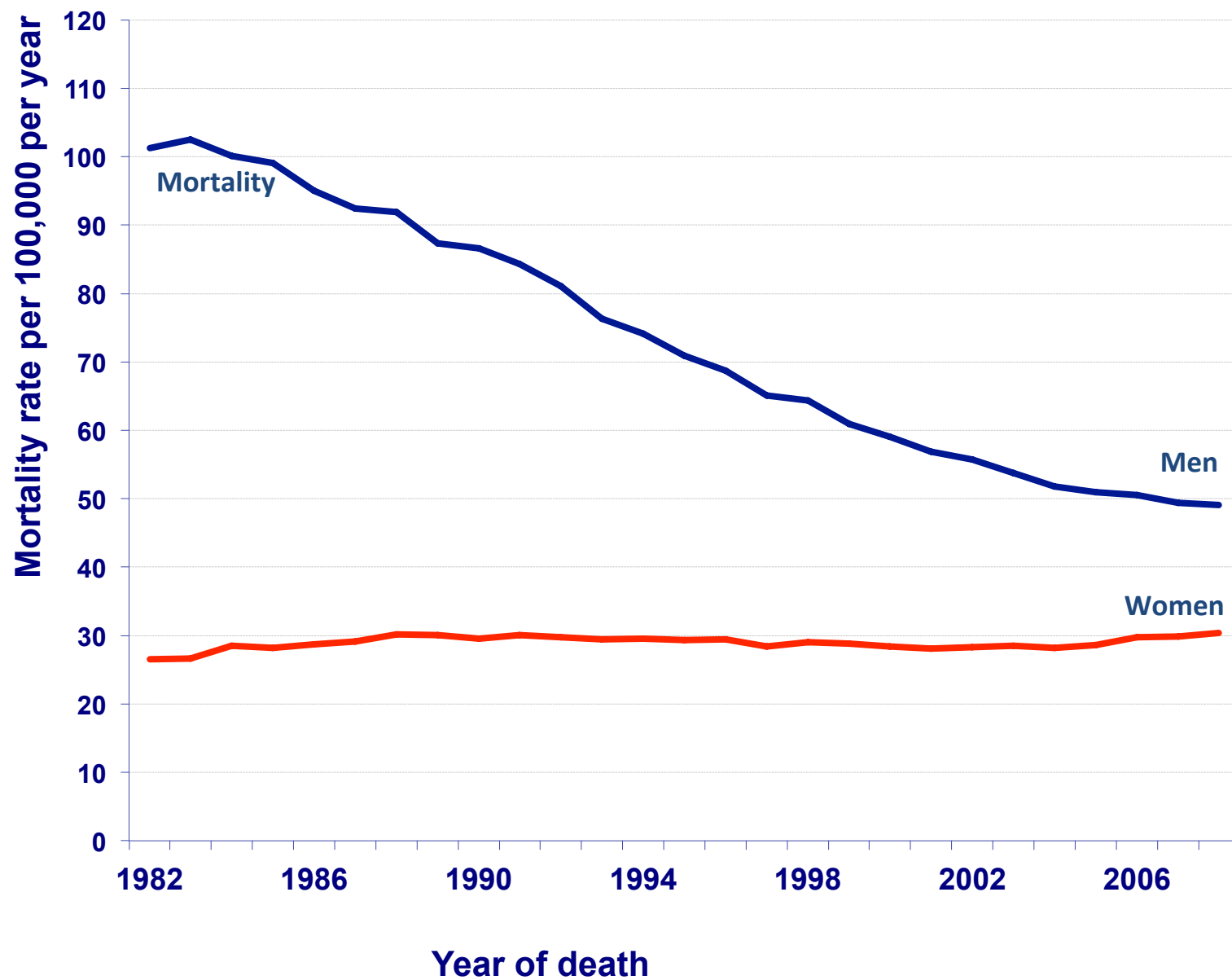
# Measures of cancer burden - application

- Incidence – prevention, planning services
- Survival – effectiveness of health care
- Prevalence – care (combines both)
- Mortality – priorities (combines both)

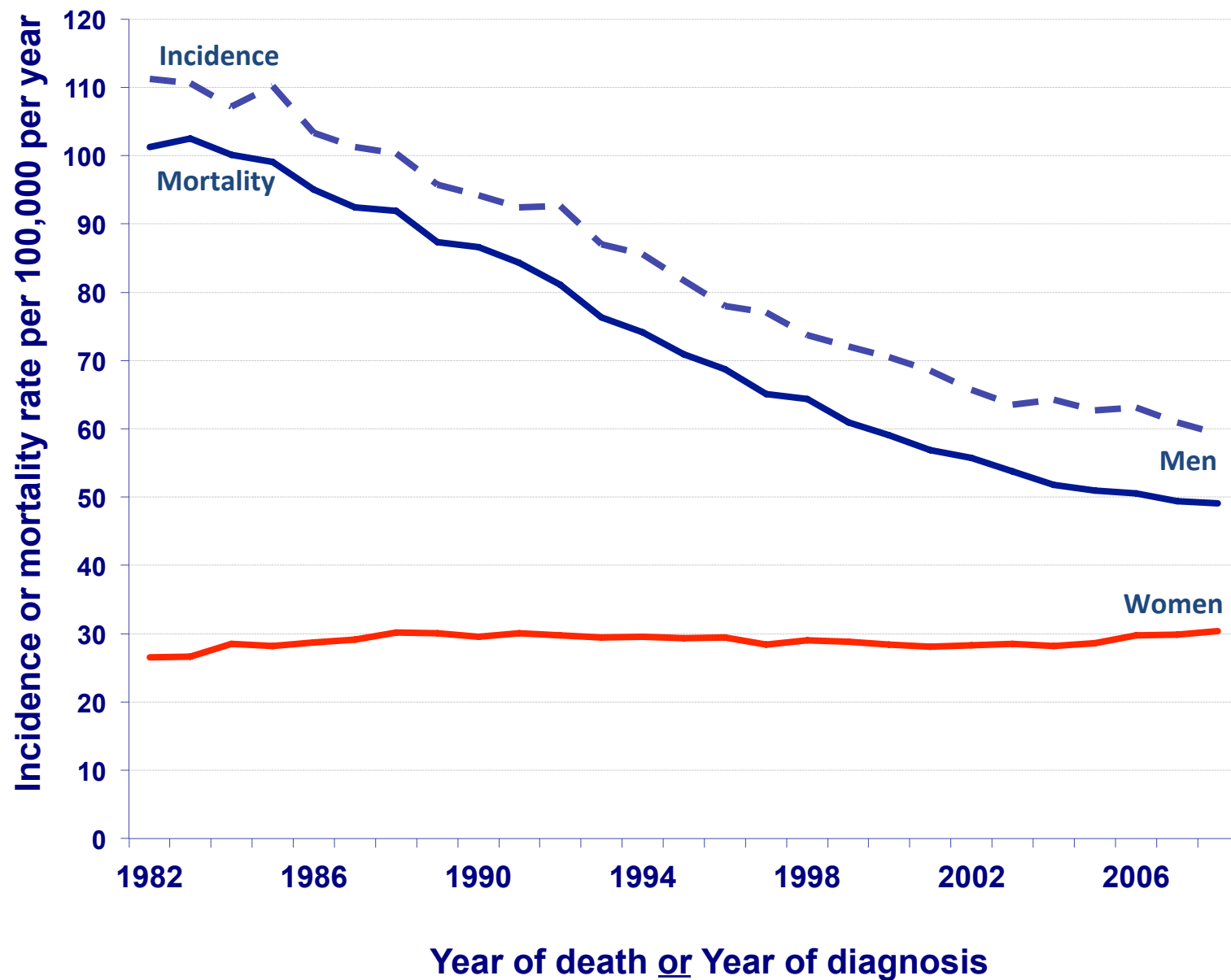
# Lung cancer: age-standardised trends England, 1982-2008, by sex



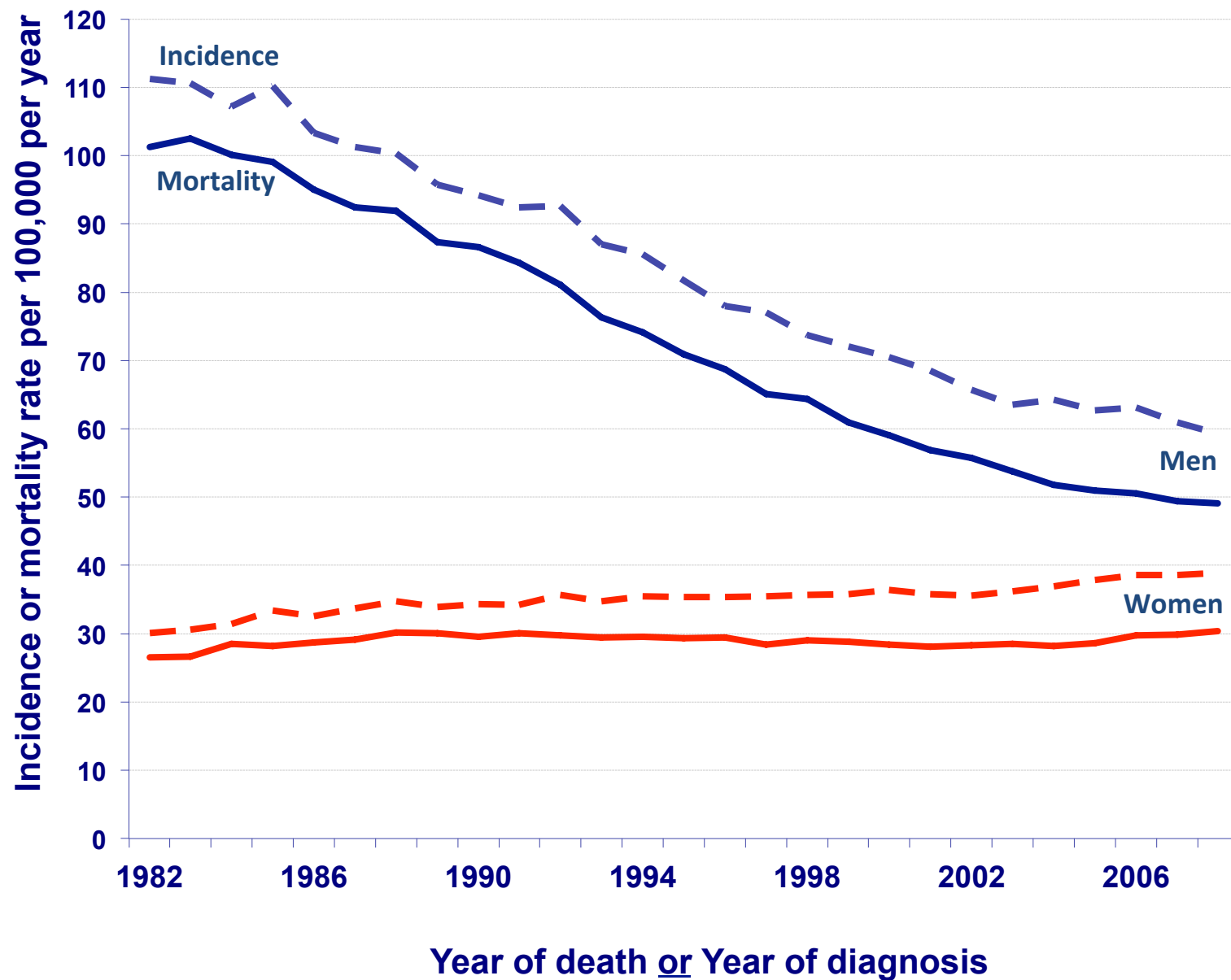
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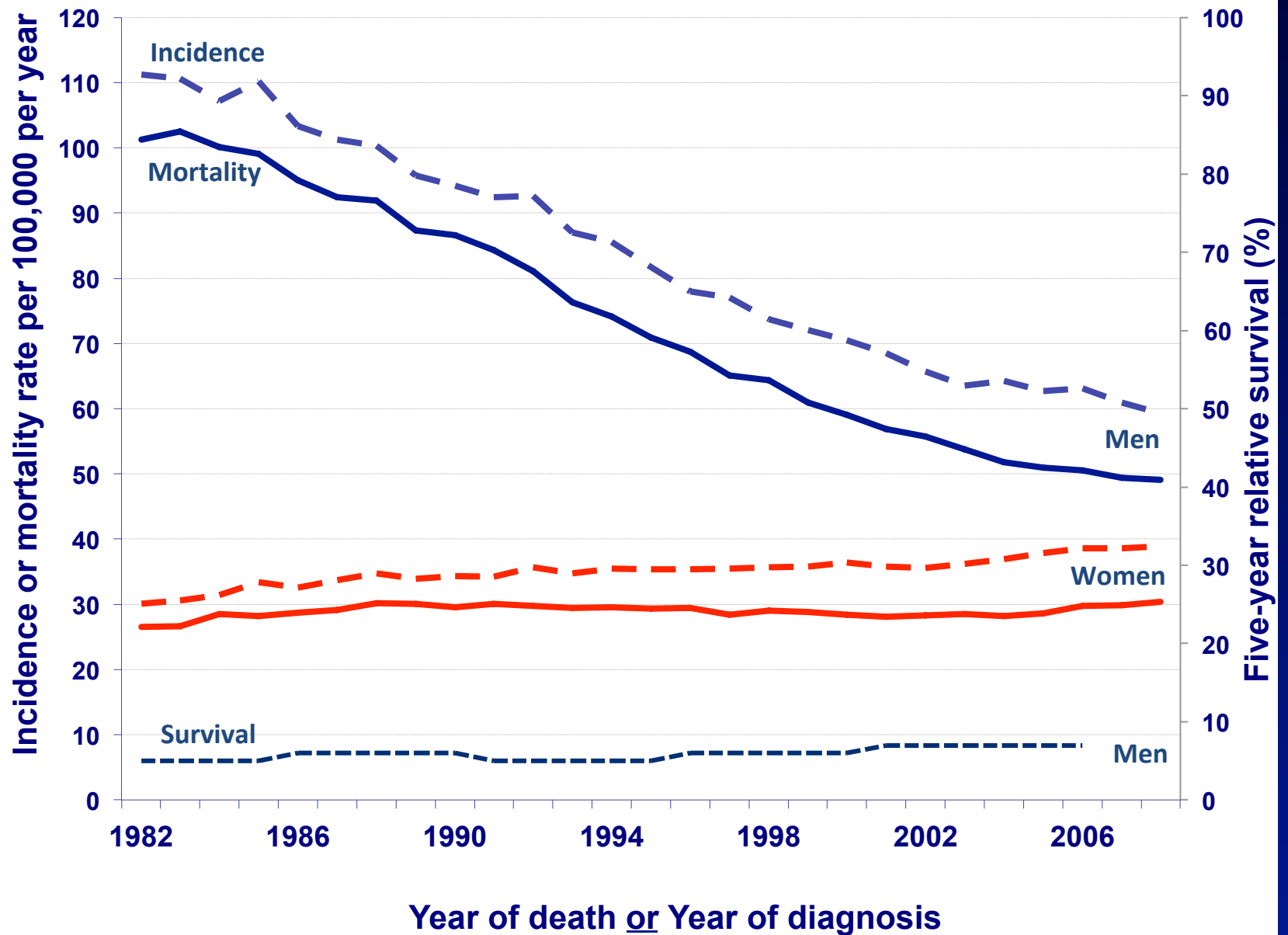
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