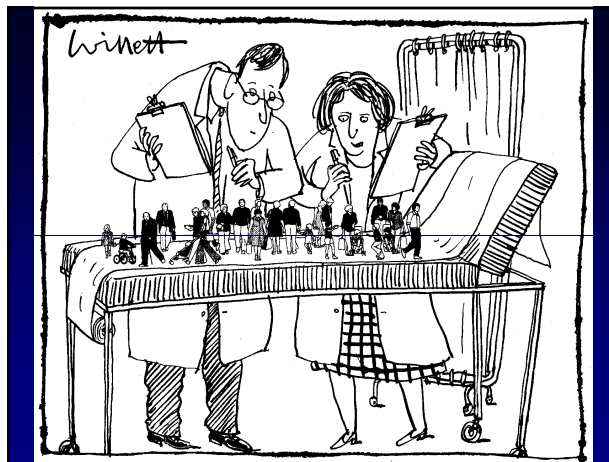


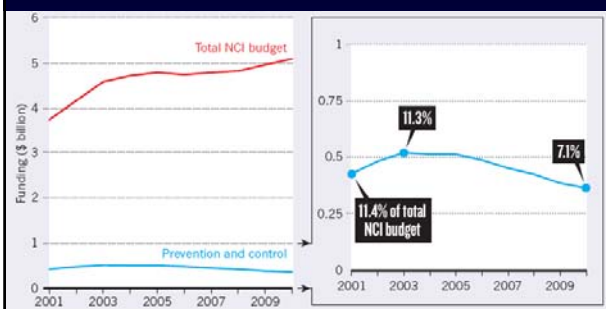
## The impact of cancer survival studies on health policy



**North American Association  
of Central Cancer Registries**  
Louisville KY, 21 June 2011



## NCI prevention budget falls



O'Callaghan T, Nature 2011; 471: S2-S4

## Cancer burden set to rise

	Cases	Deaths	Survivors
<b>2008</b>	<b>12</b>	<b>8</b>	<b>28</b>
<b>2030</b>	<b>20</b>	<b>13</b>	<b>62</b>

## Cancer survival – applications

- **Local clinical uses**
- Geographic differences and trends
- **Socio-economic – individual and areal**
- **Impact of treatment guidelines**
- Surveillance of equity – avoidable deaths
- National cancer plans – effectiveness
- International differences and trends

## Is cancer survival important?

**“Survival does not ring any cause-worthy bells.”**

Response of one US research foundation approached to fund CONCORD study

**“This research proposal is not clinically relevant.”**

Response of a breast cancer research charity approached to fund CONCORD study

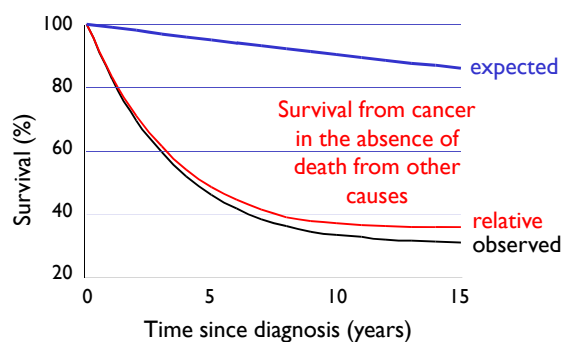
## Clinical research and public health

Clinical trials highest **achievable** survival

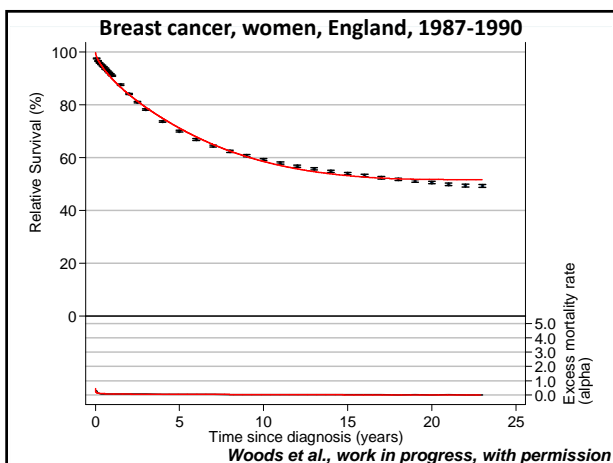
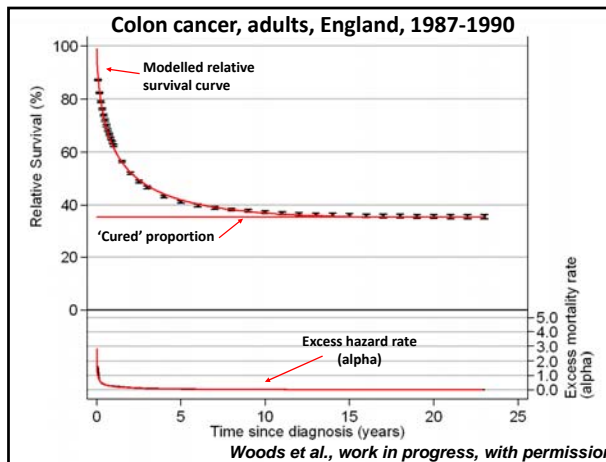
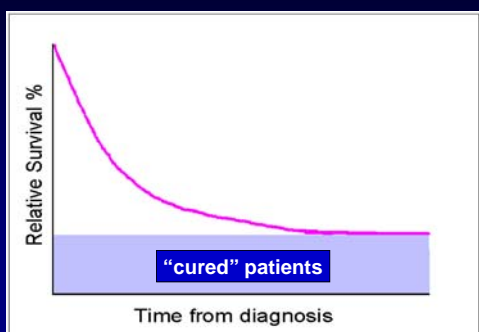
Public health average survival **achieved**

**Translational research to reduce the difference**

## Observed and expected survival



### Relative survival and population "cure"

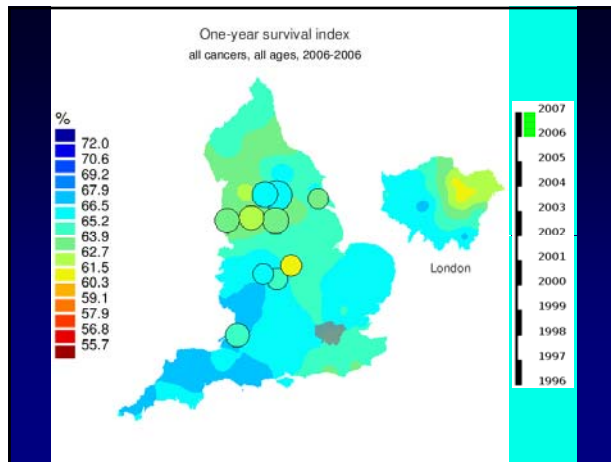
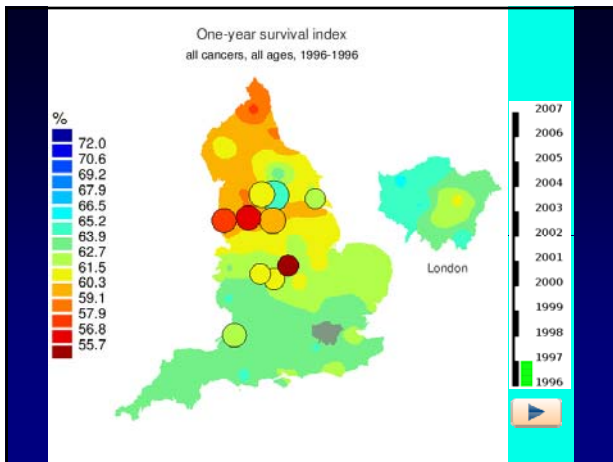


### Survival index for Primary Care Trusts

**Specific for each of 152 Primary Care Trusts**  
**Local measure of outcome (effectiveness); and**  
**National metric for surveillance and strategy**

- **One-year relative survival index**
- **All cancers - age, sex, case-mix adjustment**
- **Patients diagnosed in each PCT, each year**
- **11 consecutive years 1996-2006**

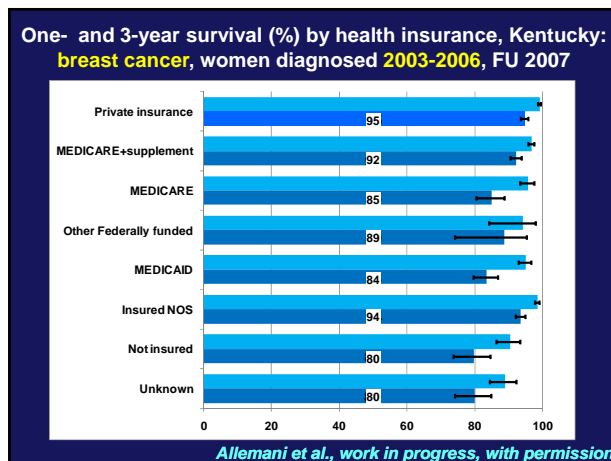
*Quaresma et al., work in progress, with permission*



### Cancer survival in Kentucky: impact of health insurance

- US health-care reform - [still] controversial
- Cancer survival associated with type (or lack) of health insurance in 1995-1998  
*(McDavid et al., 2003)*
- Does survival still differ by insurance status ?
- Does insurance status help explain Black-White survival differences ?
- Does socio-economic status contribute ?

*Allemani et al., work in progress, with permission*



## National policy concerns

Is survival equitable?  
Is survival as high as other countries?  
Is national cancer plan effective?

If not:

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

## NHS Cancer Plan 2000 - England

**35% real-terms rise in funding 2000-03**

**Prevention, screening, treatment**

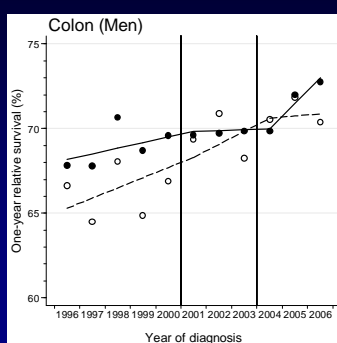
**More specialist staff, better training**

**Earlier diagnosis**

**Multi-disciplinary teams**

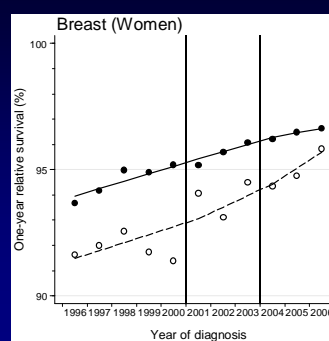
**Reduction of inequalities**

## Colon cancer: one-year survival trends England and Wales, men 1996-2006



*Rachet et al., 2009*

## Breast cancer: one-year survival trends England and Wales, women, 1996-2006



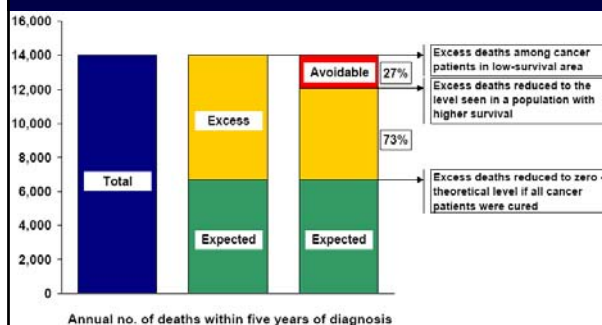
*Rachet et al., 2009*

### Avoidable cancer deaths: Britain vs. Europe

How many cancer-related deaths within five years of diagnosis would be expected *not* to occur, if survival in Britain were the same as in other European countries?

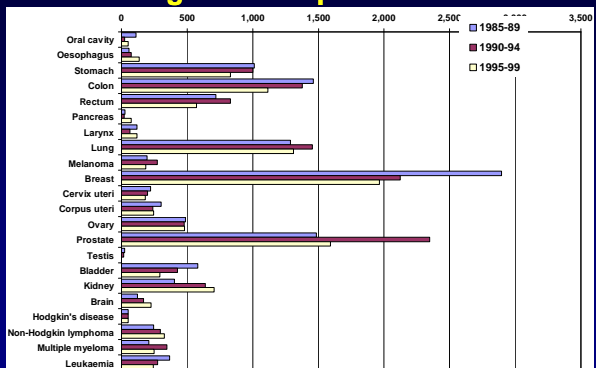
Has this avoidable premature mortality changed over time?

### Deaths: total, excess and avoidable



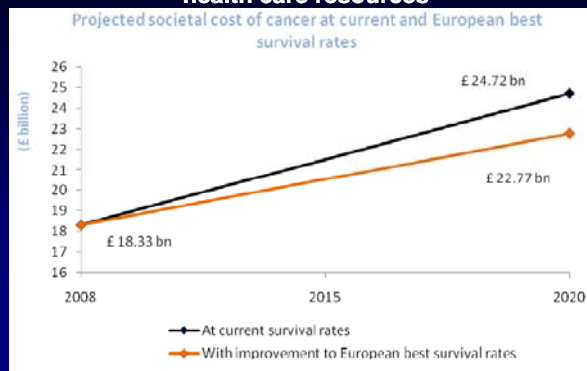
Abdel Rahman et al., 2009

### Avoidable premature deaths per year vs. highest European survival



Abdel Rahman et al., 2009

### Avoidable deaths can inform prioritisation of health care resources



Featherstone and Whitham, 2010

## NHS Cancer Plan 2011 - England

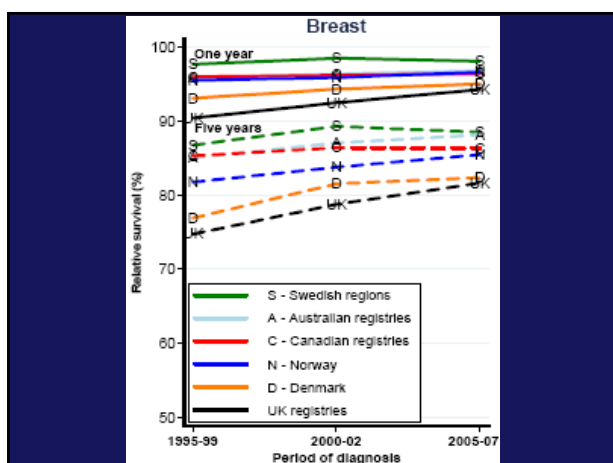
### Strategy informed by evidence:

- English survival continues to lag behind best-performing countries in Partnership ...
- **If England were to achieve European average survival, 5,000 lives would be saved every year**
- A range of actions to respond to this challenge

*Improving Outcomes: A Strategy for Cancer. Department of Health, 2011*

## International Cancer Benchmarking Partnership

- **Breast, colorectum, lung, ovary**
- **Diagnosed 1995-2007, followed up to 2007**
- **2.4 million patients**
- **Australia – New South Wales, Victoria**
- **Canada – Alberta, Br Columbia, Manitoba, Ontario**
- **Denmark**
- **Norway**
- **Sweden**
- **UK – England, Northern Ireland, Wales**



## ICBP - overview of results

- **Survival rose for all 4 cancers, all countries**
- **High in Australia, Canada, Sweden**
- **Intermediate in Norway**
- **Low in Denmark, UK**
- **Data quality or artefact unlikely**
- **Direct relevance to health policy**

*Coleman et al., 2011*

### What could explain survival differences ?

**Longer delays, more advanced disease**

**Co-morbidity**

**Availability and uptake of screening**

**Access to treatment**

**Quality of treatment**

**Organisation of treatment services**

**Human and financial resources**

*after Richards, 2009*

### ICBP Modules 2 to 5 – next steps

- **Public attitudes, awareness, beliefs - survey**
- **Primary care performance**
- **Duration of symptoms**
- **High-resolution studies**
- **Measure progress in avoidable deaths ?**
- **Survival trends to evaluate cancer plans**
  
- **Remediable causes of survival deficits**
- **Direct input to health policy**

### “Levels of ambition” in cancer strategy

- **Progress measured by trends in survival**
- **Time lag between diagnosis and survival, so –**
- **Proxy measures to monitor progress**
  - **Stage at diagnosis**
  - **Emergency presentation rate**
  - **Major treatment rate**

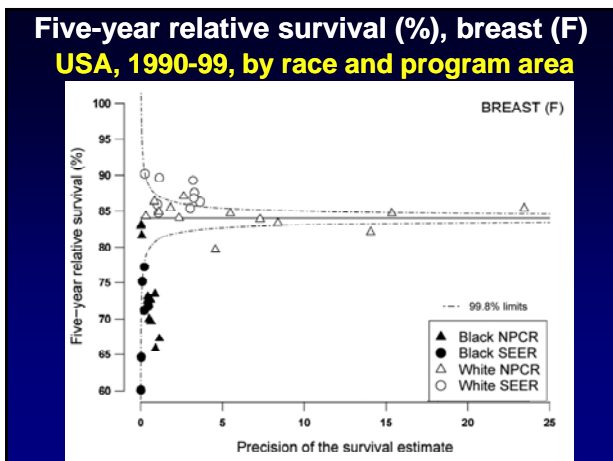
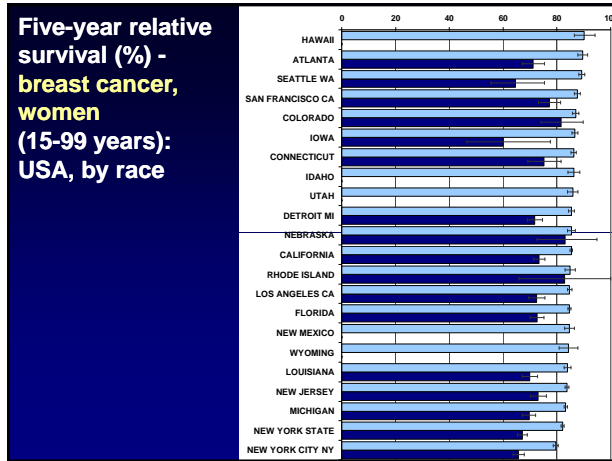
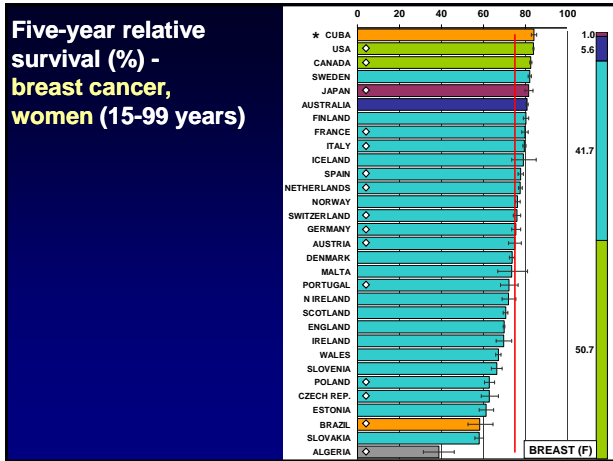
*Improving Outcomes: A Strategy for Cancer, Department of Health, 2011*

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

**31 countries (16 with 100% coverage)**  
**101 population-based cancer registries**  
**300 million population base**  
**Breast (F), colon, rectum, prostate**  
**1.9 million cancer patients (aged 15-99)**  
**Diagnosed 1990-94**  
**Followed up to 31 December 1999**

*Lancet Oncology 2008; 9: 730-756*





### Cancer survival in five continents: a worldwide population-based study (CONCORD)

Michel P Coleman, Manohar Quaresma, Franco Berrino, Juan-Miguel Lutz, Roberto De Angelis, Riccardo Capocaccia, Paolo Boffi, Bernard Rachet, Gemma Getz, Tereza Hakola, Andrea Micheli, Milena Song, Harshvi K'War, J. Mark Ellwood, Hiroaki Tsukuma, Sergio Kojouhar, Guiher Alzavedo e Silva, Silvia Franceschi, Mariano Santaguida, Adriano Verdecchia, Hans H Storm, John, Young, and the CONCORD Working Group\*

**Summary**  
 Background Cancer survival varies widely between countries. The CONCORD study provides survival estimates for 1.9 million adults (aged 15-99 years) diagnosed with a first, primary, invasive cancer of the breast (women), colon, rectum, or prostate during 1990-94 and followed up to 1999. In use of individual tumour records from 101 population-based cancer registries in 31 countries on five continents. This is, to our knowledge, the first worldwide analysis of cancer survival, with standard quality-control procedures and identical analytic methods for all datasets.  
 Methods To compensate for wide international differences in general population (background) mortality by age, sex,

*The Lancet Oncology's most-read articles in 2008*

5 **Article** Cancer survival in five continents: a worldwide population-based study (CONCORD). Coleman MP, Quaresma M, Berrino F, et al. *Lancet Oncol* 2008; 9:730-56.

12 **Review** Pharmacovigilance oversight in US FDA for bisphosphonates and

12,000+ downloads from *The Lancet Oncology* website  
 100+ citations TLO editor (personal comm.) September 2010

### CONCORD-2 – provisional time-line

- ✓ Ethical and statutory approval – April 2011
  - Peer review – November 2011
  - Funding decision – December 2011
- IF ...
- Data submission – by June 2012
  - Quality control – by September 2012
  - Analyses completed – December 2012

### WHO EURO support for CONCORD-2

- Fills huge gap in 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
- Coherent with WHO strategic objectives

*Dr Jose M Martin-Moreno, WHO Regional Office for Europe, 16 May 2011*

### Global surveillance of cancer

**“I believe that the fight against cancer, rather than focussing on specific, spectacular news, should aim at viewing the overall global comprehensive picture.**

**“We should monitor trends if we want to improve that reality.”**

Dr Tabaré Vázquez, oncologist  
President of Uruguay (2005-10)

*World Cancer Leaders' Summit, Shenzhen, China, 19 August 2010*

