

LONDON  
SCHOOL OF  
HYGIENE  
& TROPICAL  
MEDICINE



Programme of  
Action for  
Cancer  
Therapy  
PACT



INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY  
CONSTITUTION STANDARDS



Kraftens Bekampelse

## Cancer survival in low- and middle-income countries

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on behalf of the CONCORD Steering Committee



World Cancer Congress  
Montreal, Canada - 30 August 2012

# based cancer survival estimates

Represent average prognosis of cancer in a specific population

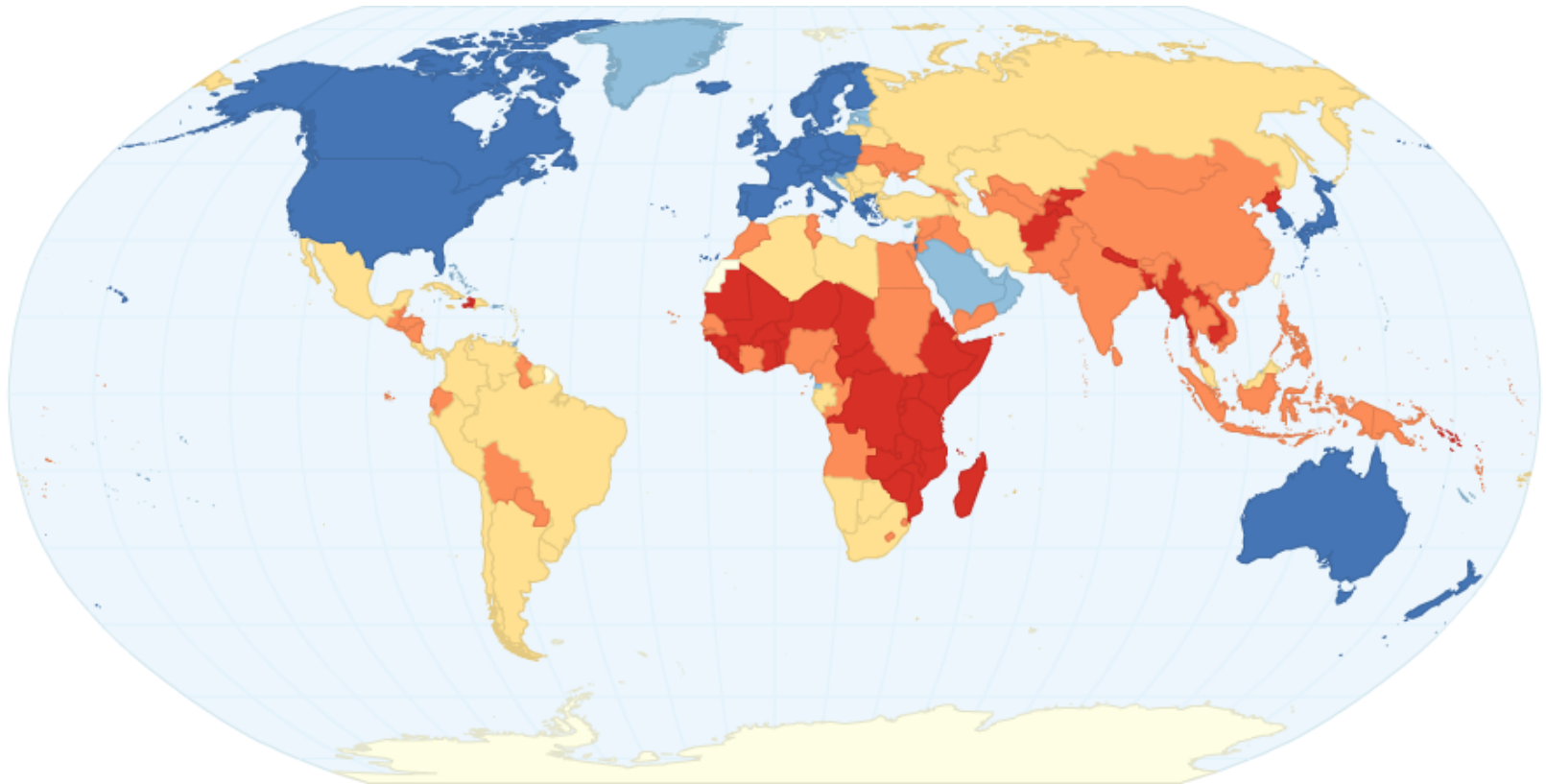
- Socio-economic features
- Health care seeking behaviours
- Coverage and quality of health care services

Evaluate progress in cancer control

Evaluate differences in equity when done in a comparative way

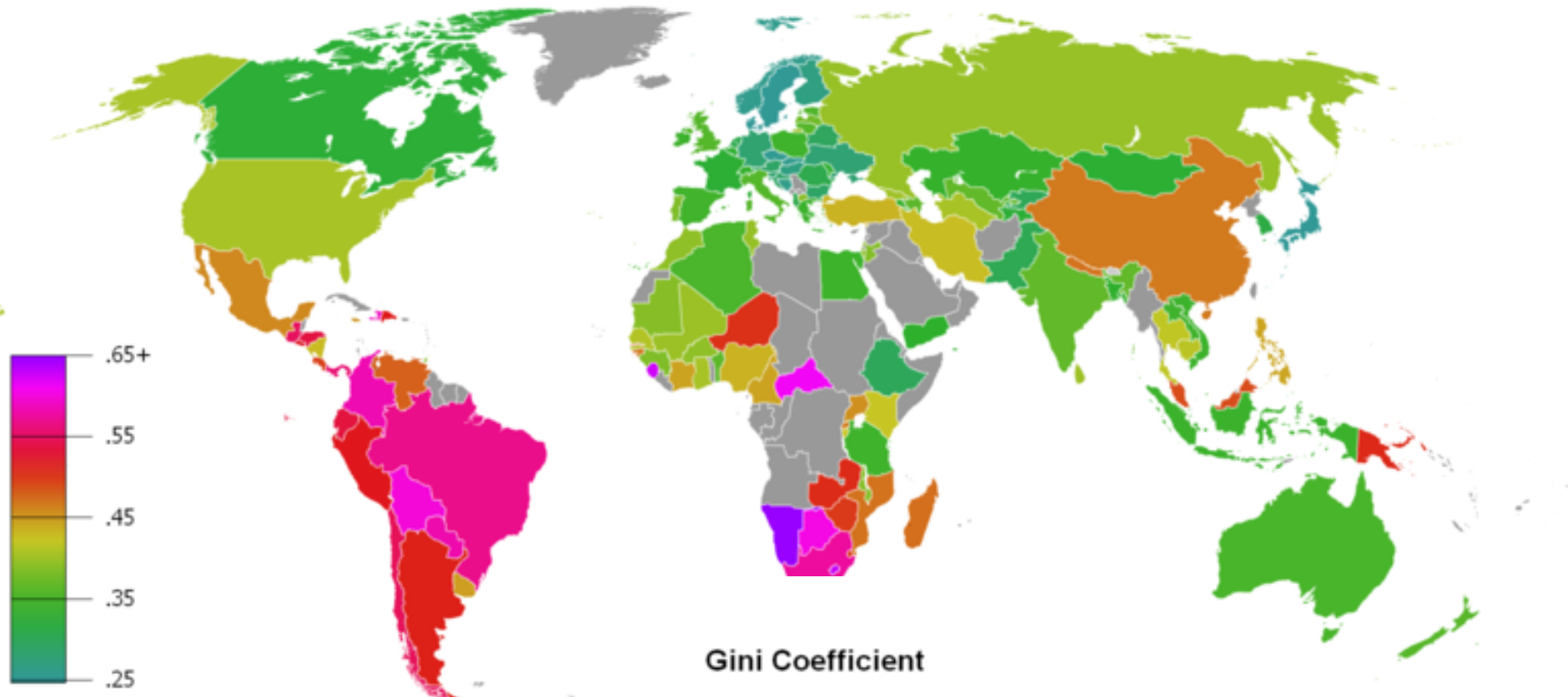
# Country Income Groups

(World Bank Classification)



- High-Income, GNI per capita (US\$): 12,196 or more
- Upper Middle-Income, GNI (US\$): 3,946 - 12,195
- Lower Middle-Income, GNI (US\$): 995 - 3,945
- Low-Income, GNI (US\$): below 995

# Country Gini Coefficient (UN)



# Cancer burden according to income

No	High Income Countries						Low - Middle Income Countries					
	Site	Cases	ASR	Deaths	ASR	M/I	Site	Cases	ASR	Deaths	ASR	M/I
1	<b>Colorrect</b>	728,550	30.1	320,279	12	0.40	<b>Lung</b>	884,359	19.1	777,953	16.8	0.88
2	<b>Lung</b>	723,696	31.3	598,626	24.8	0.79	<b>Stomach</b>	713,907	15.3	556,471	11.9	0.78
3	<b>Breast</b>	692,634	66.4	189,455	15.3	0.23	<b>Breast</b>	691,521	27.3	269,048	10.8	0.40
4	<b>Prostate</b>	644,044	61.7	136,238	10.5	0.17	<b>Liver</b>	626,548	13.1	580,440	12.2	0.93
5	<b>Stomach</b>	274,695	11.4	180,948	7.2	0.63	<b>Colorrecta</b>	506,558	10.7	288,772	6.1	0.57

# Comparative cancer survival studies in LMIC

LMI Country	Institution, Study and No. of cancer registries involved			
	IARC <sup>1</sup>	IARC <sup>2,3</sup>	LSHTM - CONCORD <sup>4</sup>	ISS -ROME <sup>5</sup>
<b>Asia</b>				
China	2	4		
India	4	5		
Pakistan		1		
Philippines	1	2		
Thailand -	2	4		
<b>Africa</b>				
Algeria			1	
The Gambia		1*		
Uganda		1		
Zimbabwe		1		
<b>Europa</b>				
Estonia			1*	
Poland**			2	
Turkey		1		
<b>Latin America</b>				
Cuba	1*	1*	1*	
Costa Rica		1*		
Brazil			2	1
<b>Total Countries and registries</b>	<b>5 (10)</b>	<b>11 (21)</b>	<b>5 (7)</b>	<b>1</b>

\* National Cancer Registry

\*\* LMIC before 2008

1. Sankaranarayanan R, et al IARC Scientific Publ 145; 1998 / 2. Sankaranarayanan R, et al. Lancet Oncol 2010; 11: 165–73

3. Sankaranarayanan R, et al. SurvCan IARC Scientific Publications volume 162, 2011 /

4. Coleman M, et al Lancet Oncol 2008; 9: 730–5 / 5. Verdecchia et al. Eur Journal of Cancer 2003; 39: 1603–1609



# Collaborative survival studies in LMIC

## Key issues

1. Building local capacity for survival surveillance
  - Training
  - Timeliness
2. Comparability
3. Visibility
4. Monitoring progress of cancer control

# 1. Building local capacity

Registry	Vol. I	Vol. II	Vol. III	Vol. IV	Vol. V	Vol. VI	Vol. VII	Vol. VIII	Vol. IX
<b>Cali</b>	1962-64	1962-66	1967-71	1972-76	1977-81	1982-86	1987-91	1992-96	1998-2002
<b>Campinas</b>	-	-	-	-	-	-	-	1991-95	-
<b>Chennai</b>	-	-	-	-	1982	1983-87	1988-92	1993-97	1998-2002
<b>Barshi</b>	-	-	-	-	-	-	1988-92	-	-
<b>The Gambia</b>	-	-	-	-	-	1987-89	-	1997-98	-



Non-collaborative survival study



Collaborative survival studies

1. Bravo LE, et al. Supervivencia ca Cuello; supervivencia en niños. Informes al INC, 2007-2008

2. Coleman M, et al. Lancet Oncol 2008; 9: 730-56

3. Sankaranarayanan R et al IARC Scientific Publ 145

4. Sankaranarayanan R et al Lancet Oncol 2010; 11: 165-73



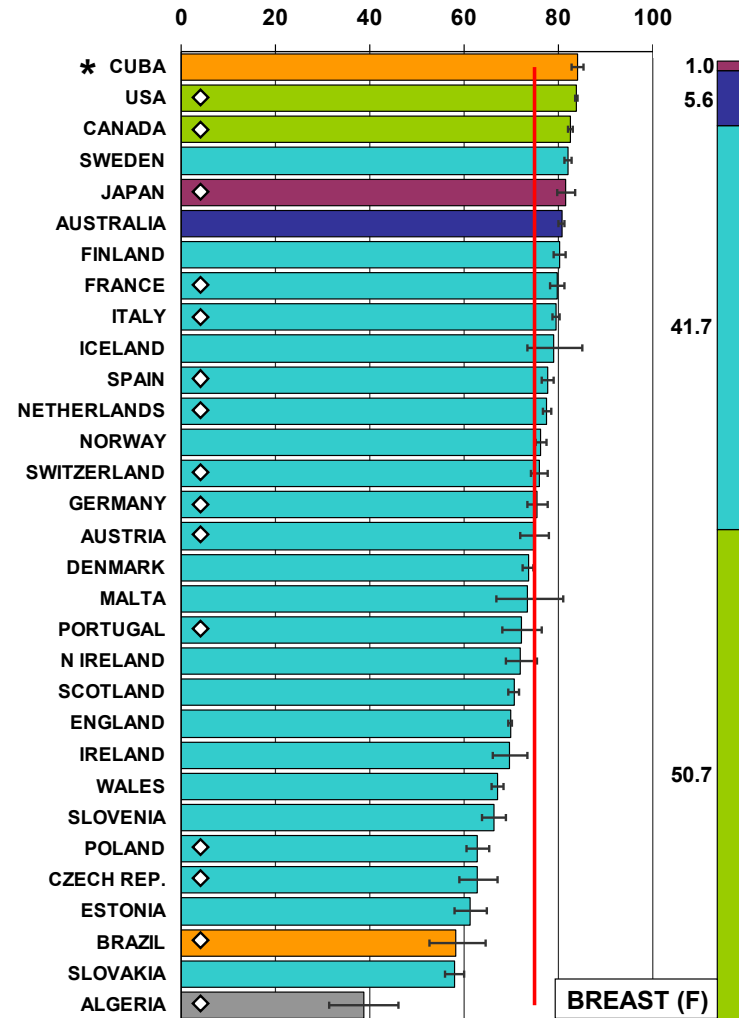
# 2. Comparability

## Comparisons between countries

Same methods and standards

Raise awareness on differences and inequalities

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



## 2. Comparability

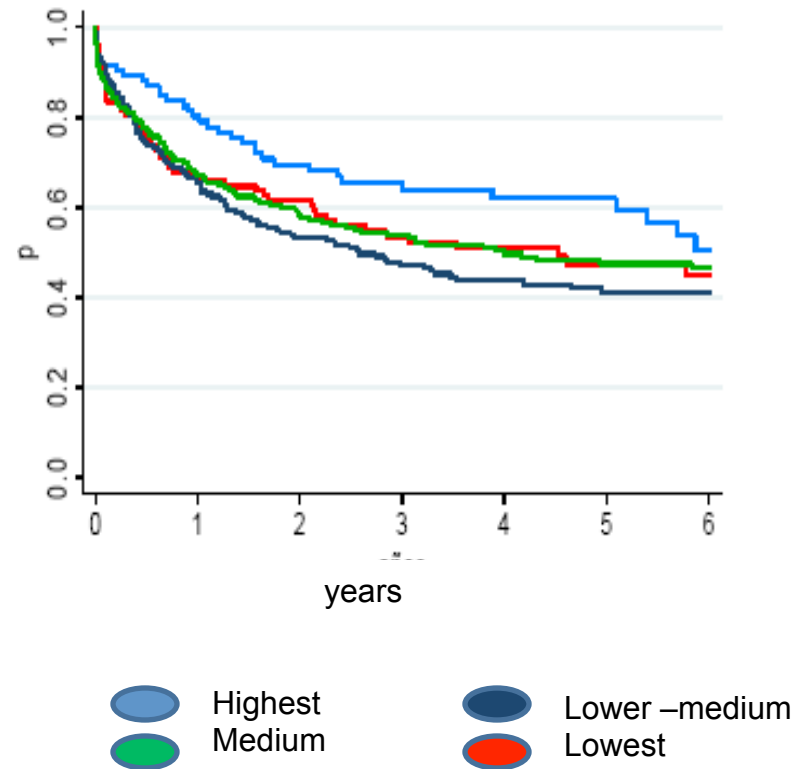
countries  
countries

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**Raise awareness on differences  
and inequalities**

Childhood

Childhood cancer survival by Socioeconomic  
Classification of Housing, Cali , Colombia  
1994-2003.



# 3. Visibility



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

*Michel P Coleman, Manuela Quaresma, Franco Berrino, Jean-Michel Lutz, Roberta De Angelis, Riccardo Capocaccia, Paolo Baili, Bernard Rachet, Gemma Gatta, Timo Hakulinen, Andrea Micheli, Milena Sant, Hannah K Weir, J Mark Elwood, Hideaki Tsukuma, Sergio Koifman, Gulnar Azevedo e Silva, Silvia Francisci, Mariano Santaquilani, Arduino Verdecchia, Hans H Storm, John L Young, and the CONCORD Working Group\**

### Summary

*Lancet Oncol* 2008; 9: 730–56

Published Online

July 17, 2008

DOI:10.1016/S1470-

2045(08)70179-7

\*Members of the CONCORD Working Group are listed in the webappendix

**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, by 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,

## Cancer survival in Africa, Asia, and Central America: a population-based study



*Rengaswamy Sankaranarayanan, Rajaraman Swaminathan, Hermann Brenner, Kexin Chen, Kee Seng Chia, Jian Guo Chen, Stephen CK Law, Yoon-Ok Ahn, Yong Bing Xiang, Balakrishna B Yeole, Hai Rim Shin, Viswanathan Shanta, Ze Hong Woo, Nimit Martin, Yupa Sumitsawan, Hutcha Sriplung, Adolfo Ortiz Barboza, Sultan Eser, Bhagwan M Nene, Kritika Suwanrungruang, Padmavathamma Jayalekshmi, Rajesh Dikshit, Henry Wabinga, Divina B Esteban, Adriano Laudico, Yasmin Bhurgri, Ebrima Bah, Nasser Al-Hamdan*

### Summary

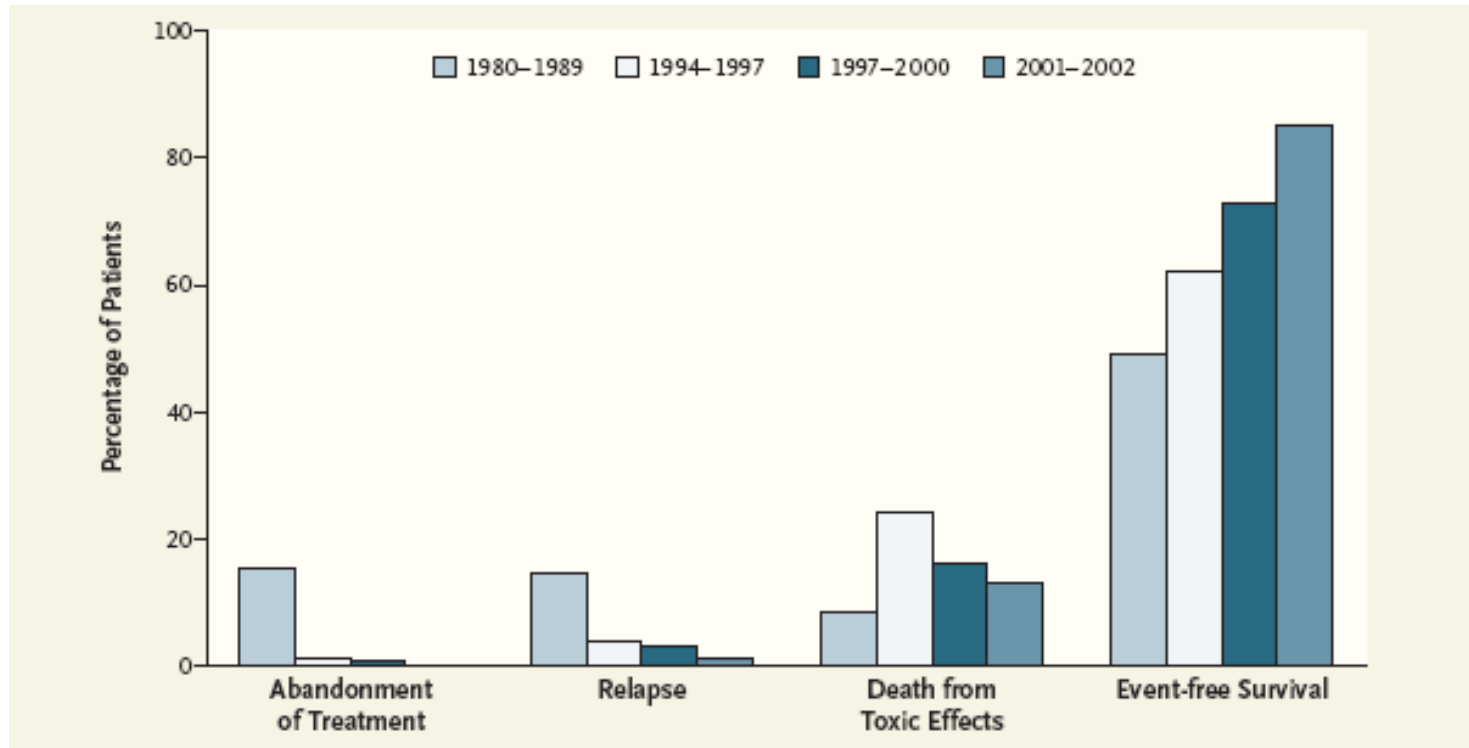
**Background** Population-based cancer survival data, a key indicator for monitoring progress against cancer, are not widely available from countries in Africa, Asia, and Central America. The aim of this study is to describe and discuss cancer survival in these regions.

*Lancet Oncol* 2010; 11: 165–73

Published Online

December 10, 2009

## 4. Monitoring progress in cancer control



Two-Year Event-free Survival Rates among Children with Acute Lymphoblastic Leukemia Treated in a Public Hospital in Recife, Brazil.

# CONCORD- 2 and information for LMIC

<b>World Bank</b>	<b>Registered*</b>		<b>Probable**</b>	
	<b>Countries</b>	<b>Registries</b>	<b>Countries</b>	<b>Registries</b>
Upper Middle	17	41	2	15
Lower Middle	3	3	1	5
Low	3	3	1	0
<b>LMIC</b>	<b>23</b>	<b>47</b>	<b>4</b>	<b>20</b>

Registered, August 2012  
Approved but not registered

# Final considerations

- **Survival as a tool for comprehensive cancer control plans**
  - Define strategies and plans
  - Evaluate strategies and plans
- **Survival as an outcome measure for the UN Summit on NCDs**