# SOUTH ASIA REGIONAL REPORT ON CANCER REGISTRATION AND CONTROL

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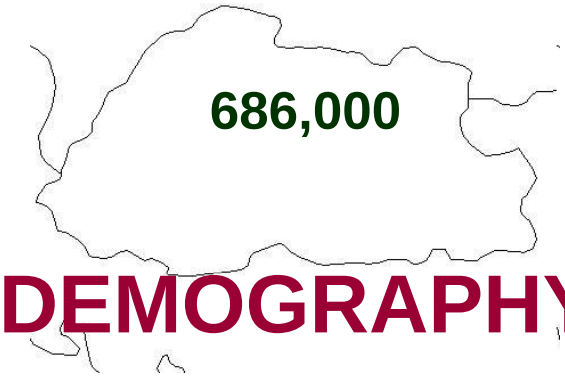
**Plenary lecture session**

**Asian-Pacific Regional Reports on Cancer in**
**4th International Cancer Control Congress, Seoul,**
**November 3-5, 2011**

Bangladesh

160,000,000



Bhutan

686,000

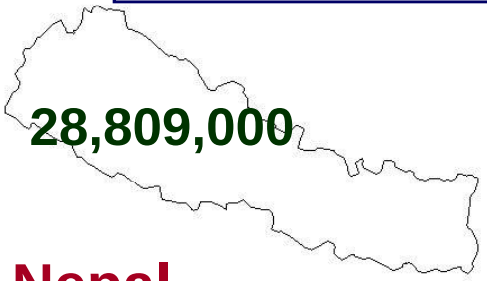
India

1,181,412,000

# DEMOGRAPHY

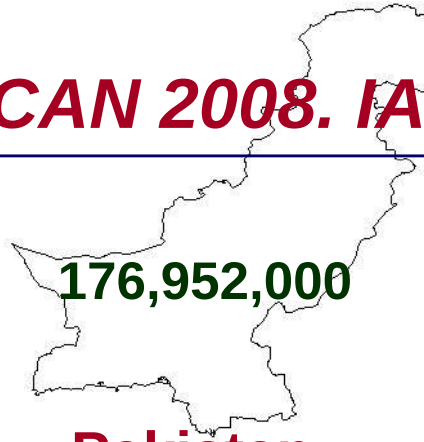
- Population at risk varied between <1 million in Bhutan to >1 billion in India
- Male-female ratio: India (0.935), Pakistan (0.942), Bangladesh (0.977), Bhutan (0.895); Nepal (1.013) and Sri Lanka (1.029)
- Calendar year of population estimation - 2008

*(Source: GLOBOCAN 2008. IARC, Lyon, 2010)*



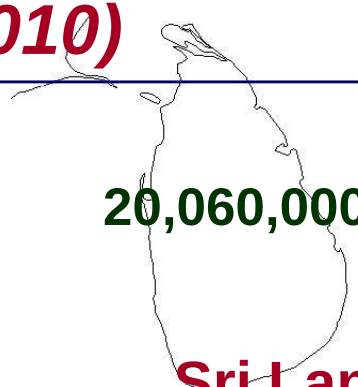
28,809,000

Nepal



176,952,000

Pakistan



20,060,000

Sri Lanka

# CANCER REGISTRIES provide vital leads to CANCER CONTROL through

## SITUATION ANALYSIS

- Cancer BURDEN
- Cancer PATTERN
- Cancer SURVIVAL

Population based cancer registration is a *sine qua non* for any planned cancer control programme

This is achieved through Population based cancer registries

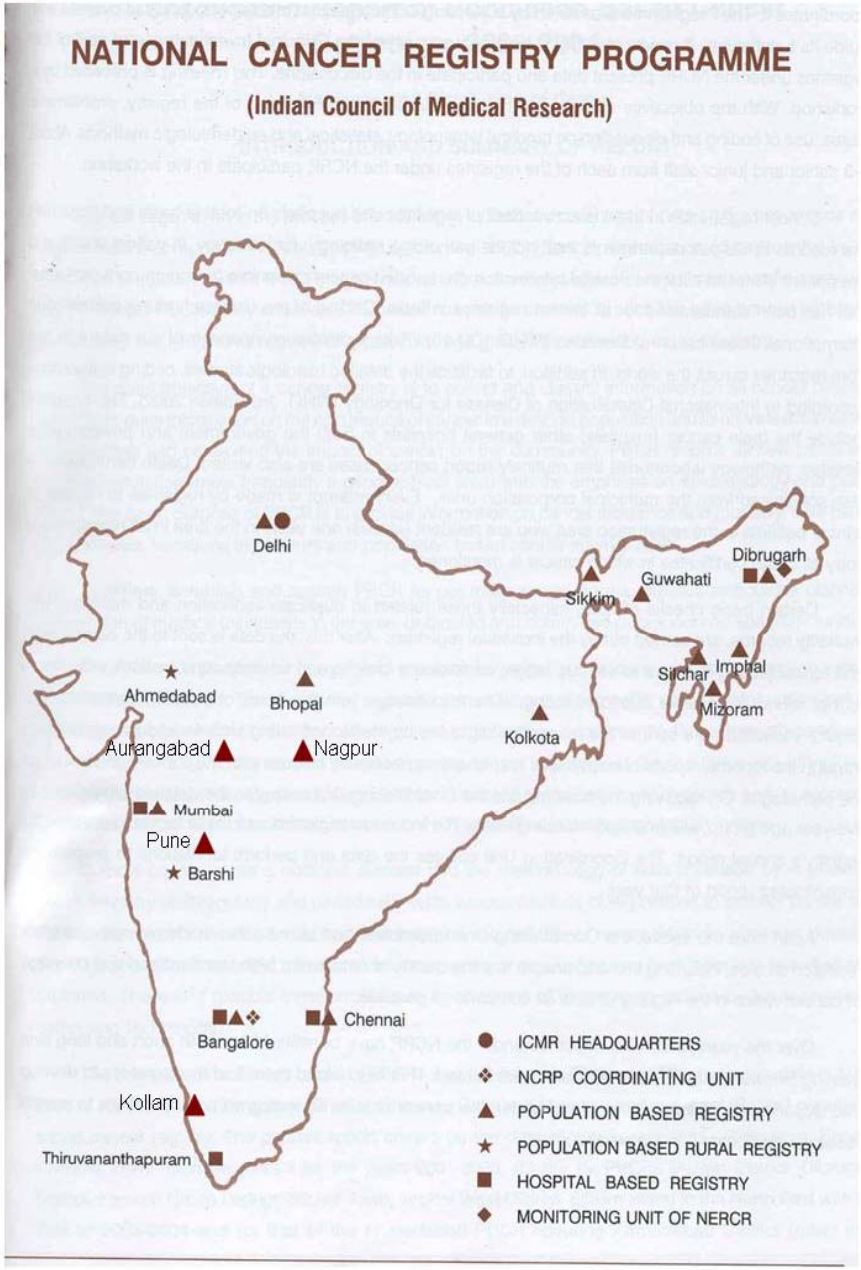
# SOURCE OF DATA – GLOBAL CANCER STATISTICS

International Agency for Research on Cancer (IARC)

Centre International de Recherche sur le Cancer (CIRC)


- **A quinquennial publication by IARC, France**
- **58 countries; 219 PBCRs**
- **Available in the form of book and CD**
- **Data on cancer incidence by country, registry, age, gender**

# Source of cancer incidence data in India




**There are 26 Population Based Cancer Registries in India, initiated all over India at different times since 1963**

**Population covered by PBCRs is only 7.5% of total population**

**Predominantly urban based & systematic registration of cases done by active method**

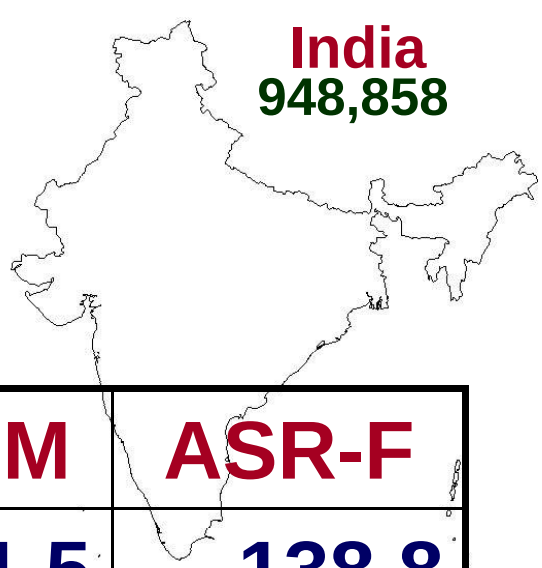
# GLOBAL INCIDENCE AND BURDEN OF CANCER
## Estimates for 2008 AD

| | Male | Female | M+F |
|---|---|---|---|
| **WORLD**<br>Incidence rate/100,000<br>New cancer cases | <br>194.5<br>6,618,000 | <br>180.6<br>6,045,000 | <br>187.6<br>12,663,000 |
| **More developed regions**<br>Incidence rate /100,000<br>New cancer cases | <br>496.2<br>2,964,000 | <br>409.5<br>2,591,000 | <br>451.6<br>5,555,000 |
| **Less developed regions**<br>Incidence rate /100,000<br>New cancer cases | <br>130.2<br>3,654,000 | <br>127.2<br>3,453,000 | <br>128.8<br>7,107,000 |

- 56% of 12.7 million new cancer cases in the world lives in medium to low resource countries
- Incidence is higher in more developed countries than less developed countries

Male preponderance is forthcoming



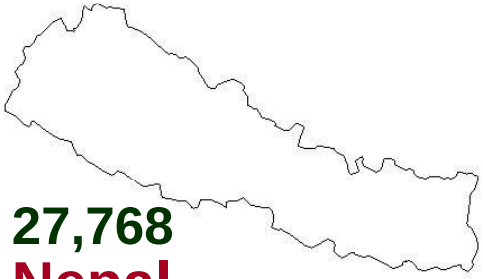


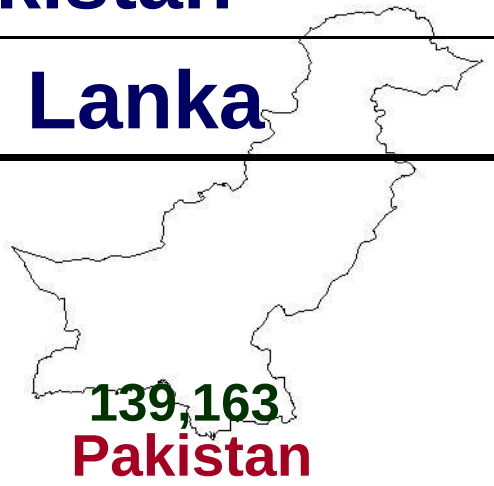

# CANCER INCIDENCE STATISTICS

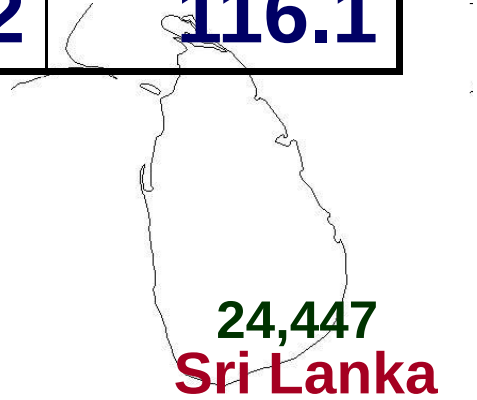
**Globocan 2008**

**Female preponderance**

| Country | ASR-M | ASR-F |
|---|---|---|
| Bangladesh | 111.5 | 138.8 |
| Bhutan | 124.8 | 130.5 |
| India | 92.9 | 105.5 |
| Nepal | 127.5 | 154.2 |
| Pakistan | 106.5 | 123.4 |
| Sri Lanka | 107.2 | 116.1 |



# Top five cancers among men by country

| BANGLADESH | | BHUTAN | | INDIA | |
|---|---|---|---|---|---|
| Site | ASR | Site | ASR | Site | ASR |
| Lung | 30.4 | Stomach | 31.6 | Lung | 10.9 |
| Oral cavity | 9.6 | Oesophagus | 10.4 | Oral cavity | 9.8 |
| Oesophagus | 8.0 | Large bowel | 7.9 | Other pharynx | 8.3 |
| Other pharynx | 6.5 | Lung | 8.7 | Oesophagus | 6.5 |
| Stomach | 5.9 | Liver | 8.1 | Stomach | 4.7 |

| NEPAL | | PAKISTAN | | SRI LANKA | |
|---|---|---|---|---|---|
| Site | ASR | Site | ASR | Site | ASR |
| Lung | 20.7 | Lung | 12.3 | Oral cavity | 16.5 |
| Oral cavity | 10.2 | Oral cavity | 11.0 | Lung | 12.0 |
| Stomach | 10.2 | Stomach | 8.0 | Oesophagus | 9.1 |
| Leukemia | 5.9 | Other pharynx | 6.4 | Large bowel | 7.5 |
| NHL | 5.7 | Oesophagus | 6.2 | Leukemia | 6.9 |

*GLOBOCAN 2008*

**Lung and oral cancers are the commonest in most countries**

# Top five cancers among women by country

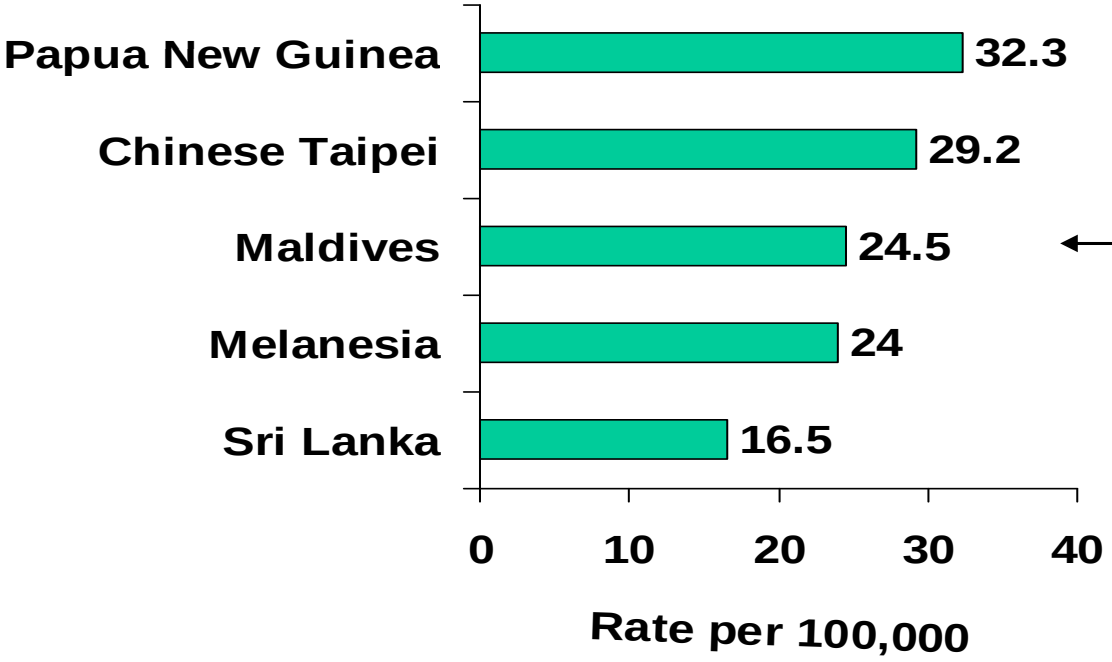
| BANGLADESH | | BHUTAN | | INDIA | |
|---|---|---|---|---|---|
| Site | ASR | Site | ASR | Site | ASR |
| Breast | 27.2 | Cervix | 20.4 | Cervix | 27.0 |
| Cervix | 29.8 | Stomach | 16.2 | Breast | 22.9 |
| Oral cavity | 9.9 | Lung | 10.8 | Ovary | 5.7 |
| Lung | 8.7 | Oesophagus | 9.4 | Oral cavity | 5.2 |
| Oesophagus | 7.5 | Ovary | 8.5 | Oesophagus | 4.2 |

| NEPAL | | PAKISTAN | | SRI LANKA | |
|---|---|---|---|---|---|
| Site | ASR | Site | ASR | Site | ASR |
| Cervix | 32.4 | Breast | 31.5 | Breast | 29.1 |
| Breast | 23.5 | Cervix | 19.5 | Cervix | 11.8 |
| Lung | 18.2 | Oral cavity | 8.6 | Ovary | 9.4 |
| Ovary | 10.0 | Ovary | 5.8 | Thyroid | 9.3 |
| Gall bladder | 8.6 | Oesophagus | 5.7 | Oesophagus | 8.6 |

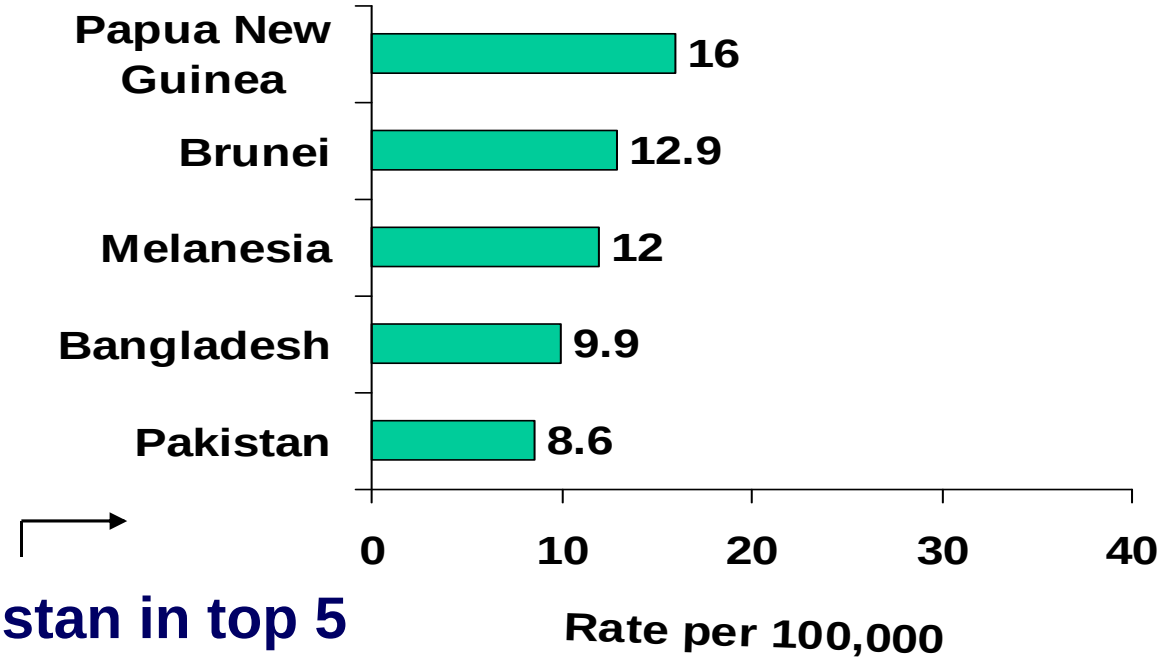
*GLOBOCAN 2008*

**Cervix and breast are at the top constituting 35-47% of all cancers**

# INCIDENCE OF ORAL CANCER, global, Year 2008

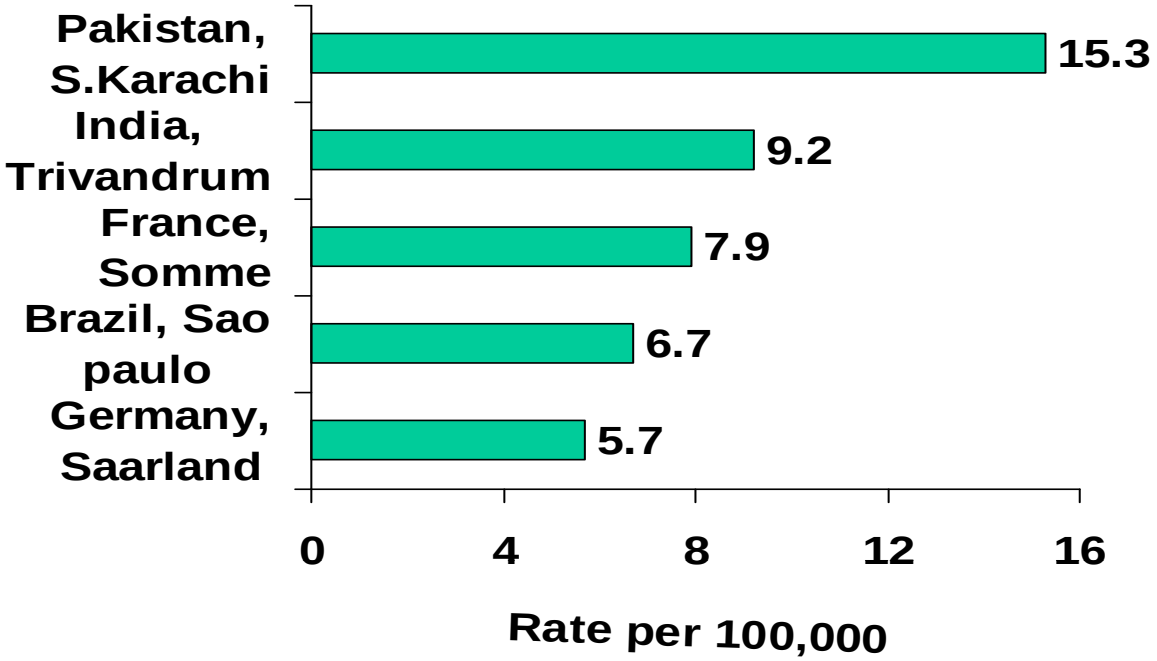



Male – Sri Lanka ranks 5th



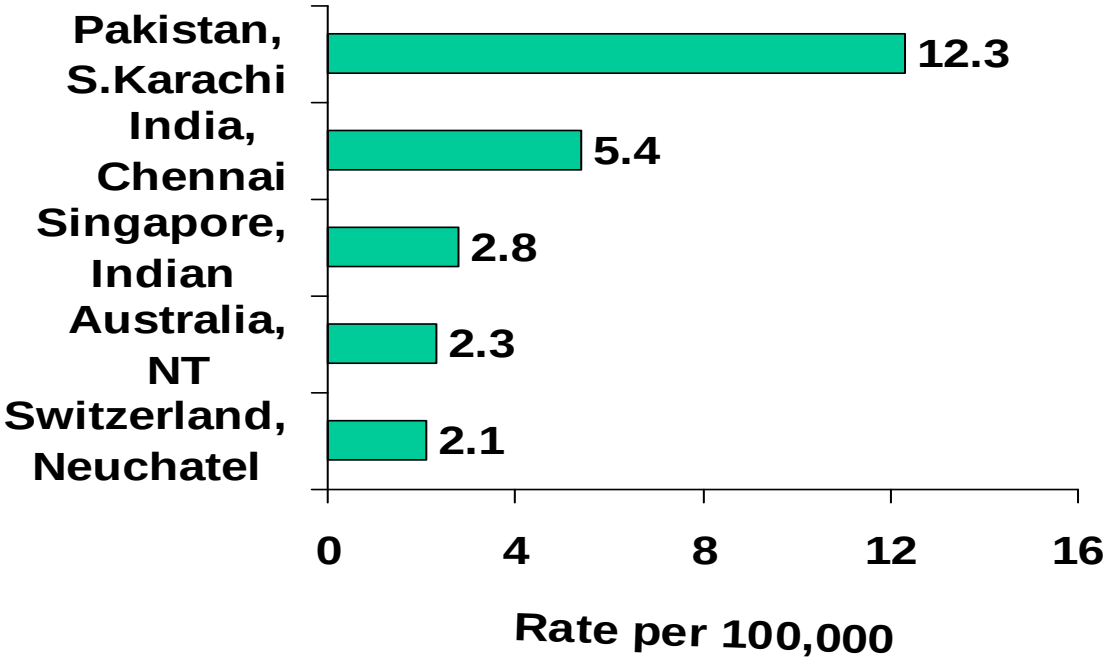

Female – Bangladesh and Pakistan in top 5

# INCIDENCE OF ORAL CANCER by SUBSITE, global, Year 2000

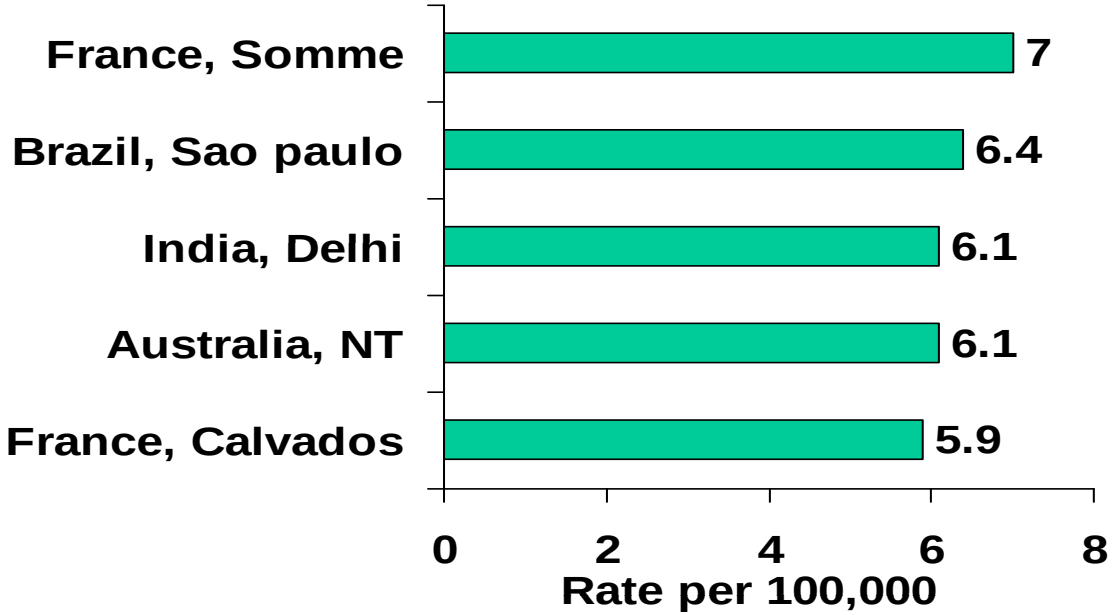



## Mouth, Male

## Mouth, Female

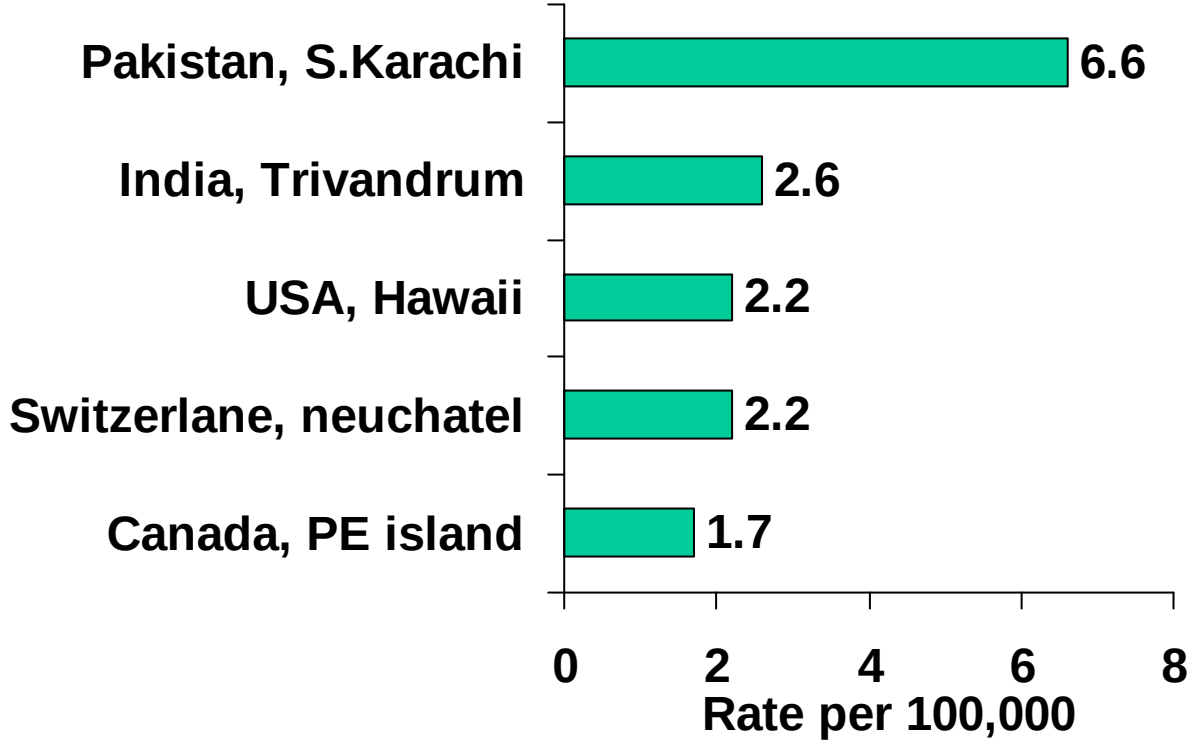


# INCIDENCE OF ORAL CANCER SUBSITE, global, Year 2000




## Tongue, Male

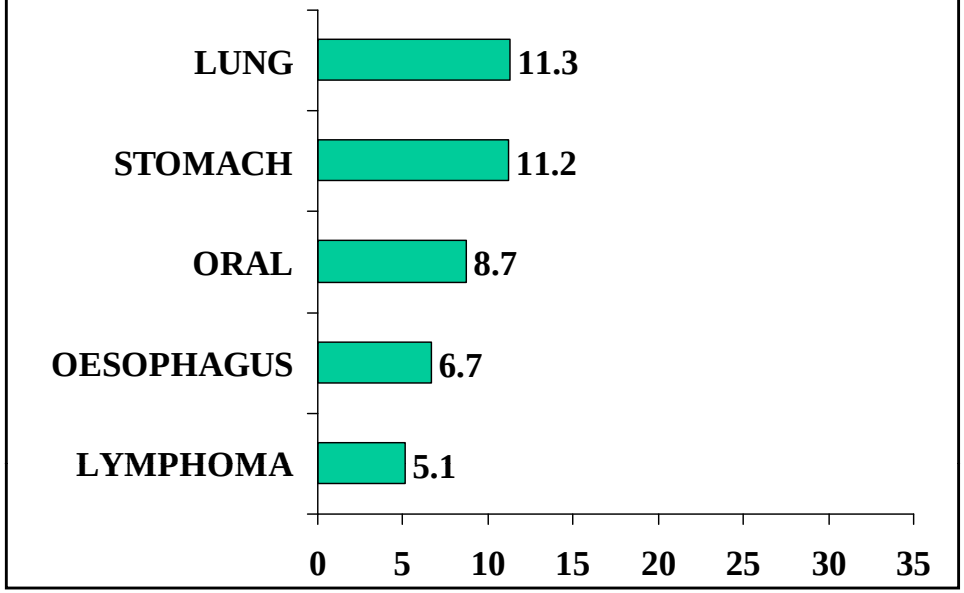
## Tongue, Female



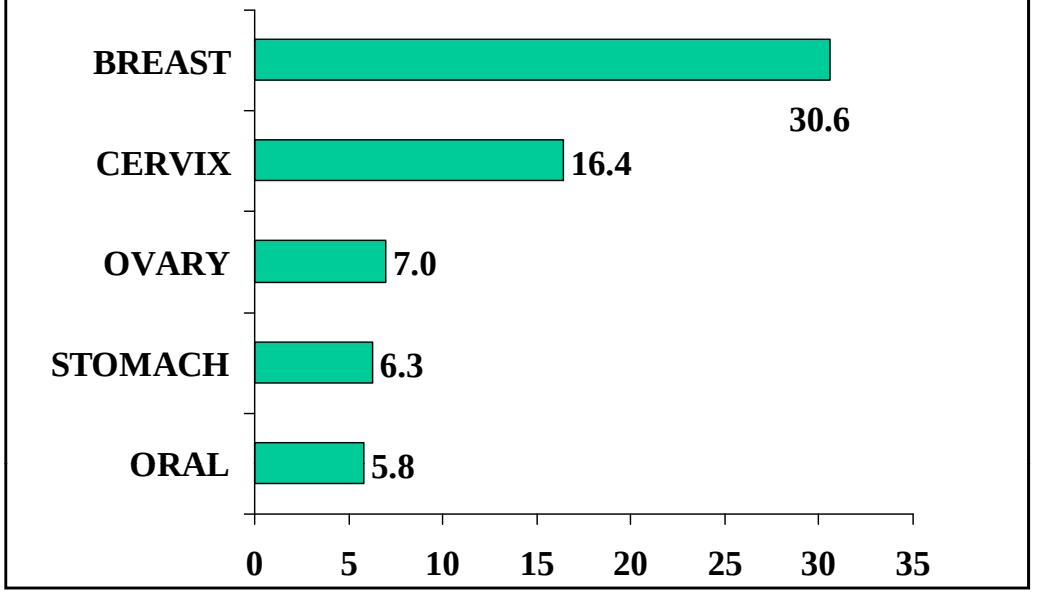
# VARIABLE CANCER PATTERN – URBAN & RURAL SOUTH INDIA, 2008

*(Rates are per 100,000 population)*

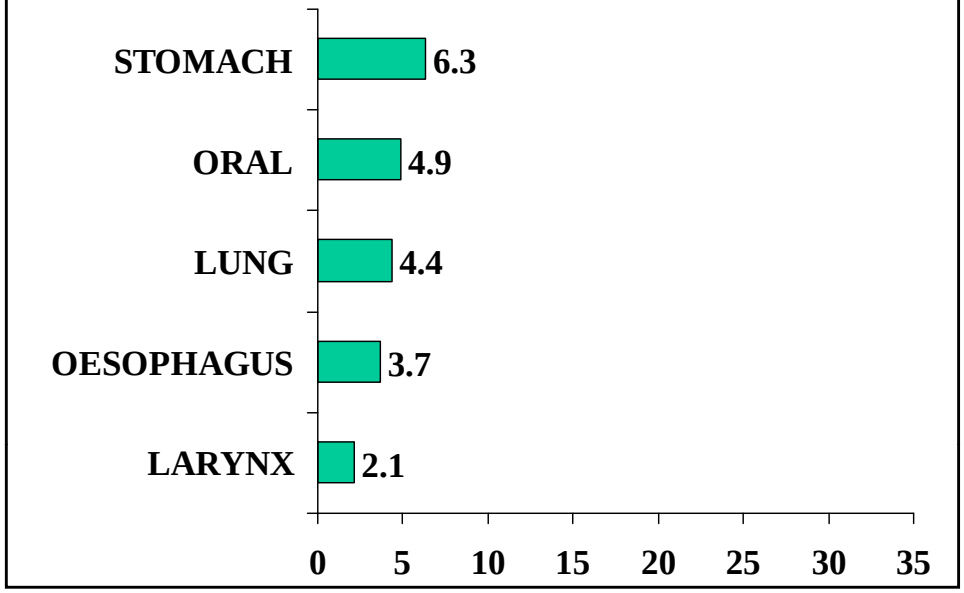
## Chennai, Urban, MALE: All cancers: 105.0



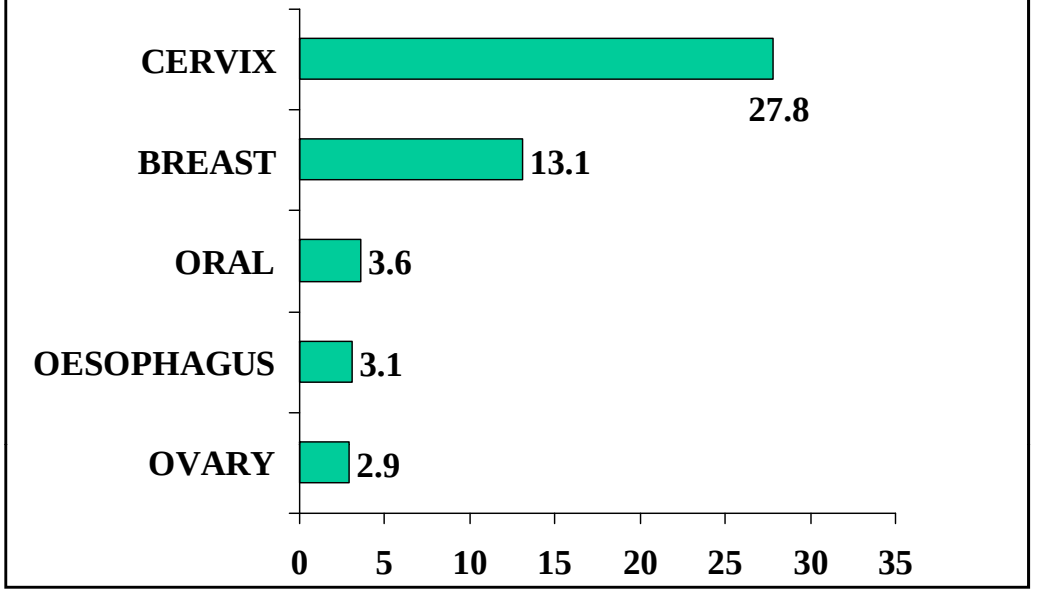

## Chennai, Urban, FEMALE: All cancers: 114.0




## Dindigul, Rural, MALE: All cancers: 54.6




## Dindigul, Rural, FEMALE: All cancers: 70.0

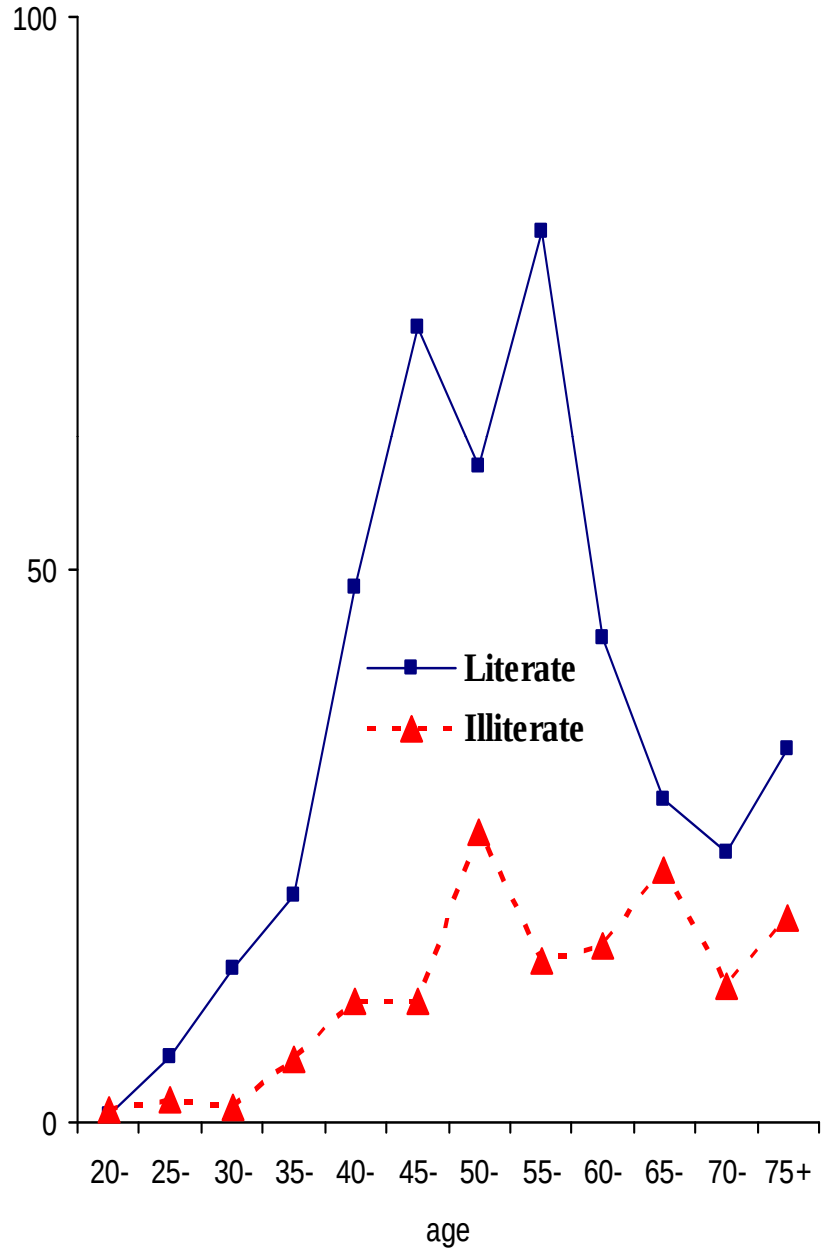


## Education specific age-standardized rate (ASR) and standardized rate ratio (SRR): breast vs. cervix cancers, Dindigul district, 2003-06

| Education level | Cancer breast | | |
|---|---|---|---|
| | ASR | SRR# | 95% CI |
| **Education** | | | |
| Nil | 8.5 | 1.00$ | - |
| ≤5 years | 20.4 | 2.40 | 1.8, 3.2 |
| 6-12 years | 42.6 | 5.01 | 3.2, 7.7 |
| >12 years | 51.7 | 6.08 | 1.8, 20.5 |

**A 6-fold increased risk of breast cancer was observed in women with college level of education compared to illiterates; increasing trend in risk with increasing literacy was significant**

## Age-specific incidence by literacy status, Dindigul district, 2003-06

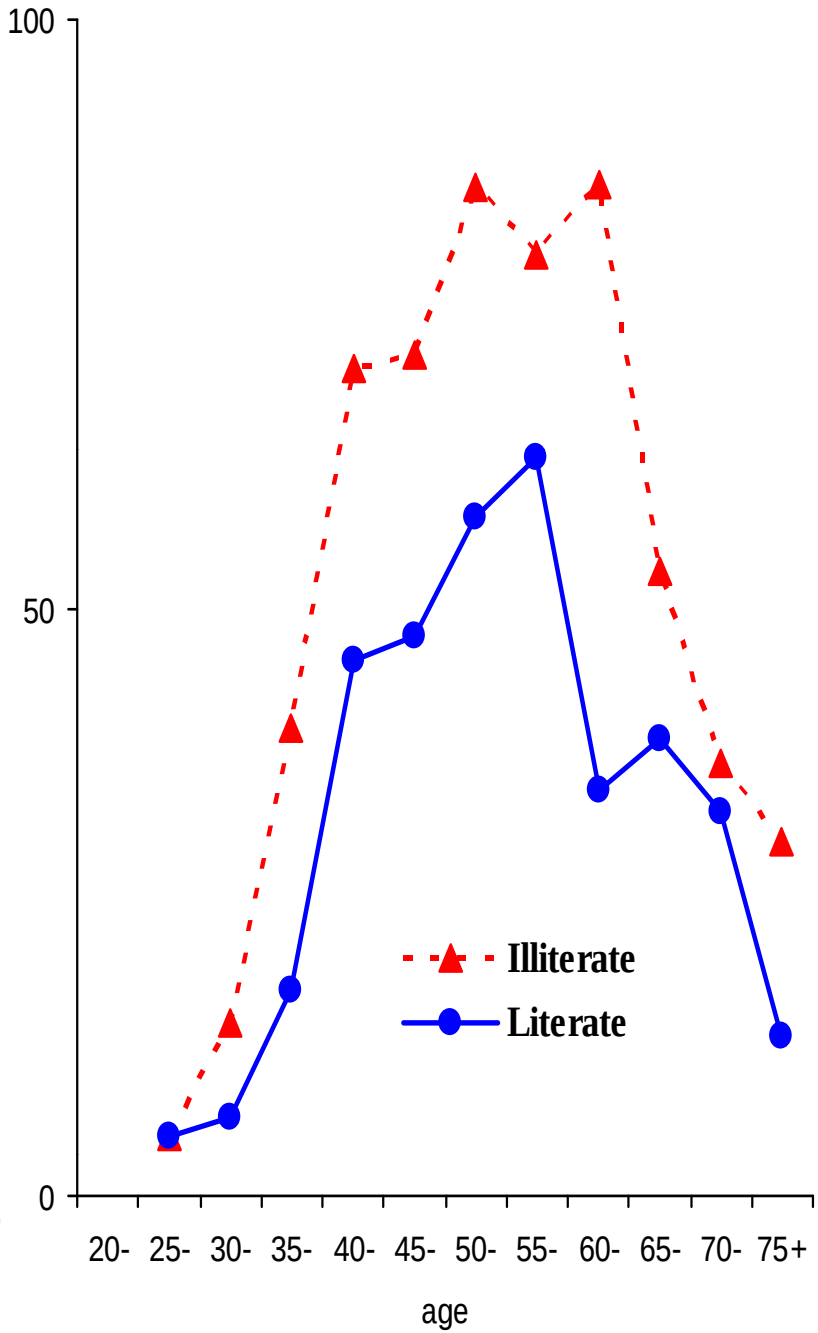


## Education specific age-standardized rate (ASR) and standardized rate ratio (SRR) of cervical cancer, Dindigul district, 2003-06

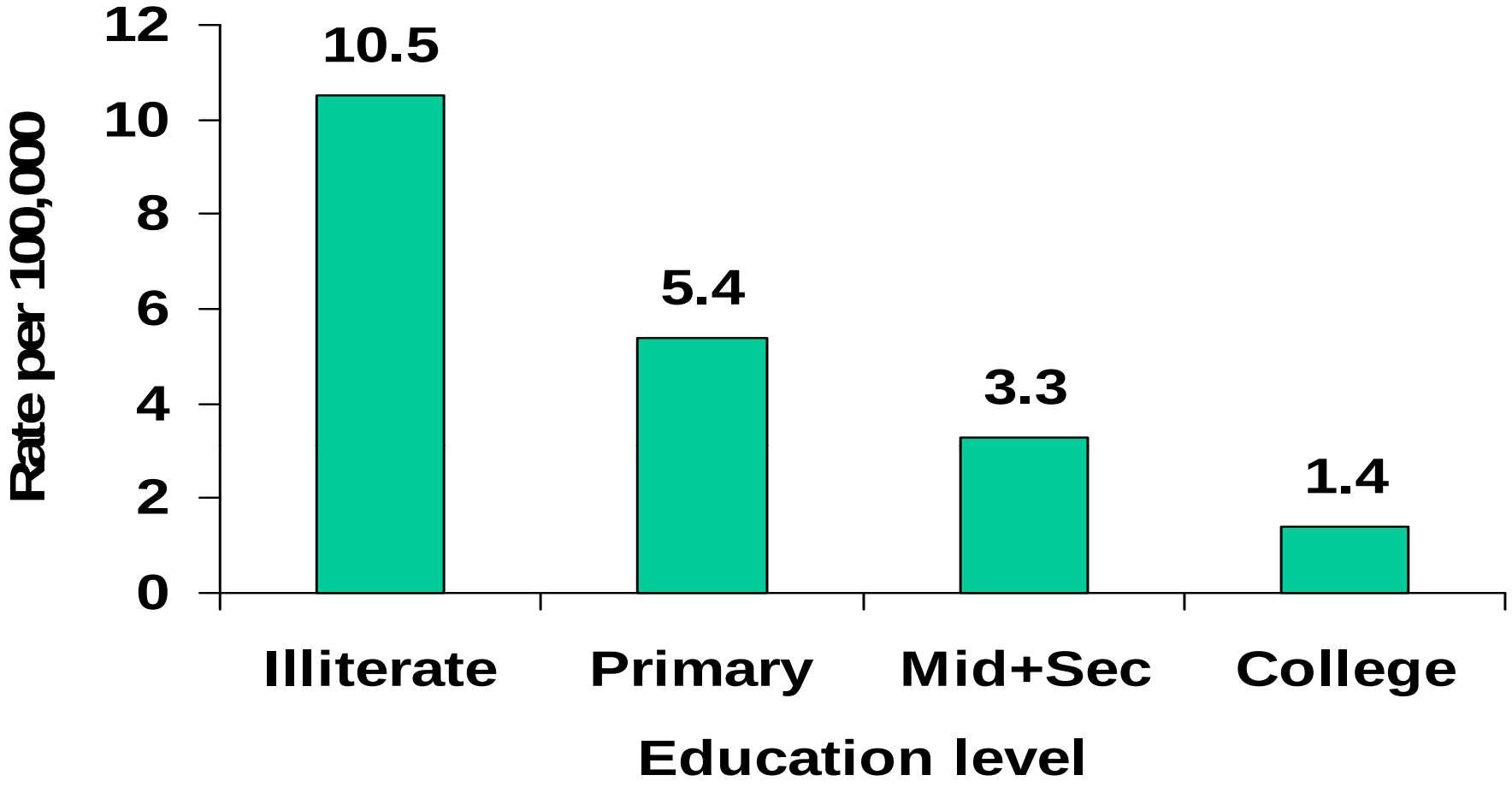
| Education level | Cancer cervix | | |
|---|---|---|---|
| | ASR | SRR# | 95% CI |
| **Education** | | | |
| Nil | 37.7 | 1.00 | - |
| ≤5 years | 21.5 | 0.57 | 0.48, 0.69 |
| 6-12 years | 23.1 | 0.61 | 0.49, 0.77 |
| >12 years | 11.9 | 0.32 | 0.19, 0.52 |

**A 68% reduced risk of cervical cancer was observed in women with college level of education compared to illiterates; decreasing trend in risk with increasing literacy was significant**

## Age-specific incidence by literacy status, Dindigul district, 2003-06



# INCIDENCE OF ORAL CANCER BY EDUCATION LEVEL CHENNAI, INDIA, 1998-2004

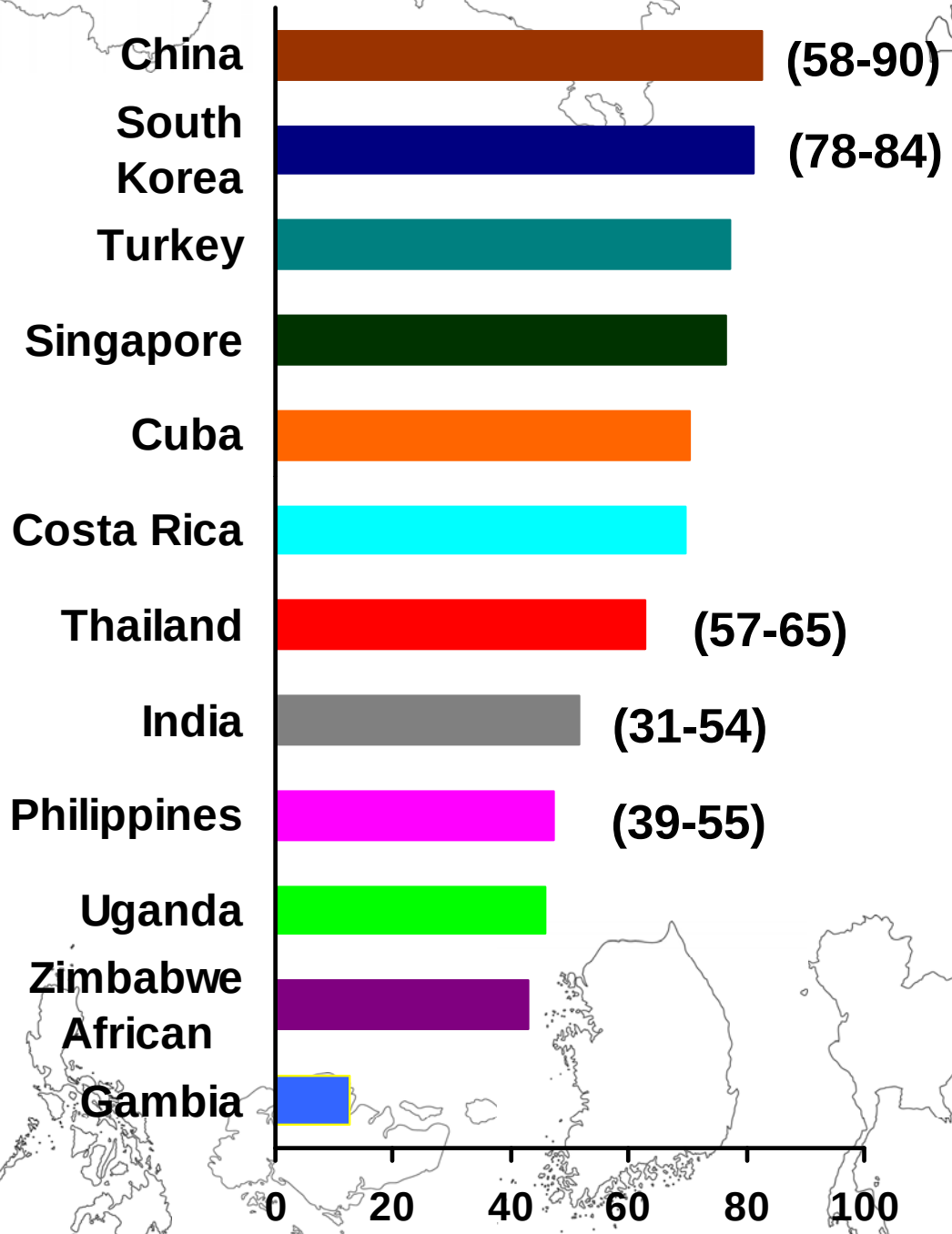



**An inverse relationship between socio-economic status and oral cancer incidence is forthcoming**

**Incidence ↓ as education level ↑**

**This suggests an association between lifestyle factors and oral cancer incidence**

# 5-Year Age Standardised Relative Survival (0-74 yrs)




**Breast Cancer (ICD-10:C50)**

- Highest in Hong Kong SAR, China
- Lowest in Gambia

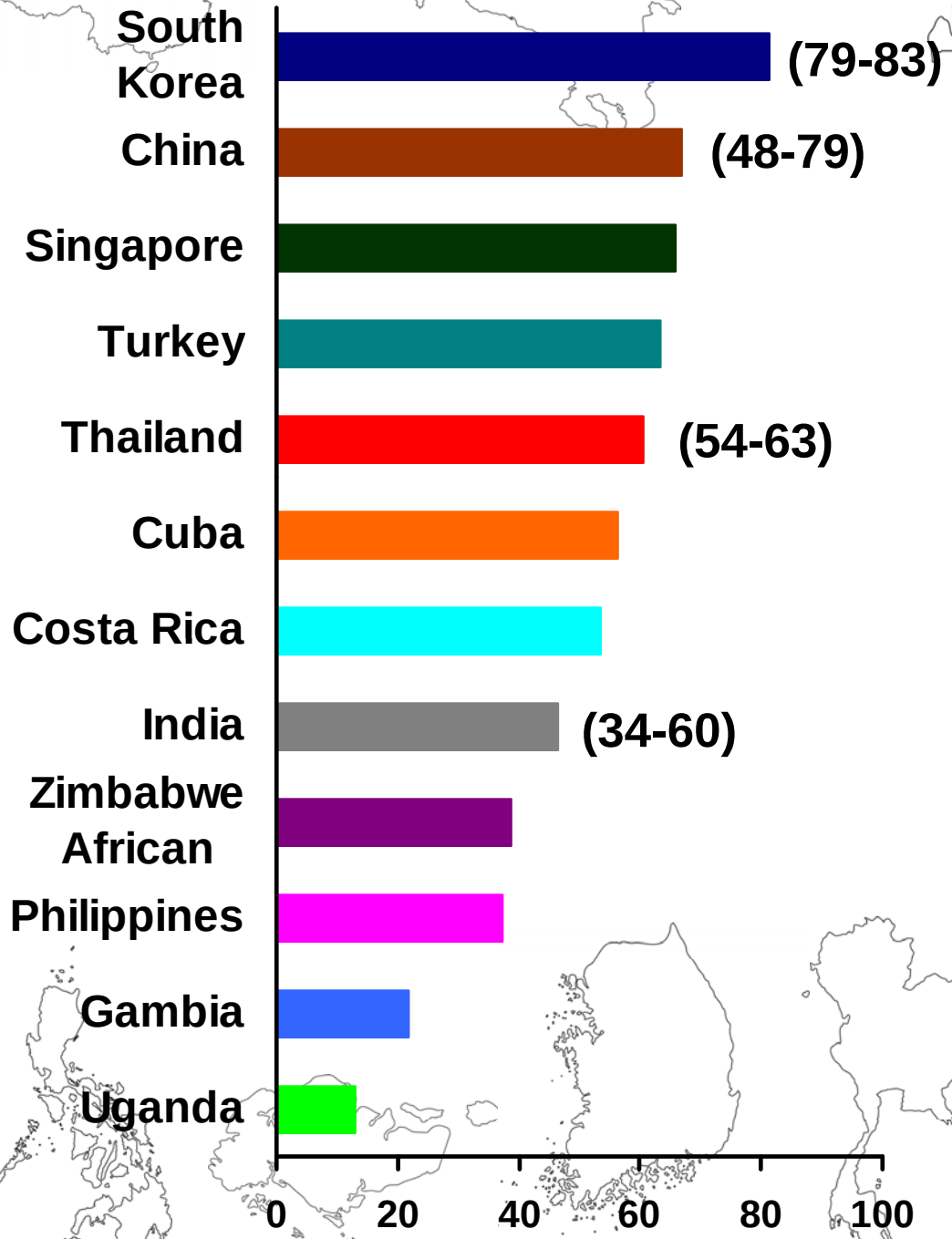
**Intra country variation**

- Pronounced in India (among urban); China & Philippines (urban ↑ and rural ↓)
- No difference in South Korea & Thailand

**Data from developed countries**

- US-SEER: 89%
- Eurocare3: 76%

# 5-Year Age Standardised Relative Survival (0-74 yrs)




**Cervix Cancer (ICD-10:C53)**

- Highest in Seoul, South Korea
- Lowest in Kampala, Uganda

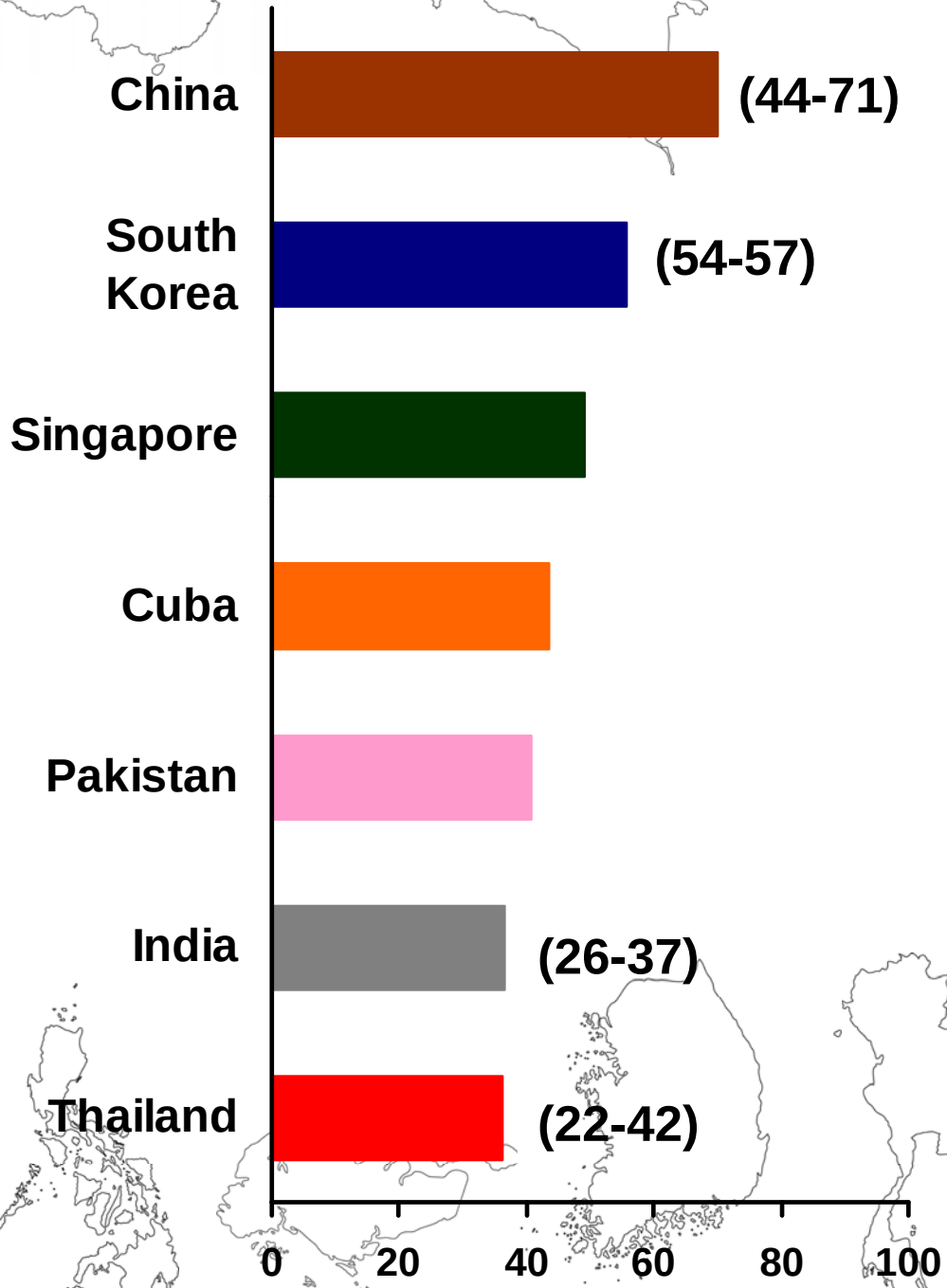
**Intra country variation**

- Pronounced in China (urban ↑ vs rural ↓) & India
- No difference in South Korea & Thailand

**Data from developed countries**

- US-SEER: 70%
- Eurocare3: 62%

# 5-Year Age Standardised Relative Survival (0-74 yrs)




**Oral Cancer (ICD-10:C03-6)**

- Highest in Shanghai, China
- Lowest in Chiang Mai, Thailand

**Intra country variation**

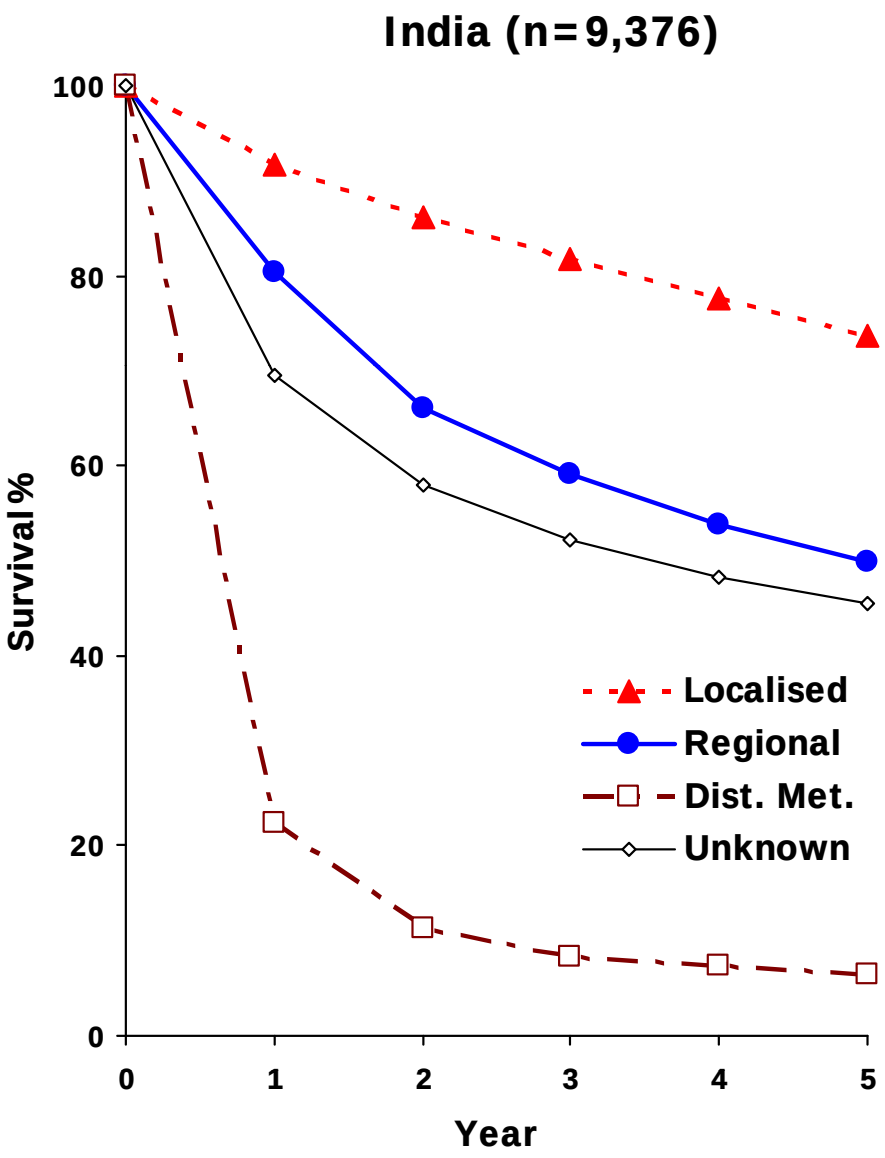
- Pronounced in China (urban ↑ vs rural ↓) & Thailand
- No difference in India & South Korea

**Data from developed countries**

- US-SEER: 52-59%
- Eurocare3: 45%

# Average survival, Cervix cancer by stage, India, 1990-99

## Pooled data from Chennai, Mumbai, Bhopal, Barshi (rural Maharashtra) and Karunagappally (rural Kerala) PBCRs




| | Loc. | Reg. | Dist. Met. | Unk. |
|---|---|---|---|---|
| % cases | 17.5 | 71.2 | 6.0 | 5.3 |

## Early stage cancer

- 75-80% of cases have survived at least 5 years after diagnosis

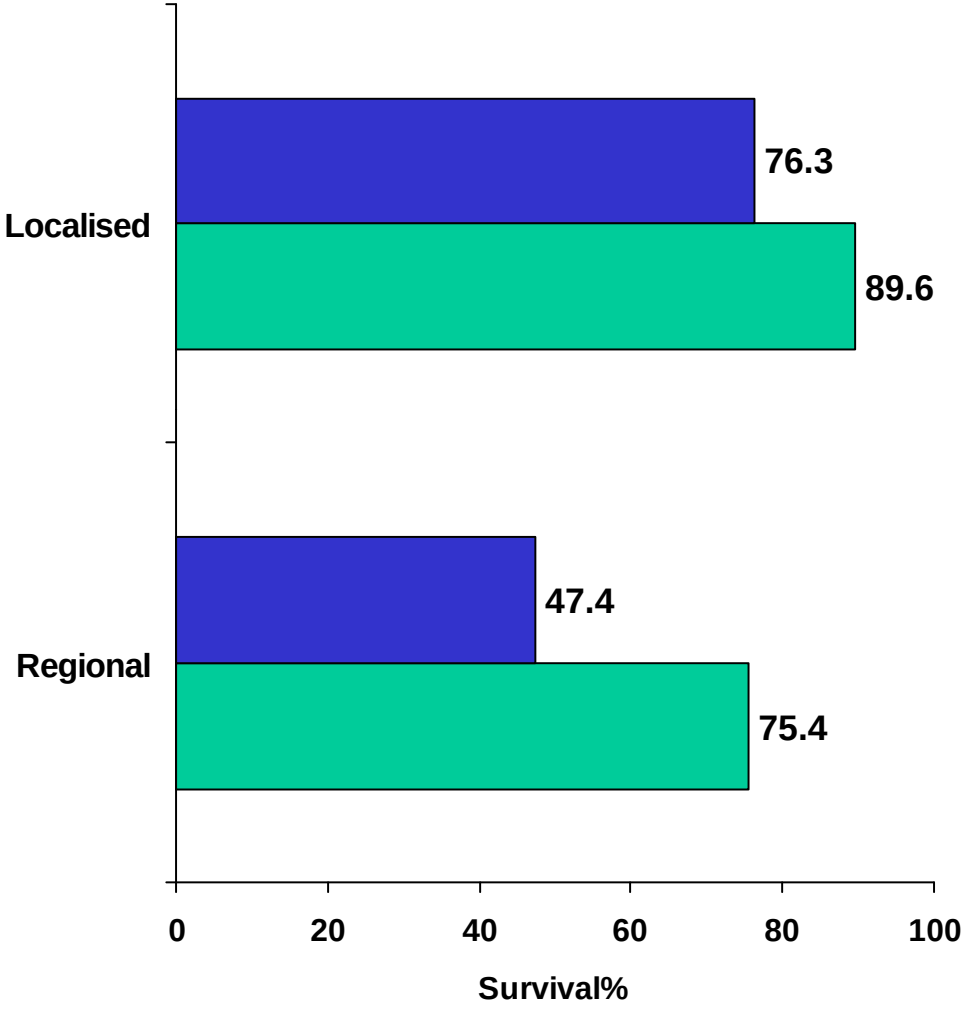
## Locally advanced cancer

- 45-50% of cases have survived at least 5 years after diagnosis

## Disease stage at diagnosis

- Early stage 17.5% compared to 71% in locally advanced stage

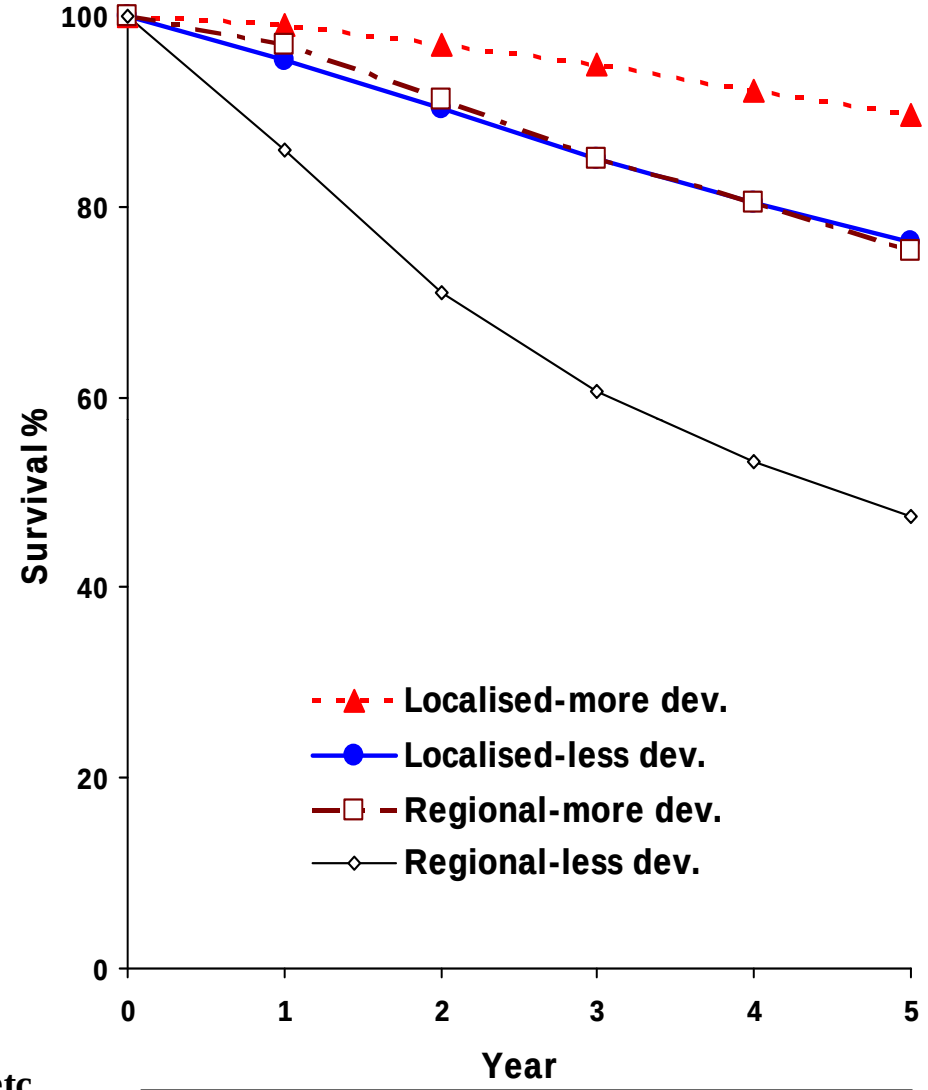
## Fig. 5: 5-year absolute survival for localised and regional extent of disease among more and less developed health services – Breast cancer




Less devloped health services-Thailand, India, Costa Rica, etc.

More devloped health services (Singapore & Turkey)

## Absolute survival for localised and regional extent of disease among more and less developed health services - Breast cancer




| | More dev. | | Less dev. | |
|---|---|---|---|---|
| | Loc. | Reg. | Loc. | Reg |
| % cases | 17.0 | 32.0 | 26.0 | 47.0 |

# Action Plan required

- Cancer should be declared a notifiable disease
    - to facilitate systematic data collection of population-based incident cancer cases
    - to achieve larger coverage of populations at low cost
- Active surveillance wherever needed for data quality
- Evolving specific strategies
    - for primary prevention of tobacco related cancers
    - for secondary prevention of cervical and breast cancers
    - opportunistic or population-based