Cancer Incidence in Latin America: An Overview

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Cancer Incidence in 11% world population

International Agency for Research on Cancer

World Health Organization
Introduction

- Total population in 2006 (including Caribbean): 526 millions.

- 11 population-based cancer registries covering approximately 4.3% of population.

- Demographic transition, ageing of populations.

- Rapid industrialization and adoption of westernized lifestyles.

- A region marked by socio-economic inequalities.
### Geographical Coverage CI5 IX

<table>
<thead>
<tr>
<th>Country</th>
<th>Registries</th>
<th>Total country population 2000* (thousands)</th>
<th>% of urban population**</th>
<th>Population coverage CI5 IX(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low-middle-income countries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colombia</td>
<td>Cali</td>
<td>41,683</td>
<td>74.9</td>
<td>4.4</td>
</tr>
<tr>
<td>Ecuador</td>
<td>Quito</td>
<td>12,306</td>
<td>61.4</td>
<td>11.5</td>
</tr>
<tr>
<td>Peru</td>
<td>Trujillo</td>
<td>25,663</td>
<td>72.8</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Upper-middle-income countries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>Bahia Blanca</td>
<td>36,896</td>
<td>90.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Brazil</td>
<td>Goiania, Sao Paulo, Brasilia, Cuiaba</td>
<td>174,161</td>
<td>81.2</td>
<td>7.6</td>
</tr>
<tr>
<td>Chile</td>
<td>Valdivia</td>
<td>15,412</td>
<td>86.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>National</td>
<td>3,929</td>
<td>59.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>High-income countries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>Martinique</td>
<td>386</td>
<td>95***</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total Latin America</strong></td>
<td></td>
<td></td>
<td></td>
<td>4.3</td>
</tr>
</tbody>
</table>


Introduction

Latin America: cities with 20,000 or more inhabitants, 1950 and 2000 census rounds.

Source: DEPUALC 2004 data base, CELADE/ECLAC.

Note: The limits shown on this map do not imply any expression of support or official acceptance by the United Nations.
Introduction

Cancer incidence reflects:

- Changes in life expectancy and age distribution of population structure.
- Inequalities in economic development.
- Socio-economic factors.
Cancer Incidence

Cancer incidence reflects:

• Demographic and epidemiological transition
• Increase the incidence of chronic and non-communicable diseases.
• Changes in lifestyle and dietary patterns
• Infectious risk factors.
## Results

Table 1. Incidence of all cancer (but skin) and data quality indexes.

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Person-years (million)</td>
<td>Cases (n)</td>
</tr>
<tr>
<td>Argentina, Bahia Blanca</td>
<td>0.7</td>
<td>2,201</td>
</tr>
<tr>
<td>Brazil, Brasilia</td>
<td>4.3</td>
<td>6,732</td>
</tr>
<tr>
<td>Brazil, Cuiaba</td>
<td>1.1</td>
<td>1,605</td>
</tr>
<tr>
<td>Brazil, Goiania</td>
<td>2.1</td>
<td>3,592</td>
</tr>
<tr>
<td>Brazil, Sao Paulo</td>
<td>24.8</td>
<td>70,229</td>
</tr>
<tr>
<td>Chile, Valdivia</td>
<td>0.9</td>
<td>2,040</td>
</tr>
<tr>
<td>Colombia, Cali</td>
<td>4.3</td>
<td>7,766</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>10.0</td>
<td>13,656</td>
</tr>
<tr>
<td>Ecuador, Quito</td>
<td>3.4</td>
<td>4,194</td>
</tr>
<tr>
<td>France, La Martinique*</td>
<td>0.9</td>
<td>3,610</td>
</tr>
<tr>
<td>Peru, Trujillo</td>
<td>1.4</td>
<td>1,256</td>
</tr>
</tbody>
</table>

* French registries do not have access to death certificates.
Introduction

It is necessary to enhance cancer registration in Latin America:

- Little information available over the past 10 years on the burden of malignant neoplasias.
- Diversity of populations and risk factors between and within countries.
- To identify risk factors in carcinogenesis.
- To better target populations at risk with cancer control programs.
- To evaluate public policies and cancer control activities.
## Introduction

### 60 years or older subjects, for selected Latin American countries

<table>
<thead>
<tr>
<th>Country</th>
<th>n(%)</th>
<th>n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1975</td>
<td>2000</td>
</tr>
<tr>
<td>Argentina</td>
<td>2,971,006 (11.4)</td>
<td>4,936,397 (13.3)</td>
</tr>
<tr>
<td>Brazil</td>
<td>6,541,030 (6)</td>
<td>1,3405,489 (7.9)</td>
</tr>
<tr>
<td>Chile</td>
<td>814,176 (7.9)</td>
<td>1,550,283 (10.2)</td>
</tr>
<tr>
<td>Colombia</td>
<td>1,420,270 (5.6)</td>
<td>2,900,766 (6.9)</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>102,771 (5.2)</td>
<td>299,939 (7.5)</td>
</tr>
<tr>
<td>Ecuador</td>
<td>422,401 (6.1)</td>
<td>876,109 (6.9)</td>
</tr>
<tr>
<td>Peru</td>
<td>843,213 (5.6)</td>
<td>1,856,469 (7.2)</td>
</tr>
<tr>
<td>Martinique</td>
<td>30,698 (9.3)</td>
<td>57,472 (15.0)</td>
</tr>
<tr>
<td><strong>Latin America and Caribbean</strong></td>
<td><strong>20,959,116 (6.5)</strong></td>
<td><strong>41,299,673 (8.0)</strong></td>
</tr>
</tbody>
</table>

*Fuente:* Elaboración previa basada en estimaciones y proyecciones de los países, CELADE. Boletín Demográfico No. 62

United Nations, World Population Prospects the 2000 Revisión
Brazil, Sao Paulo

1978

1998-2002
Results

Most common cancers in Latin America, all registries pooled.

10 most common cancers, males

- Prostate: 73.1
- Stomach: 28.5
- Lung: 24.7
- Colon and rectum: 22.9
- Non-Hodgkin lymphoma: 9.6
- Larynx: 8.7
- Oesophagus: 8.4
- Mouth and tongue: 8.3
- Pancreas: 6.5
- Kidney: 5.4

10 most common cancers, females

- Breast: 64.1
- Cervix uteri: 23.1
- Colon and rectum: 19.5
- Stomach: 13.3
- Thyroid: 11.6
- Lung: 9.4
- Non-Hodgkin lymphoma: 7.3
- Corpus uteri: 6.9
- Pancreas: 4.5
- Melanoma of skin: 4.3
**Results**

**Prostate cancer**

- France, La Martinique: 153.00
- Brazil, Brasilia: 101.50
- Brazil, Sao Paulo: 84.80
- Brazil, Goiania: 83.40
- Brazil, Cuiaba: 79.30
- Colombia, Cali: 63.20
- Chile, Valdivia: 57.60
- Costa Rica: 47.00
- Ecuador, Quito: 39.70
- Argentina, Bahia Blanca: 36.40
- Peru, Trujillo: 27.30

**Countries and Cities**:
- Peru, Trujillo
- Argentina, Bahia Blanca
- Brazil, Cuiaba
- Brazil, Sao Paulo
- Brazil, Brasilia
- Colombia, Cali
- Chile, Valdivia
- Costa Rica
- Ecuador, Quito
- France, La Martinique
Age-specific rates
Prostate Cancer
Results

Breast Cancer

- Argentina, Bahia Blanca: 85.70
- Brazil, Sao Paulo: 80.80
- Brazil, Brasilia: 68.70
- France, La Martinique: 55.20
- Brazil, Goiania: 53.80
- Brazil, Cuiaba: 51.70
- Colombia, Cali: 47.50
- Costa Rica: 37.40
- Chile, Valdivia: 30.90
- Ecuador, Quito: 30.70
- Peru, Trujillo: 29.40

International Agency for Research on Cancer
Age-specific rates
Breast Cancer
Results

Cervix Uteri

- Peru, Trujillo: 43.9
- Brazil, Cuiaba: 37.7
- Brazil, Brasilia: 37.7
- Brazil, Goiania: 33.9
- Colombia, Cali: 27.9
- Chile, Valdivia: 22.2
- Brazil, Sao Paulo: 21.1
- Ecuador, Quito: 20.0
- Costa Rica: 18.9
- France, La Martinique: 16.5
- Argentina, Bahia Blanca: 16.0
Results

Lung Cancer

- Argentina, Bahia Blanca
- Brazil, Sao Paulo
- Brazil, Brasilia
- Brazil, Cuiaba
- Colombia, Cali
- Brazil, Goiania
- France, La Martinique
- Chile, Valdivia
- Costa Rica
- Ecuador, Quito
- *Peru, Trujillo

- Males
- Females
Results

Most common cancers by registry (males):

- Brazil and Argentina (Bahia Blanca): prostate, lung and colorectal cancers.

- Chile (Valdivia), Costa Rica and Martinique: prostate, gastric and colorectal cancers.

- Ecuador (Quito) and Peru (Trujillo): prostate and gastric cancers, non-Hodgkin lymphoma.

- Colombia (Cali): prostate, stomach and lung.
Results

Most common cancer by registry (females):

• Argentina (Bahia Blanca): breast, cervical and colorectal cancers.
• Brazil: breast, colorectal and cervical cancers.
• Chile (Valdivia): breast, gallbladder and cervical cancers.
• Colombia (Cali), Costa Rica and Ecuador (Quito): breast, cervical and gastric cancers.
• Martinique: breast, colorectal and cervical cancers.
• Peru (Trujillo): cervical, breast and gastric cancers.
Trends: Prostate Cancer (25-85+)


Rate (per 100,000)

- Colombia, Cali
- Costa Rica
- Ecuador, Guaya
Trends: Breast Cancer (25-85+)
Trends: Cervical Cancer (25-85+)

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Trends: Lung Cancer (25-85+)

Males

Females

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World Health Organization
Conclusions

• Cervical cancer incidence rates observed in Latin America are among the highest in the World.

• Gastric cancer incidence is high compared to other World regions (except Asia).

• Lifestyle related cancers are present as well in infection-related cancers.
Conclusions

- Geographic coverage by population-based cancer registries in Latin America remains low.

- There is not a clear pattern of cancer incidence in Latin America due to diversity of population and socio-economic conditions, between and within countries.