CANCER REGISTRATION IN DEVELOPING COUNTRIES:
THE AIRTUM-EUROMED EXPERIENCE

Diego Serraino
Epidemiologia e Biostatistica
Registro Tumori del Friuli Venezia Giulia
IRCCS Centro di Riferimento Oncologico, Aviano
• INTRODUCTION
• CANCER REGISTRATION IN OCCUPIED PALESTINIAN TERRITORIES
• CANCER REGISTRATION IN ALGERIA
• FROM REGISTRATION TO ANALYTICAL INVESTIGATIONS
EUROMED CANCER REGISTRY PROGRAM

- **2008**: The “Euromed Cancer Registries Network” project was promoted by the Italian Ministry of Health in collaboration with AIRTUM after specific activities promoted by few Italian cancer registries.

- **2009**: The Italian MOH approved and financed for the first year AIRTUM for conducting the program.

- **2010**: The Italian MOH financed for the second year AIRTUM for continuing the program.

- **2011**: The Italian MOH financed the Italian Health Institute (Istituto Superiore di Sanità, Rome, ISS) for continuing -in collaboration with AIRTUM- the third year of the Euromed program – deadline **May, 2013**
EUROMED CANCER REGISTRY: AIMS

General:
Contributing to support the control of the spread of neoplastic diseases in limited resource Countries facing the Mediterranean rim.

Specific:
- Improving the quality of data from the cancer registries active in Mediterranean Countries and the information flows;
- training the personnel for
  - data collection,
  - use of standard statistical software
  - use statistical models
GLOBOCAN 2008 (IARC) - Incidence and mortality rates

NORTHERN AFRICA, MEN

- Lung
- Bladder
- Non-Hodgkin lymphoma
- Prostate
- Liver
- Colorectum
- Leukaemia
- Larynx
- Stomach
- Brain, nervous system
- Nasopharynx
- Lip, oral cavity
- Pancreas
- Oesophagus
- Kidney

Incidence (blue) vs. Mortality (red)

ASR (W) rate per 100,000
GLOBOCAN 2008 (IARC) - Incidence and mortality rates

NORTHERN AFRICA, WOMEN

Breast
Cervix uteri
Colorectum
Non-Hodgkin lymphoma
Ovary
Thyroid
Leukaemia
Liver
Stomach
Bladder
Brain, nervous system
Lung
Corpus uteri
Gallbladder
Lip, oral cavity

ASR (W) rate per 100,000

Incidence
Mortality
EUROMED: PARTICIPATING CENTRES

- SETIF CANCER REGISTRY, ALGERIA
- IZMIR CANCER REGISTRY, TURKEY
- MALTA NATIONAL CANCER REGISTRY, MALTA
- NATIONAL CANCER REGISTRY, AND RESEARCH CHILDREN’S CANCER HOSPITAL, CAIRO - EGYPT
- REGISTRES DES Cancers DE RABAT, AND REGISTRE DU CANCER DU GRAND CASABLANCA, -MOROCCO
- BENGHAZI CANCER REGISTRY, LYBIA
- STATISTICAL OFFICER OF CYPRUS HEALTH MONITORING, CYPRUS
- JORDAN CANCER REGISTRY
- WEST BANK AND GAZA, - OCCUPIED PALESTINIAN TERRITORIES
- REGISTRE DU CANCER DE LA TUNISIE CENTRALE, TUNISIE
Population:
3.760.000 West Bank          49.3% women
1.416.000 Gaza Strip

<15 years = 48.8%
0-4 years, largest group: 19%
>65 years : 2.5%

Health personnel:
1533 physicians
3621 nurses
1427 others

Health informatics:
The WHO has described the PNA’s Health Information System (HIS) as “incomplete, fragmented, unreliable, and outdated”.
Health in the Occupied Palestinian Territory 3

Cardiovascular diseases, diabetes mellitus, and cancer in the occupied Palestinian territory

Abdullatif Hussein, Niveen MEAbu-Rmeleh, Nahed Mikki, Tarik M Ramahi, Heidar Abu Ghosh, Nadim Barghuti, Mohammad Khaili, Espen Bjertness, Gerd Holmboe-Ottesen, Jik Javell

Figure 1: Leading causes of death in the occupied Palestinian territory in 2005
Reproduced from Ministry of Health with permission.
<table>
<thead>
<tr>
<th></th>
<th>West Bank Palestinians</th>
<th>Israeli Arabs</th>
<th>Israeli Jews</th>
<th>Jordanians</th>
<th>Lebanese</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Women</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age-adjusted incidence (per 100,000 population)</td>
<td>88.5</td>
<td>128.7</td>
<td>272.1</td>
<td>112.2</td>
<td>134.8</td>
</tr>
<tr>
<td><strong>Total cancer cases</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast</td>
<td>31.4%</td>
<td>27.7%</td>
<td>31.5%</td>
<td>32.5%</td>
<td>46.7%</td>
</tr>
<tr>
<td>Colon and rectum</td>
<td>9.2%</td>
<td>9.6%</td>
<td>14.1%</td>
<td>9.0%</td>
<td>11.5%</td>
</tr>
<tr>
<td>Thyroid</td>
<td>5.5%</td>
<td>7.0%</td>
<td>3.6%</td>
<td>5.4%</td>
<td></td>
</tr>
<tr>
<td>Corpus uteri</td>
<td>4.4%</td>
<td>5.0%</td>
<td>4.1%</td>
<td>2.4%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Ovary</td>
<td>3.8%</td>
<td>3.2%</td>
<td>2.7%</td>
<td>4.1%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Cervix uteri</td>
<td>1.0%</td>
<td>2.0%</td>
<td>1.7%</td>
<td>2.2%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Lung and bronchus</td>
<td>3.0%</td>
<td>3.5%</td>
<td>4.6%</td>
<td>2.3%</td>
<td>4.5%</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age-adjusted incidence (per 100,000 population)</td>
<td>108.0</td>
<td>175.7</td>
<td>282.6</td>
<td>115.2</td>
<td>154.2</td>
</tr>
<tr>
<td><strong>Total cancer cases</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lung</td>
<td>13.8%</td>
<td>19.0%</td>
<td>9.8%</td>
<td>12.2%</td>
<td>14.1%</td>
</tr>
<tr>
<td>Prostate</td>
<td>11.3%</td>
<td>8.4%</td>
<td>17.5%</td>
<td>7.5%</td>
<td>14.2%</td>
</tr>
<tr>
<td>Colon and rectum</td>
<td>9.6%</td>
<td>9.9%</td>
<td>14.1%</td>
<td>9.1%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Non-Hodgkin lymphoma</td>
<td>5.0%</td>
<td>7.7%</td>
<td>5.7%</td>
<td>7.1%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Stomach</td>
<td>4.7%</td>
<td>3.4%</td>
<td>4.3%</td>
<td>4.7%</td>
<td>7.9%</td>
</tr>
</tbody>
</table>

Table 4: Age-adjusted cancer incidence and site-specific proportions of all cancers in the occupied Palestinian territory and in neighbouring countries.
CANCER REGISTRATION IN GAZA, 2010

- Cases registered in 2010
  - Men = 427, (53,8/100.000)
  - Women = 504, (65,9/100.000)

- Most common sites in **men**:
  - Lung
  - Leukemia
  - Colorectum
  - Lymphomas
  - Prostate

- Most common sites in **women**:
  - Breast
  - Colorectum
  - Leukemia
  - Lymphomas
  - Thyroid
CANCER REGISTRATION IN ALGERIA, WILLAYA OF SETIF

SETIF – ALGERIA POPULATION: 1.365.488 inhabitants

Men (50.1%)
58.0%, <25 years
7.7%, >54 years

Women
59.8%, <25 years
8.6%, >54 years
## Incidence of Most Common Cancer Sites, SETIF, 2010 - Men

<table>
<thead>
<tr>
<th>Site/type</th>
<th>Number of yearly diagnoses</th>
<th>Incidence rate (STD, x100 000)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>105</td>
<td>20.7</td>
<td>17.3</td>
</tr>
<tr>
<td>Colon-rectum</td>
<td>69</td>
<td>11.6</td>
<td>11.4</td>
</tr>
<tr>
<td>Bladder</td>
<td>58</td>
<td>10.2</td>
<td>9.6</td>
</tr>
<tr>
<td>Prostate</td>
<td>43</td>
<td>8.2</td>
<td>7.1</td>
</tr>
<tr>
<td>Nasopharynx</td>
<td>41</td>
<td>5.8</td>
<td>6.8</td>
</tr>
<tr>
<td>Stomach</td>
<td>35</td>
<td>6.6</td>
<td>5.8</td>
</tr>
<tr>
<td>Larynx</td>
<td>34</td>
<td>6.4</td>
<td>5.6</td>
</tr>
<tr>
<td>Non-Hodgkin lymphomas</td>
<td>26</td>
<td>3.7</td>
<td>4.1</td>
</tr>
<tr>
<td>Central nervous system</td>
<td>24</td>
<td>3.5</td>
<td>3.8</td>
</tr>
<tr>
<td>Leukemias</td>
<td>16</td>
<td>2.8</td>
<td>2.6</td>
</tr>
</tbody>
</table>
## INCIDENCE OF MOST COMMON CANCER SITES, SETIF, 2010 - WOMEN

<table>
<thead>
<tr>
<th>Site/type</th>
<th>Number of yearly diagnoses</th>
<th>Incidence rate (STD, x100 000)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>336</td>
<td>49.2</td>
<td>43.4</td>
</tr>
<tr>
<td>Colon-rectum</td>
<td>68</td>
<td>11.4</td>
<td>8.8</td>
</tr>
<tr>
<td>Thyroid</td>
<td>46</td>
<td>6.4</td>
<td>5.9</td>
</tr>
<tr>
<td>Cervix</td>
<td>44</td>
<td>7.7</td>
<td>5.7</td>
</tr>
<tr>
<td>Gallbladder, biliary tract</td>
<td>28</td>
<td>4.7</td>
<td>3.6</td>
</tr>
<tr>
<td>Non-Hodgkin lymphomas</td>
<td>28</td>
<td>4.1</td>
<td>3.6</td>
</tr>
<tr>
<td>Lung</td>
<td>24</td>
<td>4.0</td>
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<tr>
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<td>Stomach</td>
<td>17</td>
<td>2.9</td>
<td>2.2</td>
</tr>
</tbody>
</table>
INCIDENCE OF MOST COMMON CANCER SITES, SETIF, 2000-2010

Graph showing the incidence rates of breast cancer in women, lung cancer in men, and overall cancer incidence for men and women from 2000 to 2010.
EUROMED/AIRTUM PROGRAM:
HOSPITAL-BASED CASE-CONTROL STUDY ON RISK FACTORS FOR
SELECTED CANCER SITES, SETIF CANCER REGISTRY

- **Types/sites of interest:**
  - Breast, female
  - Prostate
  - Bladder
  - Nasoharyngeal cancer
  - Liver and biliary tract cancers
  - Colon-rectum
  - Non-Hodgkin lymphoma
EUROMED/AIRTUM PROGRAM:
HOSPITAL_BASED CASE-CONTROL STUDY ON RISK FACTORS FOR SELECTED CANCER SITES,
SETIF CANCER REGISTRY

- Risk factors investigated:
  - Socio-demographic
  - Personal habits:
    - Smoking
    - Diet
    - Physical activity
    - Alcohol consumption
  - Familiarity and reproductive
  - Occupation
  - Medical history