Cancer Challenges in the Arab World
Sami Khatib, MD.
Consultant Clinical Oncologist.
Secretary General of the Arab Medical Association Against Cancer (AMAAC).
President of The Arab Collaborative Hematology and Oncology Group (ACHOG)
Former President of JOS
Algeria 18, January. 2014
21st century cancer burden

Like infectious diseases, cancer is a health problem in developing countries.

- Global cancer burden doubled in past 30 years
- Expected to double between 2000 and 2020
- More than half of the cancer burden is in low- or middle-income countries
- In 1970, 15% of new cases in developing countries
- In 2012, 72% of cancer deaths in developing countries
- By 2020, 60% of new cases in least developed countries
By 2020, cancer could kill 10.3 million people per year unless we act.
2013

- 6.7 million deaths
- 10.9 million new cases
- 24.6 million people living with cancer*

Figure based on a 5-year prevalence between 1998-2002. Source: IARC, Globocan 2002
Why is cancer increasing?

- Lifestyle changes – diet/weight, tobacco
- Environmental exposures
- Increased life expectancy
- Population growth
- Emerging or problematic infectious diseases
- Lack of health care services
- Primary care system – prevention, early screening
- Routine reproductive health care
- Increased reporting and data collection
Scale of the problem

• More than 4 million people in developing countries die of cancer each year
• Nearly 6 million new cases reported

Leading Cancers in Developing Countries

<table>
<thead>
<tr>
<th>Type</th>
<th>Incidence (In 1000s)</th>
<th>Deaths (In 1000s)</th>
<th>Incidence (In 1000s)</th>
<th>Deaths (In 1000s)</th>
<th>Incidence (In 1000s)</th>
<th>Deaths (In 1000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>481</td>
<td>423</td>
<td>191</td>
<td>168</td>
<td>672</td>
<td>591</td>
</tr>
<tr>
<td>Stomach</td>
<td>405</td>
<td>316</td>
<td>214</td>
<td>170</td>
<td>619</td>
<td>486</td>
</tr>
<tr>
<td>Liver</td>
<td>366</td>
<td>344</td>
<td>147</td>
<td>142</td>
<td>513</td>
<td>486</td>
</tr>
<tr>
<td>Esophageal</td>
<td>256</td>
<td>210</td>
<td>130</td>
<td>109</td>
<td>386</td>
<td>319</td>
</tr>
<tr>
<td>Cervical</td>
<td>409</td>
<td>234</td>
<td>409</td>
<td>234</td>
<td>409</td>
<td>234</td>
</tr>
<tr>
<td>Breast</td>
<td>514</td>
<td>221</td>
<td>514</td>
<td>221</td>
<td>514</td>
<td>221</td>
</tr>
<tr>
<td>Colorectal</td>
<td>196</td>
<td>118</td>
<td>160</td>
<td>96</td>
<td>356</td>
<td>214</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,704</td>
<td>1,411</td>
<td>1,765</td>
<td>1,140</td>
<td>3,469</td>
<td>2,551</td>
</tr>
</tbody>
</table>
• The biggest rates of increase are in developing and newly industrialized countries.

• The relative increase is smallest in some Western countries where populations are rejecting tobacco and adopting healthier lifestyles.
The number of new cases each year could rise from 10.9 million in 2012 to 16 million in 2020 nearly a 50% increase.

A steadily increasing proportion of elderly people in the world will result in approximately 50% increase in new cancer cases over the next 20 years.

If current smoking levels and the adoption of unhealthy lifestyles persist, the increase will be even greater.
Risk Factors

• 43% of cancer deaths are due to tobacco, diet and infection.
• These factors were responsible for 4.4 million new cancer cases in 2012
Risk Factors

Source: IARC 2000
Number of smokers

Source: WHO & World Bank 2003
Infectious diseases

In 2012, 2.9 million cases attributable to infections

8-10% of cancers in high-income countries
20-26% of cancers in developing countries

- Human papilloma virus – cervical cancer
- Hepatitis B & C viruses – liver cancer
- *H. pylori* (bacteria) – stomach cancer
- Epstein-Barr virus – Burkitt’s lymphoma and nasopharyngeal cancer
- HIV – Kaposi sarcoma and other lymphomas
- Herpes virus 8 & T-lymphotropic viruses – adult T-cell
- leukemia and other lymphomas
Reproductive health

- Breast cancer – most common cancer among women; 2nd most common cancer worldwide
  - Increasing in developing countries
  - More aggressive than in high-income countries
- Cervical cancer – intersection of infectious diseases (HPV), reproductive health and cancer
- Endometrial cancer – 3rd most common cancer in women; ~ 190,000 new cases/year
- Ovarian cancer – 6th most common cancer in women; data is limited
- Prostate cancer – 5th most common cancer; 2nd most common in men
The specific challenges relating to cancer control

- inadequate health systems infrastructure,
- Lack of specialized skills and specialists,
- high cost of diagnostic and treatment,

The result is

Inability to provide lengthy, complex personalized treatment regimens and follow-up care, as necessary
Inadequate health systems infrastructure

Lack in

• Prevention and primary healthcare services
• Screening and early detection
• Treatment
• Palliative care
Health spending in the MENA region as % of GDP is half OECD

MENA AVG: 4.5%

North Africa: 4.6%
GCC: 3.1%
Levant: 7.1%
Turkey: 5.9%
OECD: 8.9%

Source: Economist Intelligence Unit, World Health Organization; Abraaj analysis
Lack of investment has resulted in insufficient health infrastructure

**Beds per 1,000 Population, 2005**

- MENA AVG: 2.1
- North Africa: 1.9
- GCC: 2.2
- Levant: 1.8
- OECD: 2.7

**Doctors per 1,000 Population, 2005**

- MENA AVG: 1.5
- North Africa: 1.6
- GCC: 1.5
- Levant: 1.1
- OECD: 1.6

Source: Economist Intelligence Unit, World Health Organization, Abraaj analysis
## Palliative care infrastructure

<table>
<thead>
<tr>
<th>Country</th>
<th>No. of Services</th>
<th>Ratio 1:000s</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>4,000</td>
<td>75</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1,487</td>
<td>40</td>
</tr>
<tr>
<td>Israel</td>
<td>11</td>
<td>611</td>
</tr>
<tr>
<td>UAE</td>
<td>2</td>
<td>1,344</td>
</tr>
<tr>
<td>Jordan</td>
<td>2</td>
<td>2,852</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>3</td>
<td>8,191</td>
</tr>
<tr>
<td>Iraq</td>
<td>1</td>
<td>28,807</td>
</tr>
<tr>
<td>Egypt</td>
<td>3</td>
<td>24,678</td>
</tr>
<tr>
<td>Morocco</td>
<td>1</td>
<td>34,487</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1</td>
<td>157,935</td>
</tr>
<tr>
<td>India</td>
<td>138</td>
<td>7,995</td>
</tr>
</tbody>
</table>

Source: Mapping levels of palliative care development: a global view.
Radiotherapy infrastructure

- Radiation therapy centers in the region are few and mostly available in major cities.
- Multidisciplinary approach is applied only in major cancer centers.
- In general, there is a marked deficiency in supportive care systems, trained social workers, health educators, and others.

*Source: International Atomic Energy Agency IAEA 2007*
The greatest obstacle to understanding global cancer incidence and mortality is the lack of data.

- Incidence based on data from small geographic areas – often pooled and extrapolated to large regions.
- Reported rates may reflect only individuals easiest to reach or with highest standard of living.
- Current global figures cannot truly reflect underlying economic and cultural diversity that contribute to incidence and mortality.
Population covered by certified cancer data sources - 2000

<table>
<thead>
<tr>
<th>Region</th>
<th>Cancer Registration</th>
<th>Certified cause of death</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>&lt;20%</td>
<td>35%</td>
</tr>
<tr>
<td>U.S. SEER</td>
<td>28%</td>
<td>28%</td>
</tr>
<tr>
<td>Africa</td>
<td>8%</td>
<td>&lt;13%</td>
</tr>
<tr>
<td>Asia</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>Latin America</td>
<td>13%</td>
<td>95%</td>
</tr>
</tbody>
</table>
Incidence and Mortality of Breast Cancer by Country
• Due to the lack in all aspects of cancer services in the region, AMAAC and National Guard Hospital met on March 25th in Riyadh involving specialized experts from all the Arab countries and international organizations in the field of oncology, and decided the following:
As a result of this systematic and practical approach, panel leaders and experts were able to reach a consensus to adopt the following “Arab World Cancer Declaration” in order to achieve specific core objectives by the year 2020 to optimize cancer care in the Arab World.
Organized by National Guard Health Affairs and Arab Medical Association against Cancer with participation of many regional and international experts and organizations.

Participants identified the need for a strategic approach to be taken by all relevant entities, including governmental and non-governmental agencies, health care providers, policy makers and communities at large, to optimize cancer care across the Arab world.

Direct inputs from experts and leaders in the field from across the Arab World participating in thirteen interactive panels during the ICCAW Inaugural Conference.

The panels each were tasked with prioritizing objectives for achievement by 2020.

In addition, each panel recommended key action steps to be accomplished in the near term to advance towards achievement of these objectives.

The combined themes of these panels result in a taxonomy for comprehensive cancer care and control.
Abdul Rahman Jazieh, MD, MPH
Chairman, Scientific Committee
Initiative to Improve Cancer Care in the Arab World

Dr. Omalkhair Abulkhair
Co-Chairperson, Scientific Committee
Initiative to Improve Cancer Care in the Arab World

Dr. Sami Khatib
Co-Chairperson, Scientific Committee
Initiative to Improve Cancer Care in the Arab World
Secretary General, Arab Medical Association Against Cancer
The panel experts wish to recognize the *World Cancer Declaration (UICC, 2006)*\(^1\) and *A Strategy for Cancer Control in the Eastern Mediterranean Region 2009-2013 (WHO 2008)*\(^2\), as invaluable resources aiding the development of this Initiative.

**Figure 1. Taxonomy for Comprehensive Cancer Care and Control in the Arab World**
PANEL FACILITATORS:

1) National Strategies and Cancer Control Plan
Dr. Abdullah Al Amro, Saudi Cancer Society, King Fahad Medical City, Saudi Arabia

2) Funding Cancer Care
Dr. Sherif Abouelnaga, Childrens Cancer Hospital Egypt 57357, Egypt
Dr. Falah Al Khatib, Gulf International Cancer Center, UAE

3) Early Detection and Prevention
Dr. Omalkhair Abulkhair, National Guard Health Affairs, Saudi Arabia
Dr. Faisal Al Safi, National Guard Health Affairs, Saudi Arabia
Dr. Dorria Salem, Cairo University, Egypt

4) Tobacco Control
Dr. Nagi El Saghir, American University of Beirut, Lebanon
Dr. Elsayed Salim, Rustaq Faculty of Applied Sciences, Oman

5) Human Resources Development
Dr. Abdulrahman Jazieh, National Guard Health Affairs, Saudi Arabia
6) **Registries & Data**
Dr. Ali Al Zahrani, Gulf Center for Cancer Registration, Saudi Arabia
Dr. Shouki Bazarbashi, King Faisal Specialist Hospital and Research Center, Saudi Arabia

7) **Diagnosis of Cancer**
Prof. Asma Al Adabbagh, King Abdulaziz University Hospital (Jeddah), Saudi Arabia
Dr. Abdulmohsen Al Kushi, National Guard Health Affairs, Saudi Arabia

8) **Standards of Care and Guidelines for the Arab Countries**
Dr. Nagi Saghir, American University of Beirut, Lebanon
Dr. Hamdy Abdul Azim, Cairo University, Egypt

9) **Research Development Priorities in the Arab Countries**
Dr. Ali Shanqeeti, King Abdulaziz City of Science and Technology, Saudi Arabia
Dr. Sana Al Sukhun, University of Jordan, Jordan

10) **Access to Cancer Care Facilities**
Dr. Fady Geara, American University of Beirut, Lebanon
Ms. Rabab Diab, King Hussein Institute for Biotechnology and Cancer, Jordan
11) Access to Cancer Care Medications
Dr. Ahmed Saadeddin, Riyadh Military Hospital, Saudi Arabia
Dr. Nour Obeidat, King Hussein Institute for Biotechnology and Cancer, Jordan

12) Access to Palliative Care
Dr. Omar Shamieh, National Guard Health Affairs, Saudi Arabia
Dr. Rafa Al Shehri, National Guard Health Affairs, Saudi Arabia
Dr. Mohammed El Foudeh, King Faisal Specialist Hospital and Research Center, Saudi Arabia

13) Overcoming the Challenges of Pediatric Cancer Care in the Arab World
Dr. Reem Al Sudairy, National Guard Health Affairs, Saudi Arabia
Dr. Mohammad Jarrar, National Guard Health Affairs, Saudi Arabia
Thank You

Please visit AMAAC website:
www.amaac.org
INTERNATIONAL ADVISORS AND EXPERTS

Dr. Tony Miller,
Dalla Lana School of Public Health
Canada
Dr. Cecilia Sepulveda
World Health Organization
Switzerland
Dr. Franco Cavalli,
Oncology Institute of Southern Switzerland
Switzerland
Dr. Ibtihal Fadhil
World Health Organization
Egypt
Prof. Jean-Jacques Zambrowski
Bichat University Hospital
France
Dr. Ben Anderson
UWMC-Roosevelt Facility
USA
Dr. Alex Adjei
Roswell Park Cancer Institute
USA

Dr. Fadwa Attiga
Basic Scientist
Jordan

Dr. Raul Ribeiro
St. Jude Children's Research Hospital
USA

Dr. David Kerr
Sidra Medical and Research Center
Qatar

Dr. Mhoira Leng
Cairdeas International Palliative Care Trust
Kampala

Dr. Ghassan Abou Alfa
Memorial Sloan Kettering Cancer Center
USA
Dr. Barri Blauvelt
Institute for Global Health, University of Massachusetts
USA
Dr. Leslie Lehmann
Boston Children’s Hospital
Harvard Medical School
USA
Ms. Kathleen Houlanah
Boston Children’s Hospital
Harvard Medical School, USA

Organizers

National Guard Health Affairs, King Saud Bin Abdulaziz University for Health Sciences
Arab Medical Association Against Cancer (AMAAC)
Participating Organizations:

World Health Organization (WHO)
International Union Against Cancer (UICC)
Saudi Ministry of Health (SMH)
Saudi Cancer Society (SCS)

Arab-European School of Oncology (EASO)
European Society for Medical Oncology (ESMO)
European School of Oncology (ESO)
Sanad Children’s Cancer Support Society
Zahra Breast Cancer Association
Gulf Cancer Center Health Council (GCC)
Bahrain Cancer Society
Objective 1 (POLICY): Implement a National Cancer Control Plan in each country.

Action Steps:
1-Establish a Pan-Arab Cancer Control Advisory Committee.
2-Establish a National Cancer Control Committee in each country.
3-Adapt the WHO Cancer Control Strategy.
4-Develop/review National Cancer Control plan in line with the WHO Regional Cancer Control Strategy.
5-Establish a cancer control database (stakeholder organizations) in each country.
Objective 2 (FUNDING):
Establish reliable and sustainable fund-raising strategies for each country, utilizing existing effective fund-raising models and tailored to meet the needs and capacity of that country.

Action Steps:
1- Collaborate with non-governmental organizations (NGOs).
2- Provide training/teaching for fundraising management.
3- Utilize available regional and international fundraising models.
Objective 3 (EARLY DETECTION & PREVENTION): Establish accessible and effective national screening and early detection programs in each country.

**Action Steps:**
1. Establish a Central Steering Committee, with representatives from each participating country.
2. Develop training programs for primary health care physicians and other health care professionals.
3. Develop standard plans for cancer center early diagnosis and screening.
4. Identify and review existing screening and detection services and create a reliable screening infrastructure for specific cancers.
5. Follow unified cancer screening selection criteria.
6. Increase efforts to reduce obesity and improve nutrition and life style (physical activity)
Objective 4 (TOBACCO CONTROL): Decrease all forms of tobacco consumption in all Arab countries (as an additional key component of Prevention).

**Action Steps:**
1- Intensify public awareness campaigns, through the use of public media and community education programs.
2- Support enforcement of anti-tobacco legislation, such as banning tobacco smoking in public and establishing a minimal legal age for smoking.
3- Advocate for legislation to increase tobacco taxation and for revenue from tobacco taxes to be allocated to cancer research.
Objective 5 (HUMAN RESOURCES): Substantially improve human resource capacities in all professions aligned to supporting goals for comprehensive cancer care

**Action Steps:**

1. Increase the number of academic programs for various disciplines related to cancer care.
2. Establish continuing education, training and development programs for practicing professionals.
3. Improve practice standards to enhance professional satisfaction, staff recruitment and retention, and ultimately improved cancer patient outcomes.
4. Improve professional, academic and community awareness of the need for qualified experienced cancer care professionals and the added value they give to the quality of cancer care.
Objective 6 (REGISTRIES AND DATA):
Establish a Pan-Arab automated cancer registry network that meets current international standards and develop at least minimum epidemiology and related data across the Arab world.

**Action Steps:**
1- Establish a Regional Steering Committee.
2- Develop regional cancer data standards.
3- Define minimum data required to be shared.
4- Establish mechanisms of data networking and transfer.
5- Establish standards for data reporting and utilization.
6- Establish mechanisms for incidence and prevalence reporting, and for patient surveillance and follow up.
Objective 7 (RESEARCH):
Initiate and conduct rigorous, collaborative cancer research activities, in all Arab countries, according to resource availability.

**Action Steps:**
1. Establish a Pan Arab Cancer Research Steering Committee.
2. Promote active participation of oncology clinicians in clinical trials and other relevant research.
3. Establish research training programs, open to researchers throughout the region.
4. Establish a Pan Arab Cancer Research Collaborative Network.
5. Promote translation of findings into clinical practice, as appropriate for each country.
6. Establish cancer care “Outcomes and Effectiveness Research” centers and programs in the region.
Objective 8 (GUIDELINES):
Ensure that the standards of care and management of the majority of cancer patients in Arab countries are based on evidence-derived guidelines.

Action Steps:
1-Establish a multidisciplinary regional Guidelines Steering Committee.
2-Adapt currently accepted guidelines to meet cultural expectations and resource availabilities.
3-Modify guidelines based on emerging evidence from the region.
4-Establish effective and sustainable outcomes monitoring and evaluation systems.
Objective 9 (DIAGNOSIS):
Ensure all cancer diagnostic testing in the Arab World is conducted following the highest international standards and quality control regulations.

Action Steps:

1- Establish a Regional Steering Committee to oversee the regulation, development and implementation of diagnostic standards.
2- Establish practice guidelines for referring physicians and radiologists.
3- Develop virtual national reference centers for cancer diagnostics.
4- Establish procedures in cancer centers that complex cases (such as unusual case presentation or failure to respond to treatment) are reviewed and discussed by a multidisciplinary team and resulting in a written plan of care.
Objective 10 (ACCESS TO FACILITIES): Identify inequities in cancer care facilities to service cancer detection and management needs and resource allocation in all Arab countries

**Action Steps:**

1. Establish a panel of experts in the field tasked to make recommendations for priority setting and facility resource allocation in each country.
2. Conduct mapping of cancer care facilities in each country.
3. Establish standards to establish access to cancer facilities for screening and care in primary, secondary and tertiary settings in each country, based on population need and geographic burden of disease.
4. Determine appropriate allocation processes to improve access to cancer facilities in each country based upon these standards.
Objective 11 (ACCESS TO MEDICATIONS):
Ensure that adequate access to cancer medications for cancer patients is thoroughly studied, lobbied and applied based upon scientific evidence.

**Action steps:**

1-Complete a baseline situational analysis on access to cancer medications.
2-Secure sufficient funding for cancer drug therapies.
3-Ensure availability of health policies that address access to cancer medications.
4-Establish and execute regional and international ‘exchange of expertise’ programs.
Objective 12 (PALLIATIVE CARE):
Promote the integration of comprehensive palliative care for all cancer patients throughout the Arab World.

**Action Steps:**

1. Increase palliative care awareness through advocacy and networking.
2. Identify gaps, needs and available resources for palliative care throughout the Arab World.
3. Promote the development of country-specific palliative care strategic plan.
4. Promote the adaptation and integration of palliative care curricula in the existing curricula for all health care providers, at all levels.
5. Establish palliative care training programs from basic to specialty levels.
6. Promote the availability of and access to essential opioids and other palliative medications for all cancer patients.
7. Promote the development of palliative care services at all levels of care, including community services, for all age groups.
8. Establish, implement and evaluate palliative care standards across advocacy, service provision, education, training, monitoring and research.
Objective 13 (PEDIATRIC CANCER): Reduce morbidity and mortality of pediatric cancer patients in the Arab World.

**Action Steps:**
1-Form a regional network that will facilitate the development of pediatric cancer care programs in all Arab countries.
2-Develop a proposal for pediatric hematology/oncology physician fellowships and submit to the Arab Board/Local Boards for accreditation.
3-Establish Regional Training Programs for pediatric hematology/oncology nurses, including advanced nurse practitioners, and for other pediatric oncology specialist supportive care providers such as dietitians, patient educators, and clinical pharmacists, social workers and psychologist.
4-Establish a pediatric palliative care program in each Arab country.
5-Create national and regional databases for pediatric cancer.
These objectives can be achieved through collaborative associations with regional governmental and non-governmental organizations, academic institutions and concerned individuals and also by forming partnerships with international organizations, institutions, industry, and experts. A quarterly update of committee activities will be provided to ICCAW leadership and an annual status report will be generated for submission to the appropriate participating country authorities.

Signed on behalf of the participating individuals and organizations:
On the 24th of April 2010.
Taxonomy:
Positioning of the themes in Figure 1: Taxonomy for Comprehensive Cancer Care and Control in the Arab World is intended to help the reader visualize the interrelationship of the themes addressed in this Declaration and is not intended to imply degree of importance of one theme over another.

References
The Global Cancer Burden

• By 2020, WHO predicts that more people in low – and middle income countries will die of cancer than HIV, tuberculosis and malaria combined
• Number of new cancer cases in resource – rich countries already is dwarfed by those in resource – limited countries
International Variation in Age – standardized Breast Cancer Incidence Rates, 2008
Country income level & incidence of breast cancer
‘Meat/sweet’ diet in Shanghai ~ 1500 cases controls
Cui, et al., CEBP, 2007

• Diet patterns
  - Tofu, cauliflower, beans, bean sprouts green leafy vegetables
  - Shrimp, chicken, beef, pork, candy, desserts

• Meat/ sweet associated with increased risk in post menopausal women [OR 1.3 (1.0-1.7); p=0.3]
Sub – Saharan Africa: low incidence / high mortality

• Reproductive protection
  - Late menarche, early menopause
  - 5-9 live births per woman
  - Median age at first pregnancy = 19
  - 96% breast feed average of 16 months

• Late stage presentation
  - 70-90% present with Stage III-IV
  - 50% present with matted axillary lymph nodes
  - Mean tumor diameter 10 cm

Perception that African women present with breast cancer at earlier age
Tobacco (Deaths and consumption)

Source: World Bank 1994
## Regional view

<table>
<thead>
<tr>
<th></th>
<th>Africa</th>
<th>Asia</th>
<th>Latin America</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco use</td>
<td>No data in many countries</td>
<td>40-60% of men &lt;20% of women</td>
<td>30-40% of men &lt;20-30% of women</td>
</tr>
<tr>
<td>H. pylori infection</td>
<td>&gt;75% of adults (SSA) 65-74% in NA</td>
<td>&gt;75% of adults in SE and SC</td>
<td>65-74% of adults</td>
</tr>
<tr>
<td>Major cancers in men</td>
<td>Lung (N) Liver (W, C) Oral cavity (E)</td>
<td>Lung (SE, China, C) Liver (N, SE) Oral cavity (India) Stomach (SC)</td>
<td>Lung (S) Prostate (Mexico, CA, Northern SA) Stomach (Chile)</td>
</tr>
<tr>
<td></td>
<td>Prostate (S, W) Kaposi sarcoma (S)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Esophagus (E)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major cancers in women</td>
<td>Cervical (C) Breast (N, S) Liver (SE)</td>
<td>Cervical Breast (SC, C, SE) Liver (N) Stomach (China)</td>
<td>Cervical (Mexico, CA, Northern SA Breast (SA)</td>
</tr>
</tbody>
</table>

*The Cancer Atlas. 2006. American Cancer Society*