Cancer management during Syrian Conflict
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Damascus, SYRIA
Syria

- Syria is a lower middle income country
- population of 22.3 million
- per capita income of $3900 in 2009
- land area of 185180 km2

*Source: The estimation data for section "Syria age dependency ratio" is based on the latest demographic and social statistics by United Nations Statistics Division external link.*
Syria and Health

• According to the WHO, the life expectancy of the average Syrian in 2012 was 75.7 years, (a leap from an average of 56 years in 1970), drops over 20 years*
• infant mortality dropped from 132 per 1000 live births in 1970 to 17.9 per 1000 in 2009;
• under-five mortality dropped significantly from 164 to 21.4 per 1000 live births;
• and maternal mortality fell from 482 per 100 000 live births in 1970 to 52 in 2009.
• Syria was in epidemiological transition from communicable to non-communicable diseases
• latest data showing that 77% of mortalities NCD

*“Syria: Alienation and Violence, Impact of the Syria Crisis, Syrian Center for Policy Research, in Damascus
Cancer management during Syrian Conflict

- The war in Syria has plunged 80% of its people into poverty
- 3 million Syrians lost their jobs # 12 million people lost their primary source of income
- unemployment surged from 14.9% in 2011 to 57.7% at the end of 2014.
- 15% drop in Syria’s population — from 21.87 million in 2010 to just 17.65 million at the end of last year.
3.33 million people fleeing to other countries
1.55 million Syrians left the country to find work and a safer life elsewhere
- massive demographic changes
- Half million death (direct violence)
- 1.8 million injuries
- 5 million registered refugees (record)
- 7.5 million IDPs

Health facilities during Syrian Conflict

• WHO rapid assessment of the availability and functionality of health services and resources in affected areas.

• The survey included 342 primary health care centers (PHC) and 38 hospitals in several affected provinces:

  43% of PHCs are partially functioning
  2% of PHCs are nonfunctioning

  13% PHCs are inaccessible (50%, mostly in Idleb); lack of safety (34%, mostly in Homs and Hama); difficulties in public transportation (8%, mostly in Tartous) or temporary relocation of patients (2%)

  50% of hospitals are fully functioning due to lack of staff, equipment and medicine.

Cancer management during Syrian Conflict

Health facilities

- Public hospitals 131: 14 MOHE, 99 MOH, 18 MOD
  - 38 completely destroyed
  - 20 Partially destroyed or robbed

- Private hospitals 369: no data

- Medical centers 1750:  418 out of service
  - 203 closed
  - 30 partially damaged

- Specialists polyclinics: 34

- Mobile clinics: 6
Cancer management during Syrian Conflict

<table>
<thead>
<tr>
<th></th>
<th>Damascus suburban</th>
<th>Homs</th>
<th>Aleppo</th>
<th>Idlib</th>
<th>Raqqa</th>
<th>Der Elzor</th>
</tr>
</thead>
<tbody>
<tr>
<td>damaged</td>
<td>31</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Unsafe-closed</td>
<td>203</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Out of service</td>
<td>418</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td>health centers</td>
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<tr>
<td>hospitals</td>
<td>58</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>damaged</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Out of service</td>
<td>38</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

works partially (eg shortage of staff, equipment, medicines, and damaged sections of the hospital),
Ministry of Health statistics indicate that:
- The number of martyrs of workers in the health sector 202 martyrs.
- The number of injured while performing health duties 142 wounded.
- The number of health workers who are still kidnapped 39 people.

**Al Bayrouni Hospital:**
10 martyrs of workers (1 physician)
56 injured

<table>
<thead>
<tr>
<th>مجموع</th>
<th>8</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>خارج الخدمة</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>أشدا</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>المهاني الإدارية</td>
<td>69</td>
<td>69</td>
</tr>
<tr>
<td>المباني البشري</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>الکادر البشري</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

| ريف دمشق | 1 |
| حمص | 2 |
| حلب | 6 |
| ادلب | 4 |
| الرقة | 4 |
| دير الزور | 6 |

**Table:**
- **Kidnapped:** 8
- **Wounded:** 17
- **Martyrs:** 13
- **Damaged:** 8
- **Out of service:** 6

**Regions:**
- Damascus suburban
- Homs
- Aleppo
- Idleb
- Raqqa
- Der Elzor
about 500 ambulances destroyed and deactivated more than 200 service vehicles out of function
HOMS

AI AMAL HOSPITAL

HOMS PUBLIC HOSPITAL
Aleppo
Al kindi university Hospital
In war-torn areas, infrastructure does not mean treatment. Healthcare professionals are often in the class that is able to escape. The result: the hospitals that are left standing are often vacant. Most providers are volunteers or with an NGO.

Pharmaceutical factories in 2010 was covering about 90% of the local market, decline to 70% over the past five years:

- **20 Pharmaceutical factories destroyed**
- **economic sanctions**
- damage to the parallel sectors: **electricity and fuel**
- **lack of safe ways** and stolen shipments of drugs in some provinces
The impact of economic sanctions

• Both the U.S. and EU regimes include exemptions for medicines and other humanitarian supplies. However, by clamping down on financial transactions and barring much business with the Syrian government, the sanctions are indirectly affecting trade in pharmaceuticals.

• Many drugs companies have erred on the side of caution, avoiding any business with Syria for fear of inadvertently falling foul of the sanctions.
Cancer management during Syrian Conflict
human resources

• Damascus University – Medical school: 100 professors out of 400 left Syria
• MOHE: leakage of faculty members at Damascus University is estimated at 20% (379 out of 2037)
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physicians

- 33000 physicians registered in Syria
- nearly 30% of doctors left the country because of the current events and the fear of kidnapping, murder, and the loss of a source of live.

- 120 oncologists / hematologist:
  - 30 oncologists left Syria during crises (10 from Aleppo)
  - many residents and young fellows left Syria
  - no oncologist in Raqqa, derEzzor, Idleb, Qamishly and Daraa
Cancer management during Syrian Conflict

Effects of conflict on HEALTH

Health of Syrians

- Conflict Related Injuries
  - Over one million injuries\(^{22}\)
  - Tens of thousands of Syrians now require prostheses and long-term rehabilitation\(^{22}\)

- NCDs: the “silent” burden
  - 2012 = 70,000 cancer patients not receiving treatment\(^{23}\)
  - 200,000 deaths from chronic conditions\(^{17}\)
  - Little to no mental health services available, only two hospitals and one referral centre.\(^{24}\)

- Communicable Disease
  - WHO estimates over 7,600 Syrians are currently infected with Polio\(^{25}\)

- Maternal Health
  - Raqqa – ISIS stronghold = no obstetric or gynecology service for 1.6 million women\(^{26}\)
# Top 10 causes of Mortality/Morbidity - 2009

17270 new case

<table>
<thead>
<tr>
<th>Rank</th>
<th>Mortality</th>
<th>Morbidity/Disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cardiovascular Diseases</td>
<td>Digestive Diseases</td>
</tr>
<tr>
<td>2</td>
<td>Respiratory Diseases</td>
<td>Respiratory Diseases</td>
</tr>
<tr>
<td>3</td>
<td><strong>Cancer</strong></td>
<td>Cardiovascular Diseases</td>
</tr>
<tr>
<td>4</td>
<td>Injuries</td>
<td>Poisoning</td>
</tr>
<tr>
<td>5</td>
<td>Certain Conditions Originating in the P-natal Period</td>
<td>Injuries</td>
</tr>
<tr>
<td>6</td>
<td>Genitourinary Diseases</td>
<td>Infectious and Parasitic Diseases</td>
</tr>
<tr>
<td>7</td>
<td>Congenital Malformations, Deformations and Chromosomal Abnormalities</td>
<td><strong>Cancer</strong></td>
</tr>
<tr>
<td>8</td>
<td>Nervous Diseases</td>
<td>Kidney Diseases</td>
</tr>
<tr>
<td>9</td>
<td>Digestive Diseases</td>
<td>Blood Diseases</td>
</tr>
<tr>
<td>10</td>
<td>Endocrine, Nutritional and Metabolic Diseases</td>
<td>Certain Conditions Originating in the Pre-natal Period</td>
</tr>
</tbody>
</table>

Source: 1- Mortality (Civil registrations + Funeral Offices + Hospitals /Public +Private) 2- Morbidity (Reports of public and private hospitals)
Homs

Chart Title

- **2010**
  - عدد المراجعين: 2100
  - عدد الجرعات: 900/شهريا

- **2016**
  - عدد المرضى الجدد: 570
  - عدد الجرعات: 1738

- **2017**
  - عدد المراجعين: 400
  - عدد الجرعات: 164
Aleppo Cancer patients

<table>
<thead>
<tr>
<th>Year</th>
<th>New</th>
<th>Cons</th>
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<tbody>
<tr>
<td>2012</td>
<td>1443</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>1252</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>970</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>747</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>603</td>
<td></td>
</tr>
</tbody>
</table>
Damascus – Al Bayrouni University Hospital

new cases

<table>
<thead>
<tr>
<th>Year</th>
<th>Series 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>10306</td>
</tr>
<tr>
<td>2011</td>
<td>10306</td>
</tr>
<tr>
<td>2012</td>
<td>8481</td>
</tr>
<tr>
<td>2013</td>
<td>5178</td>
</tr>
<tr>
<td>2014</td>
<td>7996</td>
</tr>
<tr>
<td>2015</td>
<td>7357</td>
</tr>
<tr>
<td>2016</td>
<td>7909</td>
</tr>
</tbody>
</table>
Lattakia

New case

- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016

Series 1
Online surveys were distributed to both certified oncologists who work in cancer clinics and general physicians who work in rural and mobile clinics inside Syria. Because of the small participant pool, the information gathered is considered pilot data for future cancer research in Syria.

NB: The majority of oncologists in Major cities and center did not participate.

<table>
<thead>
<tr>
<th>Resources</th>
<th>Major Cities*</th>
<th>Besieged Areas**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood transfusions</td>
<td>AVAILABLE</td>
<td>AVAILABLE</td>
</tr>
<tr>
<td>Granulocyte colony-stimulating factors</td>
<td>AVAILABLE</td>
<td>LIMITED</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>AVAILABLE</td>
<td>LIMITED</td>
</tr>
<tr>
<td>Targeted agents</td>
<td>LIMITED</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Onsite blood tests</td>
<td>AVAILABLE</td>
<td>AVAILABLE</td>
</tr>
<tr>
<td>Radiation therapy</td>
<td>LIMITED</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Specialized surgeon</td>
<td>LIMITED</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Clinical trials</td>
<td>NOT AVAILABLE</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Bone marrow transplantation</td>
<td>NOT AVAILABLE</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Interventional radiology laboratory</td>
<td>NOT AVAILABLE</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Supportive services</td>
<td>AVAILABLE</td>
<td>AVAILABLE</td>
</tr>
<tr>
<td>PET scan</td>
<td>LIMITED</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>MRI</td>
<td>AVAILABLE</td>
<td>LIMITED</td>
</tr>
<tr>
<td>Genetic testing</td>
<td>NOT AVAILABLE</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Screening</td>
<td>LIMITED</td>
<td>NOT AVAILABLE</td>
</tr>
</tbody>
</table>

*Damascus, Homs, Latakia, West Aleppo. **Idlib, East Aleppo, East Ghouta.
Adapted from Table 2 in “Cancer Care in Times of Crisis and War: The Syrian Example.”
3 BMT Units in Syria

• **SSCTG Al Manar Hospital-1/4/2012:**
  42 Autologous BMT & 4 Allogenic BMT

• **Children Hospital 12/2015:** few case

• **Tishreen hospital 2008**
Cancer management during Syrian Conflict
rapid assessment study and overview of data –Health Resources Availability Monitoring System (HeRAMS June 2016)

• Data provided by health resources and services program (HeRAMS - June 2016) :

• Out of 82 functional public hospitals, 23% (19) provided cancer treatment services.
  Approximately, 11,270 patients received cancer treatment consultations

  2009 statistics of the cancer registry of the Ministry of Health in Syria, there were about 17,599 patients
  - 10% (1760) were children
  - 90% (15,839) were adult patients:
    - 8386 (48%) female breast cancer and leukemia were the major types of cancer
    - 9213(52%) male lung and colon cancers were the main cancers
List of proposed hospitals for the rapid assessment study and overview of data – HeRAMS June 2016

<table>
<thead>
<tr>
<th>#</th>
<th>Ministry</th>
<th>Hospital Name</th>
<th>Governorate</th>
<th>Hospital Type</th>
<th>Number of consultations (outpatient consultations and emergency cases)</th>
<th>Inpatient capacity (number of available beds)</th>
<th>Number of cancer treatment consultations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MoHE</td>
<td>Al-Bairouni hospital</td>
<td>Rural Damascus</td>
<td>Specialized</td>
<td>5894</td>
<td>449</td>
<td>5894</td>
</tr>
<tr>
<td>2</td>
<td>MoHE</td>
<td>Tishreen university hospital</td>
<td>Lattakia</td>
<td>General</td>
<td>13013</td>
<td>852</td>
<td>1812</td>
</tr>
<tr>
<td>3</td>
<td>MoHE</td>
<td>Al-Mouwasat university hospital</td>
<td>Damascus</td>
<td>General</td>
<td>16747</td>
<td>820</td>
<td>1142</td>
</tr>
<tr>
<td>4</td>
<td>MOH</td>
<td>Zahi Azrak</td>
<td>Aleppo</td>
<td>General</td>
<td>7837</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>MoH</td>
<td>Ebn An-Nafis hospital</td>
<td>Damascus</td>
<td>General</td>
<td>13539</td>
<td>146</td>
<td>658</td>
</tr>
<tr>
<td>6</td>
<td>MoH</td>
<td>Hama National hospital</td>
<td>Hama</td>
<td>General</td>
<td>14095</td>
<td>298</td>
<td>430</td>
</tr>
<tr>
<td>7</td>
<td>MoHE</td>
<td>Children hospital</td>
<td>Damascus</td>
<td>Specialized</td>
<td>7660</td>
<td>440</td>
<td>176</td>
</tr>
<tr>
<td>8</td>
<td>MoH</td>
<td>Zaid Ash-Shariti hospital</td>
<td>As-Sweida</td>
<td>General</td>
<td>13528</td>
<td>345</td>
<td>105</td>
</tr>
</tbody>
</table>

Ministry of health (MOH)
Ministry of Higher education (MOHE)
4/8 in Damascus
Only 1 hospital is comprehensive cancer center

Source: HeRAMS and Secondary Program at WHO Syria Office- August- 2016
Cancer management during Syrian Conflict

Most common cancers seen

1. Breast
2. Colorectal
3. Lung
4. Leukaemia
5. Lymphoma
6. Lymphoma
7. Prostate
8. Stomach
9. Bladder

Women with breast cancer:
- 41.5% stage III
- 27.5% stage IV
- 21% stage II
- 10% stage I

Colon cancer:
- 48% stage III
- 27.8% stage IV
- 16% stage II
- 8.2% stage I

HeRAMS and Secondary Program at WHO Syria Office - August 2016
88% of respondents mentioned that treatment facility
- **geographically inaccessible**, 
- fragmented referral mechanisms to higher levels of care,
- patient and family **unaware of** cancer symptoms.

HeRAMS and Secondary Program at WHO Syria Office - August 2016
Cancer management during Syrian Conflict

Waiting list for cancer treatment

Waiting list for cancer treatment (In days)

- Radiotherapy: 30 days
- Surgery: 15 days
- Systemic therapy/Chemotherapy: 8 days
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- Percent of patients completed cancer treatment without interruption:
  - Radiotherapy: 46%
  - Systemic therapy/Chemotherapy: 55%

- Percent of patients who completed treatment:
  - Radiotherapy: 68%
  - Surgery: 76%
  - Systemic therapy/Chemotherapy: 81%

- Proportion of patients abandoned treatment:
  - Patients abandonment treatment: 93
  - All cases of patients in need for treatment: 1603

- Causes for treatment abandonment:
  - Financial: 1
  - Logistic: 2
  - Disruption in services availability: 3
  - Health related: 4

HeRAMS and Secondary Program at WHO Syria Office - August 2016
Cancer management during Syrian Conflict

Causes of death among breast cancer women

- 13% due to treatment-related toxicities
- 87% due to progressive or replace disease
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Medical staff, pediatric oncology team:

Average number of staff available in the study's locations was:

- Medical oncologists: 5
- Surgeons performing cancer operations: 9
- Radiation oncologists: 2
- Palliative & supportive care providers: 0
- Medical physicist: 4
- Biomedical engineer: 1
- The nurse to patient ratio on the weekday shift was 3/16 patient

One private charity, Basma, is trying to help out by funding cancer drugs for poor families. The proportion of patients who need assistance has risen from about 30 percent to nearly 80 percent since the war began.
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Radiation Therapy

- Radiotherapy available in two hospitals: Albairuni and Tishreen
- LA: Albairuni and Tishreen hospitals
- Cobalt 60, brachytherapy, and other types Albairuni hospital
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Radiation Therapy

LA In private activity:

- 1 L.A in Homs (AlAMAL Hospital) completely destroyed on 2012
- 1 in Aleppo (no data about)
- 2 in Damascus: 1 out of service, 1 waiting authorization
Cancer management during Syrian Conflict

Radiation Therapy

- None of the hospitals mentioned any obstacles related to insufficient radiation oncologists
Cancer management during Syrian Conflict

Anti cancer medications

<table>
<thead>
<tr>
<th>Cancer Medicines on the 2013 EML</th>
<th>Cancer Medicines Added in 2015</th>
<th>Cancer Medicines Rejected by WHO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allopurinol</td>
<td>Hydrocortisone</td>
<td>Arsenic trioxide</td>
</tr>
<tr>
<td>Asparaginase</td>
<td>Hydroxyurea</td>
<td>Dasatinib</td>
</tr>
<tr>
<td>Bleomycin</td>
<td>Ifosfamide</td>
<td>Diethylstilbestrol</td>
</tr>
<tr>
<td>Calcium folinate</td>
<td>Mercaptopurine</td>
<td>Erlotinib</td>
</tr>
<tr>
<td>Carboplatin</td>
<td>Mesna</td>
<td>Gefitinib</td>
</tr>
<tr>
<td>Chlorambucil</td>
<td>Methotrexate</td>
<td>Nilotinib</td>
</tr>
<tr>
<td>Cyclophosphamide</td>
<td>Methylprednisolone</td>
<td></td>
</tr>
<tr>
<td>Cytarabine</td>
<td>Paclitaxel</td>
<td></td>
</tr>
<tr>
<td>Dacarbazine</td>
<td>Prednisone</td>
<td></td>
</tr>
<tr>
<td>Dactinomycin</td>
<td>Procarbazine</td>
<td></td>
</tr>
<tr>
<td>Daunorubicin</td>
<td>Tamoxifen</td>
<td></td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>Thioguanine</td>
<td></td>
</tr>
<tr>
<td>Docetaxel</td>
<td>Vinblastine</td>
<td></td>
</tr>
<tr>
<td>Doxorubicin</td>
<td>Vincristine</td>
<td></td>
</tr>
<tr>
<td>Etoposide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorouracil</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: EML, Model List of Essential Medicines; WHO, World Health Organization; ATRA, all-trans retinoic acid; G-CSF, granulocyte-colony stimulating factor.
All the hospitals (100%) mentioned the following:

- Unavailability of consistent supply of the essential cytotoxic drugs.
- Delay in treatment due to availability of drugs occurred 1 to times a month.
- Medicines from WHO Essential list were available in the facility.

<table>
<thead>
<tr>
<th>Medicines</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carboplatin</td>
<td>100%</td>
</tr>
<tr>
<td>Dacarbazine</td>
<td>75%</td>
</tr>
<tr>
<td>Etoposide</td>
<td>88%</td>
</tr>
<tr>
<td>Oxaliplatin</td>
<td>38%</td>
</tr>
<tr>
<td>Tamoxifen</td>
<td>25%</td>
</tr>
<tr>
<td>Cisplatin</td>
<td>100%</td>
</tr>
<tr>
<td>Docetaxel</td>
<td>38%</td>
</tr>
<tr>
<td>Fluorouracil</td>
<td>88%</td>
</tr>
<tr>
<td>Vincristine</td>
<td>63%</td>
</tr>
<tr>
<td>Leuprolelin</td>
<td>25%</td>
</tr>
<tr>
<td>Cyclophosphamide</td>
<td>63%</td>
</tr>
<tr>
<td>Doxorubicin</td>
<td>88%</td>
</tr>
<tr>
<td>Filgrastim</td>
<td>63%</td>
</tr>
<tr>
<td>Anastrazole</td>
<td>13%</td>
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</table>
Cancer management during Syrian Conflict

Anti cancer medications

Targeted and Immunotherapy

<table>
<thead>
<tr>
<th>Medicines</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rituximab</td>
<td>limited</td>
</tr>
<tr>
<td>Trastuzumab</td>
<td>NA</td>
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<tr>
<td>Bevacizumab</td>
<td>private</td>
</tr>
<tr>
<td>Imatinib</td>
<td>generic</td>
</tr>
<tr>
<td>nilotinib</td>
<td>limited</td>
</tr>
<tr>
<td>dasatinib</td>
<td>NA</td>
</tr>
<tr>
<td>gifitinib</td>
<td>limited</td>
</tr>
<tr>
<td>elrotinib</td>
<td>NA</td>
</tr>
<tr>
<td>thalidomide</td>
<td></td>
</tr>
<tr>
<td>lenalidomide</td>
<td>NA</td>
</tr>
<tr>
<td>pazobanib</td>
<td></td>
</tr>
<tr>
<td>PD/PDI-1</td>
<td>NA</td>
</tr>
<tr>
<td>Ibrutinib (BTK)</td>
<td>NA</td>
</tr>
</tbody>
</table>
Ranking of the causes for unavailability of essential medicines

The three main causes for the unavailability of medicines were:
- **lack of resources**
  significant cuts in the government's health budget plus a 90% drop in the value of the Syrian pound
- **unreliable supply chain**
  (economic sanctions led to close international pharmaceutical companies)
  India, Argentina, Iran, and Russia
- **unaffordable for patients**.
- **limited number of prescribing physicians** was the bottom in ranking
Cancer management during Syrian Conflict

Blood banking

Availability of blood typing services
- Yes: 75%
- No: 25%

Availability of blood bank services (including after-hours & weekends)
- Packed RBC: 75%
- Whole blood: 100%
- Platelets: 75%
Drug Level monitoring: Limited in private and general hospital: MTX, Tacrolimus, CSA, & phenytoin
Cancer management during Syrian Conflict

Laboratory services

Obstacles to regular availability of basic laboratory services

- Inadequate resources for procurement: 75%
- Unreliable supply chain: 25%
- Non-functioning equipment: 63%
- Disruptions in electricity: 75%
Cancer management during Syrian Conflict

Laboratory services

- Limited in some hospitals and research units
- Private labs
Cancer management during Syrian Conflict

Laboratory services

Obstacles to regular availability of pathology services

- Inadequate resource for procurement: 67%
- Unreliable supply chain: 67%
- Non-functioning equipment: 50%
- Insufficient support for processing: 67%
- Excessive volume resulting in delays: 33%
- Unable to communicate result to requesting provider: 0%
Cancer management during Syrian Conflict
Radiology

Availability of imaging services /studies

- Xray: 100%
- MRI: 100%
- Bone scan: 88%
- Advanced nuclear imaging: 13%

- In private activity: 2 PET CT Scann

HeRAMS and Secondary Program at WHO Syria Office- August- 2016
Cancer management during Syrian Conflict

Radiology

obstacles to regular availability of radiology services?

Yes 88%
No 13%

Types of Obstacles to regular availability of radiology services

non functioning equipment 57%
disruption in electricity 86%
insufficient technicians 57%
insufficient number of providers to interpret results 86%
unable to communicate results to requesting provider 14%

HeRAMS and Secondary Program at WHO Syria Office- August- 2016
Total cancer care costs paid by government and patient family and other sources

The International Committee of the Red Cross (ICRC)
World Health Organization
International Medical Corps

Percentage of chemotherapy costs is paid by:

- **Government**: 65.6%
- **Private donation including NGO**: 8.8%
- **Insurance scheme**: 8.1%
- **Patient family**: 17.5%
supportive therapy (eg, antibiotics, morphine)
diagnostic tests

Percentage of diagnostic tests (e.g., laboratory, radiology, pathology)

- Patient family: 25.8%
- Insurance scheme: 8.6%
- Government: 60.6%
- Private donation including NGO: 5.0%
Funds

Funds received from (NGO) and private donors

- Yes: 25%
- No: 75%

Percent of total budgetary expenditure allocated from private donations

- Domestic NGOs and donors: 0.0%
- International NGOs and donors: 22.5%
- Corporate donations: 0.0%

Financial private funds received to support oncology facilities

- Yes: 13%
- No: 88%

Parties who provide private funds

- Non governmental organization: 100.0%
- Local organization including religious groups: 0.0%
- Corporate organization: 0.0%
Cancer management during Syrian Conflict

Conclusions

• Syria has a national cancer control strategy which needs international Support considering that all anticancer center are free of charge
• The last Cancer statistics available are dated in 2009, and no statistics or reports were produced later. National Cancer registry needs to reactivate
• More than 7.5 million IDPS, leading to increase load of patients in these area
• Lack of access to healthcare facilities and treatments, and declining numbers of physicians and health workers.
• There are currently no oncologists in some cities
• Although basic diagnostic facilities and chemotherapy treatments are available, they are limited.
• Cost of cancer care is a major issue:
There are two hospitals in Damascus, and one in every main city patients can be referred to at no cost. These are inaccessible to patients in non-government controlled areas.
SYRIA

Islam is Peace