A global outlook on cancer epidemiology
Global cancer incidence is steadily increasing and estimated to reach around 25 million new cases in 2030, an increase of 66% compared to 2012. The rate of increase is larger in low- and middle-income countries mainly due to three factors: a population increase especially in older age groups, a faster decline in mortality from other diseases and an increasing exposure to tobacco in some populations.

A common estimate is that 30% of cancer deaths could be prevented by lifestyle-related measures: addressing smoking, unhealthy diets and sedentary lifestyles, and by offering vaccination for hepatitis and HPV-infections. There are however still significant gaps in our knowledge about effective strategies to change individual lifestyle habits on a larger scale. Another threat is that we have not seen a pattern where smoking needs to increase under a transition from low to middle income level and only thereafter decline. In that perspective, very large populations are now at risk of being more exposed to smoking.

Cancer mortality is also increasing. The mortality increase is disproportionate between high- and low-income countries, and the risk a cancer will be lethal is much higher in low- and middle-income countries. This is not only due to a higher incidence of cancers with a bad prognosis such as liver and oesophageal cancer in these regions, but also to less access to care. In 2015, less than 30% of low-income countries reported to the WHO that treatment services were generally available, compared to 90% in high-income countries. The cancer mortality is also changing in low- and middle-income countries from mainly infectious-related cancers to cancers associated with a westernized lifestyle.

Simultaneously, as a consequence of improved diagnosis and treatment, we experience increasing prevalence of cancer in most countries, except in some poor regions, with an overrepresentation of African countries.

Children – encouraging results, but a slow development
In high-income countries, over 80% of children with cancer now survive a cancer diagnosis. However, over 80% of the world’s children live in low- and middle-income countries where out
Adequate data on cancer occurrence and outcome critical to development and implementation of health policy.

**Rational planning:** must identify health problems, decide priorities for programmes of prevention & cure, evaluate whether goals are reached, and compare resource input and outcomes.

**Research priorities:** should be informed by issues of need and equity, as well as the spirit of scientific enquiry.

- **Incidence**
- **Mortality**
  - Person-years of life lost (PYLL)
  - Quality Adjusted Life Years (lost) (QALYs)
  - Disability Adjusted life years (lost) (DALYs)
- **Survival**
- **Prevalence**
Provides estimates of the INCIDENCE, MORTALITY and PREVALENCE
for 27 types of cancer
184 countries of the world

The **2012** estimates were based on the most recent data available to IARC, and on information publically available on the Internet, in **2013**
• 36 Cancers (plus « other » and totals)
• 184 countries worldwide

Uncertainty intervals (UI) of the estimated new cases and deaths (by sex and site) for each country

WILL BE OFFICIALLY AVAILABLE SEPTEMBER 2018 😞
The national estimates are based on ACTUAL DATA from the countries concerned (not from statistical models, as in other international health data estimates).

GLOBOCAN data are primarily from mortality statistics (vital registration), and from population-based cancer registries.

For many LMICs, population-based cancer registries are particularly important.

Obviously, the data used are not really from 2018 – they are the most recently available incidence (or mortality) rates, applied to the population estimates for 2018, to obtain estimated cases and deaths.
What data on cancer incidence to use?

IN PRIORITY ORDER:

A. High quality* national data or high quality regional (coverage greater than 50%)
B. High quality* regional (coverage between 10% and 50%).
C. High quality* regional (coverage lower than 10%).
D. National data (rates).
E. Regional data (rates).
F. Frequency data.
MORTALITY – from National Vital Statistics

No vital statistics?
Estimate mortality (M) from incidence (I) and survival,
\[ M = I \times (1 - \text{survival}) \]

No survival data?
– modelled survival
  - historic survival data from Europe, and some recent results from LMICs
  - “Human Development Index” for country and year
Estimated Cancers (millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Ages &lt; 65</th>
<th>Ages 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>5.9</td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>8.1</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>10.9</td>
<td>45%</td>
</tr>
<tr>
<td>2012</td>
<td>14.1</td>
<td>48%</td>
</tr>
<tr>
<td>2018</td>
<td>???</td>
<td>??%</td>
</tr>
</tbody>
</table>

Projected (millions)

- 2035: 24.0
  - 57% Ages < 65
  - ??% Ages 65+
2018 – ranking of top cancers the same.....
The most common cancer in each country.
Cancer prevention and control in the context of an integrated approach

1. URGES Member States, taking into account their context and institutional and legal frameworks, as well as national priorities:

(5) to collect high-quality population-based incidence and mortality data on cancer, for all age groups by cancer type, including measurements of inequalities, through population-based cancer registries, household surveys and other health information systems in order to guide policies and plans;

<table>
<thead>
<tr>
<th>Health expenditure per capita (PPP US$) (UNDP)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>5,795</td>
</tr>
<tr>
<td>United States</td>
<td>3,954</td>
</tr>
<tr>
<td>Sweden</td>
<td>3,132</td>
</tr>
<tr>
<td>Japan</td>
<td>2,450</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>30</td>
</tr>
<tr>
<td>Mozambique</td>
<td>27</td>
</tr>
<tr>
<td>Chad</td>
<td>20</td>
</tr>
<tr>
<td>Pakistan</td>
<td>19</td>
</tr>
<tr>
<td>Myanmar</td>
<td>4</td>
</tr>
</tbody>
</table>

Health Ministry:
? Cancer as a priority
?? Cancer registration as a priority

but who is going to pay???
Only a fraction (2.7%) of global investment in cancer research is spent on research directly relevant to low- and middle-income countries.
Support from International donors?

STILL largely focussed on infectious disease, maternal and child health....
**Need**
- Recognition of increasing cancer burden, transition to LMIC
- Need for continuous quality-assured data for planning, monitoring and evaluating cancer control plans

**Inequity**
- A long history of cancer registration, but many LMIC have not developed PBCR
- Ensuring their sustainable development is a global challenge

**Opportunities**
- Political momentum that prioritizes NCDs obliges countries to collect incidence data via registries to monitor certain targets

**Action**

**GICR** (http://gicr.iarc.fr) providing support to cancer registries in low- and middle-income countries to provide governments with the information on cancer burden needed to guide national cancer control planning. WHO has endorsed the GICR as the mechanism to support Member States in measuring the indicator on cancer incidence within the NCD Global Monitoring Framework.
The African Cancer Registry Network – the GICR Regional Hub for Africa

30 registries
23 countries
Thank you