WHO/IARC National Cancer Control Plan Tool and Case Studies

Raffaella Casolino, MD, Ph.D

Medical Oncologist
Technical Officer, Cancer Team, NCD Department
World Health Organization (WHO), Geneva, Switzerland
DECLARATION OF INTERESTS

Raffaella Casolino

No Financial Conflict of Interests

WHO Employee
Outline

1. Context for the tool
2. Priority Setting
3. Structure of the tool
4. Case study
1. Context for the tool
2. Priority Setting
3. Structure of the tool
4. Case study
Global commitment to reduce the burden of cancer

To meet the targets of the UN 2030 Agenda for Sustainable Development, including

- • 3.4 on NCDs (reduce mortality by 1/3 by 2030)
- • 3.8 on Universal Health Coverage (UHC)
Universal health coverage (UHC)

All people have access to the healthcare services they need without facing financial hardship.

Progress towards UHC is made through a process of progressive realization by moving sequentially along 3 dimensions:

- Increase the proportion of the population covered;
- Increase the proportion of prepaid funds and reduce out-of-pocket payments;
- Expand the number of services available to the population.

Prioritization is necessary in contexts with limited resources.
WHA 2017 mandate and WHO response

Development of a cancer priority setting and costing tool

- Support to Member States in costing the national cancer control plan
- Identifying and costing priority interventions included in national cancer planning
- Designing of or updating cancer interventions included in national health benefit packages
- Supporting the governmental stakeholders to generate an investment case
Outline

1. Context for the tool
2. Priority Setting
3. Structure of the tool
4. Case study
Priority-setting policy dialogue

Political but should be based on:
Data → Dialogue → Decision-making

1. Define interventions
2. Focus on scale-up
3. Evaluate system readiness
1. Define Priority Interventions: Best Buys

**NCD BEST BUYS**
EVIDENCE-BASED COST-EFFECTIVE PUBLIC HEALTH INTERVENTIONS TO PREVENT AND CONTROL NCDs

**CANCER**
- Prevent cervical cancer by vaccination against HPV and screening tests.
- Provide breast cancer screening for timely diagnosis and treatment.
- Provide surgery, chemotherapy and radiotherapy treatment for cancer, as well as palliative care services.

Close to 7 million lives saved

This investment yields a return of:

**US$ 7**
for each dollar invested

Raffaella Casolino

Content of this presentation is copyright and responsibility of the author. Permission is required for re-use.
## The 28 “Best Buys”

<table>
<thead>
<tr>
<th>Category</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tobacco Use</strong></td>
<td>• Increase excise taxes and prices on tobacco products</td>
</tr>
<tr>
<td></td>
<td>• Implement large graphic health warnings on all tobacco packages, accompanied by plain/standardized packaging</td>
</tr>
<tr>
<td></td>
<td>• Enact and enforce comprehensive bans on tobacco advertising, promotion and sponsorship</td>
</tr>
<tr>
<td></td>
<td>• Eliminate exposure to second-hand tobacco smoke in all indoor workplaces, public places and public transport</td>
</tr>
<tr>
<td></td>
<td>• Implement effective mass media campaigns that educate the public about the harms of smoking/tobacco use and second-hand smoke, and encourage behavioural change</td>
</tr>
<tr>
<td></td>
<td>• Provision of cost-covered effective population-wide support for tobacco cessation to all tobacco users</td>
</tr>
<tr>
<td><strong>Harmful Use of Alcohol</strong></td>
<td>• Increase excise taxes on alcoholic beverages</td>
</tr>
<tr>
<td></td>
<td>• Enact and enforce bans or comprehensive restrictions on exposure to alcohol advertising</td>
</tr>
<tr>
<td></td>
<td>• Enact and enforce restrictions on the physical availability of retailed alcohol</td>
</tr>
<tr>
<td><strong>Unhealthy Diet</strong></td>
<td>• Reformulation policies for healthier food and beverage products</td>
</tr>
<tr>
<td></td>
<td>• Front-of-pack labelling as part of comprehensive nutrition labelling policies</td>
</tr>
<tr>
<td></td>
<td>• Public food procurement and service policies for healthy diets</td>
</tr>
<tr>
<td></td>
<td>• Behavioural change communication and mass media campaigns for healthy diets</td>
</tr>
<tr>
<td></td>
<td>• Policies to protect children from the harmful impact of food marketing on diet</td>
</tr>
<tr>
<td></td>
<td>• Protection, promotion and support of optimal breastfeeding practices</td>
</tr>
<tr>
<td><strong>Physical Inactivity</strong></td>
<td>• Implement sustained, population-wide communication campaigns about best practices to promote physical activity, with links to community-based programmes and environmental improvements to enable and support behavioural change</td>
</tr>
<tr>
<td><strong>Cardiovascular Disease</strong></td>
<td>• Secondary prevention of rheumatic fever and rheumatic heart disease by developing a register of patients who receive regular prophylactic penicillin</td>
</tr>
<tr>
<td><strong>Chronic Respiratory Disease</strong></td>
<td>• Acute treatment of exacerbations of asthma with inhaled bronchodilators and oral steroids</td>
</tr>
<tr>
<td></td>
<td>• Acute treatment of exacerbations of chronic obstructive pulmonary disease with inhaled bronchodilators and oral steroids</td>
</tr>
<tr>
<td></td>
<td>• Long-term management of chronic obstructive pulmonary disease with inhaled bronchodilator</td>
</tr>
<tr>
<td><strong>Cancer</strong></td>
<td>• Vaccination against human papillomavirus (1-2 doses) of 9–14-year-old girls</td>
</tr>
<tr>
<td></td>
<td>• Cervical cancer: human papillomavirus DNA screening, starting at the age of 30 years with regular screening every 5 to 10 years</td>
</tr>
<tr>
<td></td>
<td>• Cervical cancer: early diagnosis programmes linked with timely diagnostic work-up and comprehensive cancer treatment</td>
</tr>
<tr>
<td></td>
<td>• Breast cancer: early diagnosis programs linked with timely diagnostic work-up and comprehensive cancer treatment</td>
</tr>
<tr>
<td></td>
<td>• Colorectal cancer: early diagnosis programs linked with timely diagnostic work-up and comprehensive cancer treatment</td>
</tr>
<tr>
<td></td>
<td>• Prevention of liver cancer through hepatitis B immunization</td>
</tr>
<tr>
<td></td>
<td>• Childhood cancer: early diagnosis programmes linked with timely diagnostic work-up and comprehensive cancer treatment, focusing on six index cancers of WHO’s Global initiative for childhood cancer</td>
</tr>
<tr>
<td></td>
<td>• Early detection and comprehensive treatment of cancer for those living with HIV</td>
</tr>
</tbody>
</table>
2. Focus on scale-up: progressive realization

Best investment must reach scale & achieve value for money

More people  More goods

Two packages with incremental price

Baseline: $US 5.75 per capita
↑funds: $US 6.38 per capita

More people

Basic package:
40%→75% population
Radiotherapy for high-impact, curative cancers
3 targeted therapy (eg, rituximab)
Lives saved: ~500 by 2040

High technical package for 40% population
Radiotherapy for (IMRT) all indications
10+ targeted therapy (including immunoRx)
Lives saved: ~200 by 2040

MORE PEOPLE

MORE GOODS

Raffaella Casolino
2. Focus on scale-up: progressive realization

The most effective way to improve cancer outcomes and achieve greater equity is to maximize the number of individuals who have access to effective services while ensuring financial protection before introducing new services.

More people > More goods

Focus on expanding coverage before introducing new services

Baseline: $US 5.75 per capita
↑ funds: $US 6.38 per capita
Two packages with incremental price

**Basic package:**
40%→75% population
Radiotherapy for high-impact, curative cancers
3 targeted therapy (eg, rituximab)
Lives saved: ~500 by 2040

**High technical package** for 40% population
Radiotherapy for (IMRT) all indications
10+ targeted therapy (including immunoRx)
Lives saved: ~200 by 2040
3. Evaluate system readiness

Coverage 1% per yr:
- Yes

Coverage 2% per yr:
- Not feasible

Additional salary (included in package): $US 7,000 per provider

Training (included in programme cost): $US 200,000 per year

Implementation approach must be based on feasibility & system readiness

Plan prioritizes breast cancer early detection – what is feasible?

Not needed
Purchase 30 new machines for breast cancer screening programme
Outline

1. Context for the tool
2. Priority Setting
3. Structure of the tool
4. Case study
Interventions

Cost

Disease burden, system capacity

Scenarios / scale-up

1. Assessments tool (HHFA)
2. UHC Compendium
3. Cancer module
4. Integrated Health Tool
5. EPIC tool

Define interventions for UHC benefit packages (priority setting & costing)

Produce cancer policy (eg. NCCP) (priority setting, costing)

Investment case (financial planning +/- advocacy)

Health system planning (priority setting including service organization)

INPUT

TOOL(s)

OUTPUTS (Use cases)
UHC Compendium: a global repository of interventions for UHC

Inputs needed to support Health Benefit Packages design

Define interventions for UHC benefit packages (priority setting & costing)

Health system planning (priority setting including service organization)

Developed with ESMO support
## HEALTH PRODUCT

<table>
<thead>
<tr>
<th>Bundle ID</th>
<th>Bundle name</th>
<th>Target population</th>
<th>Type of visit (standardized classification - select from dropdown)</th>
<th>Pop-in-need (Visit level - text description)</th>
<th>Actions</th>
<th>Tasks</th>
<th>Healthcare Setting</th>
<th>Name of Medicine (to Health Product)</th>
<th>Included in EML?</th>
<th>Notes/Description</th>
<th>ART Code</th>
<th>Regime of administration</th>
<th>Strength</th>
<th>Units per day</th>
<th>Numbers of days</th>
</tr>
</thead>
</table>
...To the online platform; 24 Cancer Types

UHC Compendium database is linked to an interactive service selection tool which allows users to review from a country specific context and burden of disease.

Countries will be able to select services that best fit their needs, then review package costs and cost-effectiveness and revise packages content based on explicit criteria.

SPDI allows a package to be contextualized and services assigned to country specific service delivery platforms.

Quick access to WHO guidance and references - creating one-stop access to the most up-to-date guidance.

Allows planners and experts to collaborate on package development and revisions.
<table>
<thead>
<tr>
<th>Tasks</th>
<th>Health worker 1</th>
<th>Health worker 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review advice, provide counselling and information and obtain consent</td>
<td>Nursing Professionals</td>
<td>Nursing Professionals</td>
</tr>
<tr>
<td>Conduct clinical assessment specific to the therapy</td>
<td>Specialist Medical Practitioners</td>
<td>Specialist Medical Practitioners</td>
</tr>
<tr>
<td>Prescribe intravenous chemotherapy</td>
<td>Pharmacists</td>
<td>Pharmacists</td>
</tr>
<tr>
<td>Conduct independent check of intravenous chemotherapy prescription regimen and doses</td>
<td>Pharmacist</td>
<td>Specialist Medical Practitioners</td>
</tr>
<tr>
<td>Prepare hazardous medicine</td>
<td>Nursing Professionals</td>
<td>Nursing Professionals</td>
</tr>
<tr>
<td>Administer intravenous targeted therapy</td>
<td>Specialist Medical Practitioners</td>
<td>Nursing Professionals</td>
</tr>
<tr>
<td>Monitor during administration of intravenous chemotherapy</td>
<td>Pharmacists</td>
<td>Specialist Medical Practitioners</td>
</tr>
<tr>
<td>Provide post-procedural counselling and advice</td>
<td>Nursing Professionals</td>
<td>Nursing Professionals</td>
</tr>
<tr>
<td>Provide post-procedural medical care</td>
<td>Specialist Medical Practitioners</td>
<td>Specialist Medical Practitioners</td>
</tr>
<tr>
<td>Medical devices</td>
<td>Reusable Clinical assessment Module, Single use Clinical assessment, Single use Blood sampling, Reusable Hazardous Medicine Preparation Module, Single use Hazardous Medicine Preparation ...</td>
<td></td>
</tr>
<tr>
<td>In vitro diagnostic tests</td>
<td>Paclitaxel, Epoezide, Carboplatin</td>
<td></td>
</tr>
<tr>
<td>Medicines</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Type Of Care</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Action Category</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Life stage</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Programmes</td>
<td>Non-communicable diseases</td>
<td></td>
</tr>
<tr>
<td>Links</td>
<td>[core] Diagnosis of lung cancer and management with surgery, systemic therapy and/or radiation therapy</td>
<td></td>
</tr>
<tr>
<td>Links</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>
Chemotherapy concurrent to radiotherapy

NONCOMMUNICABLE DISEASES AND MENTAL HEALTH

Cancer
- Cervical cancer
  - Management of invasive cervical cancer
    - Chemotherapy concurrent to radiotherapy
      - Curative surgery
      - Curative radiotherapy
      - Monitoring for toxicities
      - Patient counseling
      - Palliative and supportive care

Raffaella Casolino

Short text description
Patients with more advanced stage of cervical cancer (1B2 onwards) are treated with concurrent chemoradiation. The exact treatment protocol will depend on the stage of cancer, histology findings, performance status, and preferences of a patient.

Health programme
Noncommunicable diseases, Palliative care

Target population
Patients with invasive cervical cancer

Age/Life course stage
Relevant stages are marked in blue

Resources required
- Health workers: 4
- Medicines: 4
- Medical devices: 1

Delivery platform
Specialized inpatient services

SDG context
3.4 By 2030, reduce by one third premature mortality from communicable diseases through prevention and treatment and promote mental health and well-being

Classifications
ICD-11
- Malignant neoplasm of cervix uteri, unspecified
- MIS17.10 Chronic cancer, pain
- CMP19 Chemotherapy section for neoplasm
- X97100 Cancer chemotherapy drug regimen

ICHD
- NMF 6A.8A Destruction of lesion or tissue of cervix by radiation therapy

ICD (International classification of functioning)
- ICD-10
- E1304 Energy and drive functions, unspecified

References
WHO GRC-approved guideline

Other WHO reference documents
N/A

Disclaimer: This page provides an illustration of the resource requirements for the selected clinical action. Resource requirements vary in different contexts, and this illustration should be used only as a reference point for contextualization.
The WHO/IARC Priority Setting and Costing Tool (Cancer Module)

Developed with ESMO support
**Development**

From Old Excel Sheets

To New Universal Sheets

Thousands of data points for 24 tumour types
Evolution: Dynamic State Transition Model

Rory Watts, Forecast Health Australia

To software development and modeling
Present: Online Interface
Outline

1. Context for the tool
2. Priority Setting
3. Structure of the tool
4. Case study
The Process: 3 D

Inputs
- Assessment tool
  - IARC, WHO, IAEA database
  - Country situational analysis

Current service analysis
- Country Snapshot
  - Service provision,
  - Unmet need
  - Quality, coverage

Select package, scale-up
- User select, scale-up
  - 24 cancers
  - >150 interventions

Outputs
- Impact
- System requirement
- Scale-up
- Total costs

Data
- Dialogue
- Decision

Raffaella Casolino

Content of this presentation is copyright and responsibility of the author. Permission is required for re-use.
Country Example

1st Feasibility assessment, scenarios and priorities

<table>
<thead>
<tr>
<th>Management Policies</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer guidelines</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Cancer guidelines incl. spec.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Cancer guidelines (updated in hospitals)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Cancer guidelines (last updated)</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Cancer guidelines (include referral criteria)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Breast cancer early detection ggm/guidelines</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Cervical cancer early detection ggm/guidelines</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Colorectal cancer early detection ggm/guidelines</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

2nd Health system planning & capacity

- Pathology
- Radiology
- Cancer Diagnosis
- Prostate Cancer Diagnosis
- Palliative care

EQUIPMENT
- Breast cancer defined referral
- Cervical cancer defined referral
- Childhood cancer defined referral
- Equipment

CONSUMABLES
- Records
- Endoscopy
- Radiology and Nuclear Medicine Treatment
- Palliative care

TRAINING
- In service training
- Quality control programs
- Early Diagnosis Policies
- Service Organization
- Others

Goal: ↑coverage by 1% per yr, focusing on women + children

Capacity: workforce as bottleneck to reach goal

3rd Generate business model

Mortalidade Reference

Mortalidade 1% Intervention

Baseline (no further investment)

Scale-up (1% ↑coverage / year)

Deaths per year

Investment: ↑$US 0.30 to save 100 lives per year (50% <60yo)
Conclusions

• Cancer is emerging public health priority, improving access is achievable, WHO ready to support
• Costing cancer control plan is critical step to effective implementation and improving access to cancer care
• Cancer control doesn’t need to be expensive, but it does need to be prioritized
• Priority-setting, stakeholder-led “dialogues” foundational to success, founded on “data”
• Investment cases must show the full social and economic impact of cancer
• Align with broader policy discussions (eg, national health plans)
• WHO – working with IARC, IAEA, ICCP and others – have tools to support
Further information on cancer is available at: https://www.who.int/health-topics/cancer.

Dr Bente Mikkelsen, Director, Department of NCDs (mikkelsenb@who.int);
Dr Slim Slama, MND Unit Head, Department of NCDs (slamas@who.int);
Dr André Ilbawi, Technical lead, cancer control, Department of NCDs (ilbawia@who.int)
Dr. Roberta Ortiz, Medical Officer, cancer control, Department of NCDs (ortizr@who.int)
Dr. Filip Meheus, Health Economist, Health Economics Unit (meheusf@who.int)

casolinor@who.int