“Cuban National Health System”.

May 2012
The humanistic and solidarity principles that characterize Cuban Public Health are endorsed by the Constitution of the Republic of Cuba

Article 50
Everyone has the right to receive health care and protection. The state guarantees this right.
El cáncer como problema de Salud Pública

Cuban Population pyramid 2010

% Population > 60 years

Total population: 11´236,336
Urban Population: 75,4%
West Havana Scientific Pole

- 40 ORGANIZATIONS
- 12,000 WORKERS
- 7,000 SCIENTISTS and ENGINEERS
- 150 RESEARCH PROJECTS
Scientific Pole Outcomes

- PREVENTIVES VACCINS:
  ANTIMENINGOCOCCAL (UNIQUE IN THE WORLD)
  ANTILEPTOSPIROSIS
  ANTITYPHOID
  RECOMBINANT ANTIHEPATITIS B
  HAEMOPHILUS INFLUENZAE (TYPE B)
  TETRAVALENT (DPT + HB), PENTAVALENT (DPT + HB + Hib)

- OTHERS   BIOTECHNOLOGICAL PRODUCTS AS RECOMBINANTS INTERFERONS ALFA AND GAMMA
  SUMA EQUIPMENT
  LEUFERON COLLYRIUM
  INTACGLOBIN
  RECOMBINANT STREPTOKINASE
  TRANSFER FACTOR
  HEBERPROT- P
  PHARMACEUTICAL INDUSTRY INCLUDING CITOSTATIC PLANT

- CANCER RELATED TREATMENTS
  VACCINS (EGF, GANGLIOSIDES, ANTI HER 1, 1E10) AND MONOCLONAL ANTIBODIES AGAINST CANCER
  (ANTI EGFR, ANTI HER2-NEU, ANTI CD 20) AND SUPPORTIVE CARE AS ERITHROPOIETIN, COLONY STIMULATOR FACTOR,
  ANTIEMETICS.

- MONOCLONALANTIBODIES FOR NON CANCER DISEASES AS REUMATOID ARTHRITIS, PSORIASIS, BLOOD TEST
CANCER AS NATIONAL HEALTH PROBLEM
The Cuban’s Oncological school begins in the decade of 1930 of the last century and has been receptive of all the world advances of the specialty. After 1970, with the integration of oncological services at the country, and the onset of the National Institute of Oncology and Radiobiology (NIOR) in Havana City, began a new era in the development of Oncology and Oncologists.
For that time the public medical services were deficient and private care was the rule. Some of this private doctors began to assist only cancer patients, at their offices and at public hospitals, most of them only as social work. At the country were built 3 facilities only for cancer patients, supported in part by the government but mainly by private donations. Education and information with important international centers of the world were obligated items, and their experiences and results were published at Archivos de Cancerología, a journal with international circulation.

After 1959 medical care began to change. Public hospitals and clinics were converted into centers with higher standards of care, with easy access to patients and free of charge. An important number of professionals left the country but the qualification and devotion of the remainders that formed the new generation of professionals guaranteed medical care. For Oncology it was no different and new generation of oncologists began to emerge.
After 1960, through the MINSAP´s Section of Fight Against Cancer was conformed a Program whose objectives were:

- To Develop a National Oncological Network
- To Develop a National Cancer Registry
- To Purchase equipment for Cancer´s Prevention and Treatment
- To Update the knowledge of Professionals at highest levels
- Theoretical and Practical update in new technologies related with cancer management
- To Promote Cancer research
For these purposes there were created

- National Institute of Oncology and Radiobiology (NIOR)
- Cuban Society of Oncology, Radiotherapy and Nuclear Medicine
- National Group of Oncology (NOG)
- National Cancer Registry (NCR).
This NCR was created with the purpose of to study the risk of several cancer’s types and to compare different subgroups in the population of the same area.

Report

Hospital

Cancer Province Registry

National Cancer Registry Central’s office

Clinic Records
Histopathological files
Main causes of death in Cuba 2010

- Cardiovascular diseases: 211.8
- Malignant tumors: 197.5
- Neurovascular diseases: 86.9
- Influenza and Pneumonia: 47.5
- Accidents: 42.0
- Arterial diseases: 24.5
- Chronic diseases of the airways: 28.6
- Diabetes Mellitus: 23.5
- Self-inflicted injuries: 13.7
- Cirrhosis and other diseases: 10.7

RATE X 100 000 INHABITANTS
In 2010: 5,104 new cases

- men: 3,393  60.3  42.2
- women: 1,711  30.5  19.8
Cancer Incidence in Cuba 2006
Cancer localizations by gender

Females

Pulmón 10%

Mama Femenina
Piel
Pulmón
Cuello de Utero
Colon
Cuerpo de Utero
Ovario
Recto
Tiroides

Tasa x 100 000 habitantes ajustada a la Población Mundial

Fuente: Registro Nacional de Cáncer. Datos preliminares

Males

Pulmón 19%

Pulmón
Piel
Prostata
Laringe
Colon
Boca
Vejiga
Estómago
Esófago
Páncreas

Tasa x 100 000 habitantes ajustada a la Población Mundial

Fuente: Registro Nacional de Cáncer. Datos preliminares

Tasa x 100 000 habitantes ajustada a la Población Mundial
MORTALITY

What we have in Cuba?

• Year 2010: 5,100 cases
  men: 3,274  58.2 (rate x 100,000 ih)
  women: 1,826  32.6 (rate x 100,000 ih)

• Lung cancer are 23% of deaths in Cuba, and are 17% at the world.

• 86% are related with tobacco use. Avoidable death 3,386: 92 % for men and 75 % for women.
CANCER MORTALITY IN CUBA 2008

Cancer localizations by gender

**FEMALE**

- Pulmón: 19.2%
- Mama: 15%
- Colon: 10%
- Cervix: 5%
- Hígado: 3%
- Pancreas: 2%
- Sist Hematop: 2%
- Cuerpo de Útero: 2%
- Estómago: 2%
- Útero S/E: 2%

**MALE**

- Pulmón: 27.1%
- Próstata: 20%
- Colon: 15%
- Laringe: 5%
- Estómago: 4%
- Esófago: 3%
- Sist. hemat: 3%
- Prostata: 3%
- Hígado: 3%
- Páncreas: 3%

**Fuente:** DNE

**TAM X 100 000 habitantes**
CANCER IN CUBA

Second cause of death in Cuba

🌟 Legend: First cause of death

Source: Mortality Series. National Statistics Division. MINSAP
CANCER AS NATIONAL HEALTH PROBLEM

Source: Mortality Series. National Statistics Division. MINSAP
# Cancer mortality by ages

**Years selected 1970-2010**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>5-14</td>
<td>6.5</td>
<td>5.8</td>
<td>4.2</td>
<td>4.9</td>
</tr>
<tr>
<td>15-49</td>
<td>28</td>
<td>25.1</td>
<td>30.9</td>
<td>32.5</td>
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<tr>
<td>50-64</td>
<td>262.4</td>
<td>247.7</td>
<td>286.9</td>
<td>290.0</td>
</tr>
<tr>
<td>65 and more</td>
<td>929.8</td>
<td>903.4</td>
<td>1034.8</td>
<td>1041.1</td>
</tr>
</tbody>
</table>

Source: Statistical Year book of Health 2011. MINSAP
### CANCER AS NATIONAL HEALTH PROBLEM

Years of potential life lost by main causes of death / 1,000 inhabitants from 1-74 years. Selected years.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Heart diseases</td>
<td>11.3</td>
<td>12.3</td>
<td>12.8</td>
<td>11.6</td>
<td>11.1</td>
<td>11.5</td>
<td>10.5</td>
</tr>
<tr>
<td>Malignant tumours</td>
<td>13.3</td>
<td>12.8</td>
<td>13.5</td>
<td>15.5</td>
<td>17.9</td>
<td>18.3</td>
<td>17.9</td>
</tr>
</tbody>
</table>

Source: Mortality Series. National Statistics Division. MINSAP
CANCER AS NATIONAL HEALTH PROBLEM

Note: skin cancer excluded
CANCER MORTALITY. WOMEN

CANCER AS NATIONAL HEALTH PROBLEM

Note: skin cancer excluded
CANCER INCIDENCE BY GENDER IN CUBA. FORECAST 2015

Source: National Statistics Division. MINSAP

Nota: Pronósticos: regresión lineal segmentada
# Mortality/Incidence rate

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2007</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>M/I</td>
<td>0.58</td>
<td>0.68</td>
<td>0.67</td>
</tr>
</tbody>
</table>

**YEAR 2015 - 0.79**

- **23 700 DEATHS**
- **3 340 MORE**

¿*We may avoid these deaths?*
National Unit for Cancer Control (UNCC) and The Comprehensive Cancer Control Program (IPCC)
National Unit for Cancer Control (UNCC)
And Comprehensive Cancer Control Program (IPCC)

Created by the Health Minister in 2006, this Unit belong to MINSAP. It objective of work is the direction of the IPCC. The mission is to integrate, in a National Strategic Program of Health, the action and intersectoral collaboration of the population, in order to generate a systematic and coordinated response with the aim of decrease cancer mortality and contribute to increase a high quality expectancy of life of the Cuban population.
National Unit for Cancer Control (UNCC)  
And The Comprehensive Cancer Control Program (IPCC)

This unit works as a coordination institution and works with teams at the place and distance, using INFOMED as conduct thread. This UNIT converts the data in evidences to define decisions, generating administrative actions from Medical and Social Care levels in close relations with all MINSAP´s areas.
This team is integrated by the Chief and 4 specialists (Programs, Cancer Registry, Development and the Observatory) working all time to this items. Moreover 369 experts work as collaborators, with different professional profiles, working in or out the sectorial, organized in 23 Specials Groups of Work (GET) and 498 medical doctor as Cancer Control in Primary Care, all of them with part time.
For scientific management and innovation they have the support of the Knowledge Management and Advanced Technology (GESIT), the National Group of Oncology, the National School of Public Health (ENSAP) and the Scientific Council of NIOR, in relation with the development of the specialty.
This Program is more than rules to improve the oncological medical care (even so it has it too): is an organized effort designated to modify the “hard indicators” as incidence, mortality and survival. Contain multi-sectoral actions at all levels of health system, implying:

- Educational system,
- Local governments,
- Social Sciences Institutions,
- Social and Political organizations
- and other actors of Cuban Society.
Cancer Control Program Evolution. Milestone 2006

- **2010-2011**: Strategic component for familial and nurse program / End of life patient's care.
- **2008**: Integrated Cancer Control Program/ National Cancer Registry
- **2007**: Comprehensive Cancer Control Program (IPCC)
  - **1999**: National Program for Cancer Control, National Program of Tobacco Prevention, National Program for Education in Cancer
  - **1995**: National Program for Cancer Control, National Program of Tobacco Prevention
  - **1992**: National Program for Cancer Control
  - **1990**: Cancer Mortality Reduction Program, Breast Cancer Screening Program
  - **1986**: Cancer Mortality Reduction Program
  - **1983**: Early diagnosis of cervical Cancer National Program, Early diagnosis of oral cavity Cancer National Program
  - **1968**: Early diagnosis of cervical Cancer National Program

CANCER AS NATIONAL HEALTH PROBLEM
First Uterine Cervical cancer screening program in 1968
In 1968 knowing the high incidence of cervical cancer, first cancer localization at that time, mainly diagnosed at advanced stage of the disease in Cuban women, the first screening national program was designed at the end of this decade using Papanicolaou test and including entire female population after first sexual relation or with more than 20 years old.

This program is still running with several modifications.

Up to date Cervical cancer is the 3\textsuperscript{rd} cancer localization in female incidence and the 4\textsuperscript{th} cause of death due to female's cancer.
Ministry of Public Health

Integrated Cancer Control Program

UNCC

Functional Structure

Levels of care of NHC

Experts Groups

Scientific Pole and others sectors

Components of the strategy

Education- Communication

Screening at PHC

Diagnosis / Treatment

Rehabilitation

Continued Care

Technical/Scientific development

Evaluation and Quality

Cancer Observatory

Cancer Control National Network
• Integrated Program for Cancer Control in Cuba. Pautas para la gestión. 2010.


• Integrated Program for Cancer Control in Cuba. Cancer annual report. Executive Resumen

• Integrated Program for Cancer Control in Cuba. Integrated plan for human resources education. 2010-2012
Strategic advantages 2012: Systematic actions are organized for cancer control from Primary Health Care

Healthy or symptomatic people

Patients requiring specialized diagnosis and/or treatment or inclusion in clinical trials

NJOR or another national institutions as corresponding references hospitals

Cancer suspicious

References hospitals for diagnostic confirmation and oncospecific treatment

Require Radiotherapy or Nuclear Medicine procedures

Corresponding references hospitals
Mujeres 25-64 años
Toma de muestra cada 3 años:
- Consultorios
- Policlínico
- Hospital Rural

Laboratorios de Citodiagnóstico

Citología Negativa (repetir a los 3 años)
Citología No útil (repetir en el año)
Citología Anormal (HPV, NIC o Cáncer Invasor)

CONSULTA PATOLOGÍA DE CUELLO

Los resultados siempre regresan al área de salud y se le informan a la paciente

BAJAS NEGATIVAS Y ALTAS

NIC y Etapas 1a - 1b1

DIAGNÓSTICO, TRATAMIENTO Y SEGUIMIENTO

CÁNCER INVASOR Etapas 1b - IV
Unidades oncológicas

Equipo de radiofrecuencia para electocirugía del cuello uterino
EXAMEN FISICO (1 vez al año) a partir de los 30 años.

AUTOEXAMEN DE LA MAMA (1 vez al mes) a partir de los 30 años.

MAMOGRAFIA (cada 2 años) para las mujeres de 50 a 64 años.
### Ensayo InmunoCromatográfico para la detección de sangre oculta en las heces fecales

#### SUMASOHF
En proceso de registro en el CECMED

#### Ensayo de referencia (colonoscopia)

<table>
<thead>
<tr>
<th>SUMASOHF</th>
<th>POSITIVO</th>
<th>NEGATIVO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSITIVO</td>
<td>33</td>
<td>1 (FP)</td>
<td>34</td>
</tr>
<tr>
<td>NEGATIVO</td>
<td>0 (FN)</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>TOTAL</td>
<td>33</td>
<td>8</td>
<td>41</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HEXAGON OBTI</th>
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</thead>
<tbody>
<tr>
<td>POSITIVO</td>
</tr>
<tr>
<td>NEGATIVO</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

### Estudio de sensibilidad en pacientes con el diagnóstico de cáncer de colon
Instituto de Gastroenterología
ALGORITMO PARA EL DIAGNÓSTICO DEL CÁNCER DE PRÓSTATA

Hombre asintomático de 45 años con antecedente familiar de cáncer de próstata de primera línea o mayor de 50 años que solicita PSA. (Se realizan estudios en áreas demostrativas para definir a futuro la política de pesquisa)

Si PSA Total ELEVADA

PSA Libre / PSA TOTAL

Si < 25% ALTO RIESGO
Considerar confirmación
Tacto Rectal
Ultrasonido
Ultratransrectal
Biopsia o evolucionar

Atención primaria de salud consultorio médico de familia

Paciente sintomático

Indicar PSA

Normal
0.0 a 4.0 ng/ml

Dudoso
4.1 a 10 ng/ml

Positiva
>10 ng/ml

Examen físico en sintomáticos

Normal

Alterado

≤ 25 % Riesgo

> 25% Normal

PSA libre / PSA total

Consulta de urología en hospitales seleccionados según regionalización y tratamiento

REPETIR PSA AL AÑO
ALGORITMO DEL CONTROL DE CÁNCER DE PULMÓN

Fumador activo extumador

Hombre o mujer en contacto con el Sistema Nacional de Salud

EXPLORAR TABAQUISMO

Fumador Pasivo

APP 1

SI > 40 años, explorar 1 2 3 4 5

Imagen Radiológica

3 Exposición a la contaminación ambiental

Inhalantes (asbesto, sílice, níquel, zinc, arsénico, cromo, hidrocarburos aromáticos policíclicos, benceno, humo de tabaco) y radiaciones ionizante. Precisar tiempo de exposición.

Síntomas respiratorios relacionados con el tumor, síntomas generales, manifestaciones paraneoplásicas y metastásicas

APF 2

De cáncer de pulmón de 1ra línea.

Fumador + alguna de las condiciones 1-2-3-4-5, SE INDICARÁ RX FRONTAL, DE SER NECESARIO RX LATERAL Y ESPUTO CITOLÓGICO

Discusión del caso con el Coordinador de control de cáncer y el GBT en el área de la salud

Caso (-)

Seguimiento c/6 meses; Anamnesis y Examen Físico

Caso sospechoso

Consulta con el grupo multidisciplinario hospitalario según regionalización

Estudios de confirmación diagnóstica y estadificación

Rediscusión del caso y propuesta de tratamiento con la participación del médico de familia y el Coordinador de Control del Cáncer de los policlínicos

CÁNCER DE PULMON
Prevalence of Tobacco Smokes. Cuba 1978-2010

%  

68.9 52.9 42.2 40.1 37.5 36.8 31.9 24

Prevalence  Tendency
Tobacco Prevention

The main important rule in the morbidity and mortality for the diseases related with it.
We may prevent Cancer

Vaccines, exercises, healthy diet, avoid tobacco and alcohol, no sun exposure contribute to decrease your and your family’s cancer risk

Begin today