



جمعية للاسلمى لمحاربة داء السرطان
ASSOCIATION LALLA SALMA DE LUTTE CONTRE LE CANCER

المملكة المغربية
ROYAUME DU MAROC



وزارة الصحة
Ministère de la Santé

National Cancer Prevention and Control Plan

2010 - 2019

Strategic axes and measures



His Majesty King Mohammed VI
accompanied by Her Royal Highness Princess Lalla Salma
laying the foundation stone of Ibn Rochd oncology center
Casablanca, April 13, 2006

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Abbreviations

ALSC :	LALLA SALMA Association against Cancer (LSAC)
AMO :	Mandatory Health Insurance
BPW :	Building and Public Works
KAP :	Knowledge, Attitude and Practice
UMC :	University Medical Center (University Hospital)
IARC :	International Agency for Research on Cancer
CISH :	Colorimetry in situ hybridization
NRPC :	National Radio-Protection Center
POC :	Proximity oncology center
ROC :	Regional Oncology Center
PHCS :	Primary Health Care Services
FISH :	Fluorescence in situ hybridization
HDR :	High Dose Rate Curietherapy
HPV :	Human Papilloma virus
HBV :	Hepatitis B Virus
IEC :	Information Education Communication
IFCS :	Health Career Training Institute
MRI :	Magnetic Resonance Imaging
STI :	Sexually Transmitted Infection
IVA :	Acetic Acid Visual Inspection
HL :	Hodgkin's lymphoma
NHL :	Non-Hodgkin's lymphoma
MH :	Ministry of Health
WHO :	World Health Organization
NGO :	Non Governmental Organization
PET :	Positron emission tomography
NCPCP :	National Cancer Prevention and Control Plan
ROP :	Regional Oncology Point Pole (Regional Oncology Center)
MCM :	Multidisciplinary Consultation Meetings
GCRCR :	Grand-Casablanca-Region Cancer Register
CAT :	Can Scan
TDM :	Tom densitometry
DPS :	Dosimetry Planning System
UMC :	University medical center
UV :	Ultra-violet
WHA :	World Health Assembly

Preface

Fighting cancer is a lifelong mission. It implies a long struggle which enhances our humanity and teaches us humility, solidarity and hope.

When the Association against cancer, which bears my name, was created, I was aware of the scale of the challenge, the immensity of the task and the extent of the commitment required.

However, the solicitude shown by His Majesty King Mohammed VI, may God be with him, and his strong support are invaluable to the accomplishment of this inspiring mission.

The needs were as huge as the expectations. With 30,000 Moroccan men and women affected by cancer each year - and the family tragedies associated with the disease - the task seemed daunting.

We had an obligation to achieve concrete results, which means we had to act quickly and efficiently to alleviate suffering, shine a light of hope and make sure programs and actions were sustainable.

Needless to say, embarking on such a mission could not have been possible without the support of all the stakeholders involved, and the constant dedication of the competent professionals concerned. We had to act swiftly, often relying on nothing more than mere estimates gleaned from certain institutions.

We were, however, fully aware of an indisputable fact: 40 percent of cancers can be prevented by improving our lifestyle. This is with respect to prevention, and it is a lot! As regards treatment, we knew that more than half of cancer patients could be treated and cured, provided the disease was diagnosed early and patients were properly taken care of.



Although there was much goodwill, it had to be properly channelled and we had to have targeted programs.

Exactly what needs were we going to address? Where? When? How? And how much was it going to cost? All these questions needed answers.

The need to define a clear, strategic vision had become our greatest challenge and a decisive element for success. That was when we realized we had to develop the present cancer plan.

With this plan - or roadmap I might say - the future of the fight against cancer in Morocco is now clearly outlined.

As is the case in developed countries, Morocco now has a National Plan for Cancer Prevention and Control. It is the outcome of an effective partnership between our Association and the Ministry of Health.

The plan, which takes into account Moroccan specificities, is made up of 78 clear-sighted measures, developed in light of existing and potential resources. It advocates new approaches in terms of screening, treatment and social support, all of which are consistent with our cultural values and based on the active involvement of the entire society. The implementation of this plan will have a significant impact on the fight against cancer and will, I am sure, serve as a model to follow.

I should therefore like to pay tribute to the teams who participated with such professional dedication in the development of this clear-cut, comprehensive and ambitious plan, whose successful implementation I am already looking forward to.

HRH Princess Lalla Salma
President
Lalla Salma Association Against Cancer

*“ Together
Against
Cancer „*

1. CANCER PLAN: WHY AND HOW ?

1.1 Introduction

The word «cancer» is used generically to refer to more than a hundred different diseases, among which malignant tumors located in different sites (breast, uterine cervix, prostate, stomach, colon and rectum, lung, mouth, etc.), leukemias, osteosarcomas, Hodgkin's and non Hodgkin's diseases. All these forms have in common an impairment of the mechanisms regulating the growth of cells, their normal proliferation and death; this impairment, which starts off as a slight anomaly, acquires a progressively higher degree of severity, eventually leading to the invasion of adjacent tissues by cancerous cells, and even reaching other regions of the body.

The number of new cancer patients worldwide was estimated at over 12 million in 2008. This pathology is responsible for more than 12% of death cases, of which about three-quarters occur in low or middle-income countries. There's no one single family in the world that is spared by this plague. The social harms caused by cancer are immense, not only in terms of sufferings by the patients themselves, their families and friends, but also in terms of high economic burden.

The burden induced by cancer, both on healthcare practitioners and on the whole system is considerable and it is rapidly growing. As a matter of fact, the overall number of cancers has grown twofold during the last three decades of the past century, and it is estimated that this number will double between 2000 and 2020, and almost triple by 2030. Some of the determinants of this evolution include the increasing number of elderly, group with highest prevalence of cancer, the decrease of mortality caused by communicable diseases and the increase of exposure to some risk factors.

The situation in Morocco is as alarming. There are about 30,000 new cases of cancer each year. Cancer is responsible for 7.2% of death. The cost of the management of cancer is very high and the situation is all the more worrying that more than two thirds of the population has no medical coverage. The results of impact studies on the costs related to cancer care are sufficient proof of the heavy burden incurred by households as well as the severe social and economic repercussions of a cancer disease; up to 90% of the cost of certain cancers are incurred by patients. The result being that cancer contributes inevitably to making its patients even poorer.

1.2 Rationale

Several findings vindicate the implementation of a plan for the prevention and control of cancer in Morocco:

- Importance of the cancer morbidity burden, with more than 30,000 new cases each year;
- Inadequate primary prevention activities;
- Lack of structured programs for early detection;
- Inadequate specialized infrastructures and human resources;
- Poor management of available resources: absence of standards for the diagnosis and treatment management, no policy regulating generic drugs, etc. ;
- Unavailability of palliative care and psychosocial support;
- The cost of treatment exceeds the financial capabilities of the majority of patients, and less than one-third of the population has medical insurance;
- Lack of communication strategy on and about cancer ;
- The applicable legislation and regulation have become inadequate for an efficient prevention and management of the disease.

Furthermore, this situation being common to the majority of countries, the World Health Assembly has adopted in 2005 a resolution (WHA 5822) recommending to all members states to strengthen the actions against cancer, by developing or strengthening the existing cancer control programs. Improving action against cancer has therefore become an issue of global concern for all: public powers, private sector, NGOs, professional associations, etc. All must contribute to the implementation of the global cancer control strategy, which aims at reducing the incidence, mortality and risk factors of this disease, and improving the quality of life of patients and their families.

Hence, under the guidance of Her Royal Highness Princess LALLA SALMA, President of Association LALLA SALMA against Cancer (ALSC) and WHO Goodwill Ambassador for Promotion of Cancer Prevention and Care, Morocco has adopted the international strategic approach and rallied efforts of the Ministry of Health, civil society organizations and other stakeholders, particularly for the design of the / a National Plan of Cancer Prevention and Control (NPCPC), in line with the Global Strategy.

1.3 Methodology

The NCPCP development project was prepared by ALSC and validated by a steering committee and a joint panel made up of ALSC and the Ministry of Health (joint committee). An ad hoc commission was created for the follow-up and monitoring of the project.

The NCPCP development project began by a situation analysis, carrying out fifteen studies creating and collecting of data in all fields associated with cancer: incidence data; behavioral and professional factors; demographics ; health care; information on prevention and early detection activities; diagnosis and therapeutic practices; information on applicable legislation and regulations; information on the needs of patients and their families, the needs of healthcare practitioners and individuals exposed to risk; population perceptions, knowledge, attitudes and practices toward cancer.

Taking into account the situation analysis results, six workshops were organized by the ALSC and the Ministry of Health in order to develop a specific strategy of the different areas of the plan: prevention, early detection, diagnosis and treatment management, palliative care, communication and legislation. These workshops were facilitated by national and international experts with the participation of the relevant departments and organizations in each component of the plan, along with the resource persons concerned by the specific themes of each workshop.

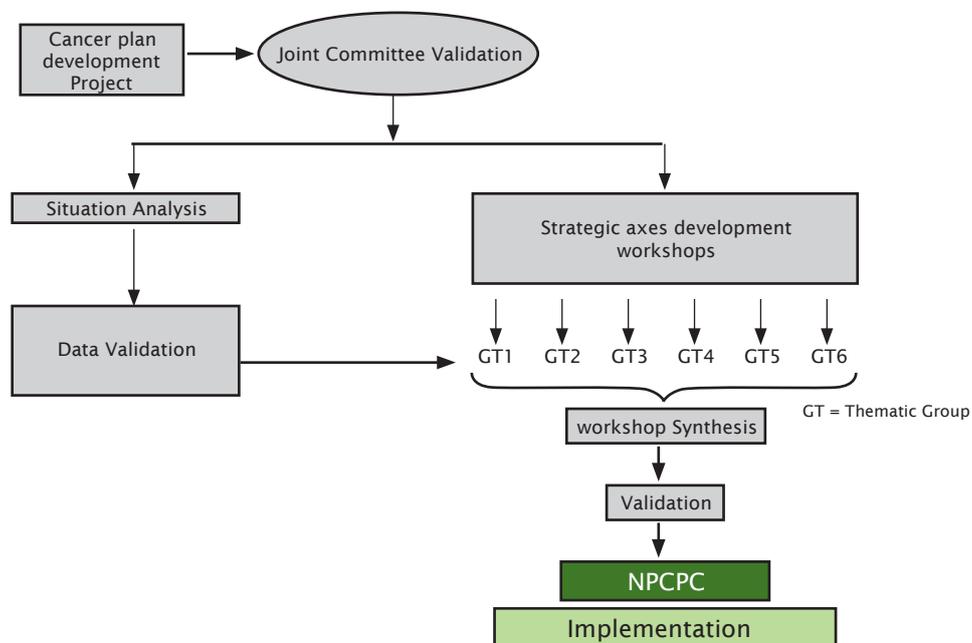


Figure 1: NCPCP Development methodology

2. Situation analysis

Morocco is currently in an epidemiological transition called « double burden », with coexistence of infectious and chronic diseases. While the prevalence of infectious diseases and the malnutrition is progressively declining, there is an increase in the prevalence of non communicable diseases, such as cardiovascular diseases, chronic diseases and cancers, accountable for 56% of the total morbidity load. In particular, cancer burden is getting more and more overwhelming for the health system.

The main factors contributing to these changes are:

- The increasing live expectancy which rose from 47 years in 1962 to 71 years in 2008 ;
- The rapid socioeconomic development;
- The environmental change;
- The lifestyle changes: sedentary lifestyle, greater and quicker adoption of western diet, prevalence of smoking and unhealthy behaviors.

2.1 Cancer incidence

The only source of epidemiological information currently deemed valid on the epidemiology of cancer in Morocco is the Grand-Casablanca-Region Cancer Register (GCRCR). This register is based on a population sample accounting for 10% of the Moroccan population.

In total, all localizations combined, 3,336 cases of cancer were recorded by the GCRCR 2004, including 1,833 in women and 1,503 in men. The standardized incidence was slightly higher in female (104.2 for 100 000 females/year versus 100.3 for 100 000 males/year).

In Table 1, the distribution of cancer cases for 2004 by location and gender, according to the Grand-Casablanca-Region Cancer Register.

Table 1: number of cancer cases by localization and by gender for the Grand-Casablanca, year 2004

	Female	%	Male	%	Total	%
Breast	662	36,1%	-	-	662	19,8%
Lung	31	1,7%	358	23,8%	389	11,7%
Cervix	235	12,8%	-	-	235	7,0%
NHL	73	4,0%	92	6,1%	165	4,9%
Prostate	-	-	125	8,3%	125	3,7%
Stomach	46	2,5%	62	4,1%	107	3,2%
Rectum	51	2,8%	47	3,1%	98	2,9%
Thyroid	97	5,3%	-	-	97	2,9%
Colon	40	2,2%	56	3,7%	96	2,9%
Ovarian	92	5,0%	-	-	92	2,7%
Larynx	-	-	84	5,6%	84	2,5%
Bladder	-	-	84	5,6%	84	2,5%
Skin	42	2,3%	41	2,7%	83	2,5%
Primitive loc. inc.	-	-	68	4,6%	68	2,0%
Nasopharynx	-	-	65	4,3%	65	1,9%
Uterine body	49	2,7%	-	-	49	1,5%
Brain	-	-	42	2,8%	42	1,3%
Pancreas	-	-	32	2,1%	32	0,9%
HL	29	1,6%	-	-	29	0,9%
Gallbladder	22	1,2%	-	-	22	0,7%
Œsophagus	20	1,1%	-	-	20	0,6%
Others	343	18,7%	350	23,3%	693	20,8%
Total	1833	55%	1503	45%	3336	100%

Excluding the unspecified «other cancers», the most frequent cancers recorded in the Metropolitan Casablanca Region in 2004 are the breast [36.1%] and cervix [12.8 %] cancers for females, while for males these were lung [23,8 %] and prostate [8,3 %] cancers.

The extrapolation of these results to the Moroccan population leads to a global standardized incidence (males + females) of 101.7 new cases for 100,000 inhabitants per year. This corresponds to about 30,000 new cases of cancers in Morocco each year. Breast cancer comes first, followed by lung cancer, cervical cancer, colorectal cancer, non Hodgkin's lymphoma, prostatic cancer and finally the cancer of the stomach.

Regarding cancers in children, estimated crude incidence according to the GCRCR is 11.34 for 100,000 children. This figure accounts for 3.2 % of all cancer cases collated. Girls are greater in numbers with a proportion of about 53.8 % versus 46.2 % for boys. The most frequent cancers in children are malignant haemopathies (19.8%), followed by tumors of the brain and meninges (17.1%), then cancers of bones (12.3%), adrenal glands (11.3%) and eye (10.4%).

2.2 Strengths

- Availability of leadership
- Existence of political will
- Recognition of cancer as a priority public health issue
- Existence of a dynamic civil society
- Availability of human skill potential
- Availability of structures and infrastructures potential
- Availability of therapeutic treatments

2.3 Weaknesses

- Lack of a prevention policy
- Lack of a screening program
- Absence of a health map
- Inadequate health coverage with a high cost for management, thus causing treatment to become unaffordable for many patients
- Lack of palliative care and psychosocial support
- Lack of information, education and communication policies
- Inadequate core training and further training
- Inadequate legislative and regulatory framework

3. Vision and values

3.1 Vision

The vision of NCPCP is to prevent and control cancers on the national scale through the adoption of a multi-sector approach, the proposal of concrete and sustainable actions, adapted according to the priorities, taking the greatest advantage of available resources, while remaining in harmony with the socioeconomic and cultural context of the country.

3.2 Values

This plan seeks to have the following values:

- Equity, the same healthcare for all, and accessible to all;
- Solidarity, assured case management for all through mutual contribution ;
- Quality, a thorough case management according to applicable standards;
- Excellence, the perfection in each implementation step.

The attribute of this plan is the proper implementation of cancer patients' rights, by proposing a program based on impartiality and by providing a human service founded on equity.

3.3 Strategic objective

The objective of the NCPCP is to reduce morbidity and mortality attributable to cancer and to improve the quality of life of patients and their near relatives.

3.4 Action strategy

The action strategy of NCPCP aims to act by way of operational measures on the following strategic components:

- Prevention;
- Early detection;
- Diagnosis and treatment management;
- Palliative care.

These components will be supported by a communication and social mobilization program, along with the strengthening of legislation and regulation. This is illustrated in figure 2 showing the conceptual framework of the NCPCP :

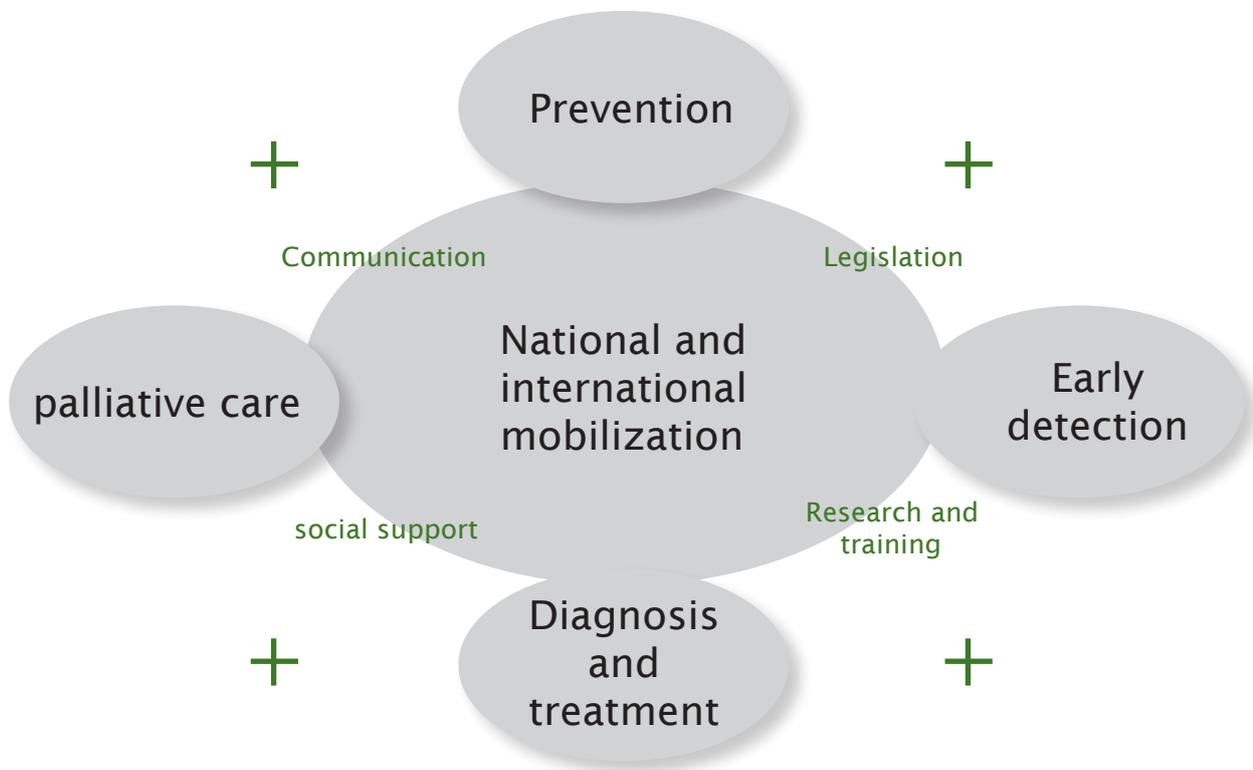


Figure 2: Conceptual framework of the NCPCP

Each of the above axes has been developed on the basis of scientifically sound models, using a systemic approach, centered on the patient and his circle, taking into consideration the findings of the situation analysis about cancer in Morocco.

4. Prevention strategy

Prevention is the most successful approach in public health and economically the most efficient for a long-term control of the disease. As a matter of fact, about 40% of cancer cases can be avoided by preventing, modifying or reducing vulnerability of persons exposed to the main risk factors, that is to say smoking, overweight and obesity, inadequate consumption of fruits and vegetables, the lack of physical activity, drinking of alcoholic beverages, infections (HBV, HPV) and air pollution.

4.1 Situation analysis

In 2008, the smoking prevalence among the Moroccan population was 16% (30% for males and 1% for females). Among non-smokers, passive smoking is also high: 32% are exposed in their close family circle, 17% are exposed in their professional environment and 60% are exposed in public places.

Among males 6.8% drink alcoholic beverages, and 2 out of 1,000 drink on a daily basis.

Regarding food-related factors:

- 63% of the Moroccan population eat 5 types or more of fruits and vegetables per day;
- 11% of the population eat poultry more than three times per week;
- Only 3% of the population eat fish three times or more a week.

Concerning physical activity, one out of four people practices intense physical activity and one out of two people has moderate physical activity. Furthermore, one out of five individuals practices a sport.

Among the general population, the prevalence of obesity is 14% and 30% of the population are on overweight.

64% of the population are usually exposed to sun during hot time of the day (11 a.m. – 4 p.m.), one third of them in not using any protection from the sun.

In occupational environments, some exposures to carcinogenic substances or products are frequent, and use of protective means is quite weak:

- In the wood-made handicraft objects, exposure to wood dust is 100% and to paint fuel is 62% ;
- In the leather-made handicraft, the prevalence of exposure to salt and paint is respectively 100% and 55% ;
- In the copperware handicraft, the most frequent exposures are those to wood dust (20.5%), ethanol (18.1%) and sulfuric acid (17.3%);
- In the pottery sector, the main exposures are wood dust (54%), paint (44%) and lead (21%);
- In the sector of building and public works, wood dust is the main exposure (11.3%), followed by paint (9.7%). Asbestos is also believed to be prevalent in certain constructions.

In the field of legislation, the domestic law does not reserve any specific item to cancer. In fact, the word cancer does not appear in any heading of laws, decrees and bylaws.

The current legal framework in respect to tobacco control is that of Act 15-91. The bill, recently adopted by the Parliament, tends to amend and complete this enactment by incorporating significant developments in tobacco control activities.

The protection of occupational health is governed by the provisions contained in Act 65-99 related to the Labor Code. Of the 86 occupational diseases referred to in the bylaw of December 1999 enacted by the Employment Minister, eight come within the scope of cancer diseases.

Laws on environment and air pollution have only started to be implemented in 2003. These laws initiate the reform of the old Decree (Dahir) dating back to 1914, regulating unsound, unhealthy or dangerous facilities. Furthermore, a significant set of legal measures concerning food security and environmental hygiene has been also implemented.

The rules regarding protection from ionizing radiation are set by the Decree of 1997. The provisions contained therein relate to the qualifications required for the use of ionizing radiations, the standards respecting the premises and the procedures for disposal and storage of radioactive wastes.

4.2 Specific objectives

- Reduce active and passive smoking
- Increase the number of persons with healthy life-style
- Reduce prevalence of obesity
- Reduce the number of people drinking alcohol
- Prevent infections
- Improve protective measures and practices in occupational environments
- Formulate specific measures against environmental pollution
- Implement a strategy for the surveillance of cancers and risk factors

4.3 Prevention: measures 1-30

Tobacco control

Measure 1 : Prevent smoking

- Organize and lead tobacco control awareness-raising campaigns for the general public;
- Implement information and education programs targeting young and vulnerable persons;
- Involve the media in the tobacco control and set up a good behavior charter with media professionals.

Measure 2 : Encourage and support tobacco quitting

- Inform and warn smokers about tobacco dangers;
- Implement tobacco cessation medical consultations in primary healthcare facilities;
- Institute the reimbursement of nicotine replacement medicines and products;
- Support tobacco cessation services.

Measure 3 : Protect non-smokers

- Inform and raise awareness about the risks of passive smoking in family;
- Inform and raise awareness about the risks of passive smoking in public places;
- Support academic and non-academic educative activities.

Measure 4 : Reduce accessibility to tobacco products and inducement to their use

- Increase taxes on tobacco prices regularly and significantly;
- Ban retail selling of tobacco ;
- Ban direct and indirect advertising of tobacco products;
- Prohibit sale of tobacco products to underage;
- Strengthen smuggling control.

Measure 5 : Ratify the Framework Convention on Tobacco Control (FCTC)

Measure 6 : Implement the enforcement measures of the law (15 - 91)

- Enforce smoking ban in all indoor public spaces, workplaces and education institutions;
- Enforce bans on tobacco promotion.

Measure 7 : Mobilize the associations working in tobacco control

Measure 8 : Creation of a multi-sector body for surveillance of tobacco consumption, and monitoring and evaluation of tobacco control activities

Promote the adoption of healthy lifestyle

Measure 9 : Promote healthy and balanced diet

- Foster the consumption of at least five fruits and vegetables per day;
- Increase the consumption of (unfried) fish and reduce that of meat and animal fat;

- Promote preservation of food through the cold chain;
- Warn about the risks of food-smoking and food-salting for domestic and traditional preservation;
- Lead IEC campaigns on an ongoing basis to promote balanced and affordable diet in all seasons;
- Develop food education programs in media and in teaching institutions;
- Raise the awareness of the restaurant, catering and food-processing industry about the risks associated to unhealthy and unsound food habits and patterns;
- Develop the standards of a balanced diet in for the restaurants and cafeterias of administrations, factories, companies and schools.

Measure 10 : Reduce overweight and obesity

- Initiate a nutrition education program for teenagers and children as of the age of 5;
- Launch programs specifically designed to combat obesity;
- Train healthcare practitioners on the risks associated to overweight and obesity;
- Raise consumers' awareness on the risks associated with unbalanced fast-food habits;
- Create awareness among consumers on the risks induced by the consumption of food with high contents of sugar, salt and fat;
- Change the obesity perception in popular symbolic.

Measure 11 : Promote physical activity

- Strengthen physical activity in schools and act against unjustified exemptions;
- Foster access for young people to extra-scholar sporting activities in the vicinity;
- Create community sports infrastructures at affordable cost;

- Lead IEC campaigns on the benefits of regular physical exercise at all ages, and promote awareness on the dangers of sedentary lifestyle;
- Promote urban development plans including bicycle tracks, foot trails, green open spaces, playfields and car-free city centers.

Measure 12 : Fight alcohol consumption

- Increase taxes on and prices of alcoholic beverages;
- Prohibit direct and indirect advertising of alcoholic drinks;
- Heighten awareness about and educate people on the damages of alcohol;
- Develop support programs intended to cessation services and associations.

Control infections

Measure 13 : Prevent infections due to some viruses

- Inform the population about the modes of transmission of infections, cancer hazards and preventive measures;
- Strengthen current STIs control strategies, particularly AIDS control, associating information on HPV and HBV viruses;
- Consolidate immunization program against HBV.

Measure 14 : Set up a program for immunization against HPV

Reduce exposure to UV radiations

Measure 15 : Prevent the damages of UV radiations

- Set up campaigns on the risks of overexposure to sun and on available protective measures;
- Introduce in the curricula training module on the benefits and the risks of exposure to sunlight;
- Display in high risk areas (beaches, swimming pools) signs and panels on the dangers of sunlight exposure and on the rules of protection;

- Design and implement a legislation respecting the use of UV lamps in the work place.

Strengthen protection in occupational environments

Measure 16: Improve protective measures and practices in occupational environments

- Conduct occupational surveys to measure the level of exposure to carcinogenic substances classified 1 and 2A in the WHO classification (IARC);
- Inform and sensitize all categories of workers about the risks and hazards inherent to their professions ;
- Develop protective measures adapted to each occupational setting;
- Revise the occupational medicine legislation to strengthen protection against cancer triggering factors;
- Implement an occupational disease insurance system;
- Expand to retired people the right of compensation for occupational illness.

Control environmental risks

Measure 17: Control of soil contaminants

- Enforce the existing legislation and strengthen the monitoring of its implementation;
- Verify the traceability of the use of fertilizers, pesticides and insecticides;
- Keep informed, sensitize and train handlers and manipulators to the potential hazards of dangerous substances.

Measure 18: Protection from exposure to electromagnetic and ionizing radiations

- Comply with applicable international legislation governing the use of ionizing and electromagnetic radiations;
- Enlighten, sensitize and train health workers on the necessity of the permanent compliance with the rules of safety, monitoring and management of radioactive wastes;

- Enhance surveillance in structures using radioactive sources;
- Set up a system for the traceability of radioactive sources;
- Identify hazard-prone areas for radon;
- Develop the National Radio-Protection Center (NRPC).

Measure 19: Design a legislative set concerning the risks related to ionizing radiations

- Revise the law n° 005-71 and its enforcement acts;
- Adopt the draft decree related to radioactive wastes management;
- Regulate the medical physicists' educational branch;
- Setup of the rules specific to the delivery of the authorization to import second-hand equipment using ionizing radiations;
- Establish an independent body to probate devices and equipment using ionizing radiations.

Measure 20: Control atmospheric pollution

- Conduct studies to identify and quantify atmospheric pollutions;
- Implement the laws concerning atmospheric pollution.

Measure 21: Devise a set of legislation concerning environment-related risks

- Revise the Decree (Dahir) dated 1914 relating to unsound, unhealthy and hazardous institutions;
- Adopt the subordinate legislation of the laws 11-03, 12-03 and 13-03 relating respectively to protection and development of environment, to environmental impact studies and to air pollution control.

Strengthen the protection of consumers

Measure 22: Protect consumers against carcinogenic products

- Inform and raise awareness of consumers on hygiene measures to be complied with;
- Further monitor compliance with regulatory measures by the agrifood industry;

- Generalize and improve content labeling of food products;
- Support the work of consumer protection associations;
- Enhance control on sales of food products in the vicinity of educational institutions and in the catering places;
- Enhance border sanitary control and develop anti-smuggling measures of food products;
- Promote cold chain storage practices and advocate against food-smoking and food-salting.

Measure 23 : Develop legislation regarding food-related hazards

- Speed-up the adoption of the law enacting protective measures for consumers;
- Bring to achievement the project concerning the creation of the National Food Security Agency;
- Define laws and regulations to be used to combat misleading advertising.

Assure surveillance of the evolution of cancers and risk factors

The design of a strategy for the surveillance of cancers and risk factors will make it possible to evaluate the true magnitude of the problem, follow the temporo-spatial trends of cancer cases, risk factors and plan the necessary means for the prevention and case-management of these pathologies. This strategy must be implemented through different kinds of approaches according to objectives and available means.

Measure 24 : Measure cancers incidence

- Institutionalize the Grand-Casablanca-Region population Cancer Register;
- Develop data of the Grand-Casablanca-Region Cancer Register;
- Create hospital registers in all public and private oncology units;
- Process and analyze surveillance data at the Regional Health Observatory level;
- Consider the opportunity of creating a second population register in another region.

Measure 25 : Measure mortality due to cancer

- Train and raise the awareness of physicians on the relevance of filling death certificates;
- Establish a system for the verification and control of death certificate filling;
- Create a linkage system between cancer registers and mortality registers.

Measure 26 : Monitor risks related to occupational exposure

- Keep the medical records showing the occupational activities which constitute a risk for the workers;
- Rise awareness among persons exposed to carcinogenic substances and encourage them to report their exposure in case they get cancer after their retirement;
- Introduce a regular monitoring system of exposure to risk factors on the work places;
- Establish a centralized surveillance data system of occupational risks and cancers, in order to allow analysis and decision making by concerned public services.

Measure 27 : Measure the prevalence of cancer-related risks

- Conduct regular studies on the prevalence of behavioral risk factors;
- Investigate the prevalence of exposure to risks in the sectors of handicraft, agriculture and building and public works.

Measure 28 : Evaluate the level of knowledge

- Conduct population KAP studies regarding cancers and risk factors to evaluate in particular the implemented actions of information, education and communication;
- Carry-out KAP studies in occupational settings.

Develop training strategy on prevention

Measure 29 : Develop the core curriculum and the continuing training modules on cancer prevention

Training on prevention must involve all sectors, and hence it must be well coordinated and standardized.

For core curricula:

- Incorporate a module on cancer prevention at all educational levels;
- Put greater emphasis on public health education in the core curriculum of medical and paramedical staff;
- In each specialty, strengthen the public health aspect, along with that of epidemiology and oncology.

For continuous training:

- Introduce an ongoing training program in prevention for healthcare practitioners.

Develop research on prevention

Measure 30 : Develop research in cancer prevention

- Develop basic research in the field of prevention;
- Conduct specific studies on incidence, mortality and prevalence of certain forms of cancer;
- Develop research on identification and quantification of risk factors;
- Initiate operational research on the cost/benefit ratio of prevention measures;
- Conduct surveys in the field of behavioral sciences and in social anthropology;
- Conduct studies on family cancers.

5. Early detection strategy

Early detection activities are essential in reducing the incidence of certain cancers. In fact, we may reduce about one-third of the cancer burden through early detection and treatment of cases at the onset of the disease, the phase where treatment is most efficient. This can be done by keeping the population aware of the early signs of cancer and by undertaking screening programs for risk persons in order to detect the disease even before the appearance of the first symptoms.

5.1 Situation analysis

Concerning the population attitude toward the surveillance of their health condition, only 1 Moroccan out-of 10 performs medical examinations on a regular basis, whereas about three quarters of women never visited a gynecologist.

Early detection comprises the two following components: screening and early diagnosis;

- Screening: the act of detecting with a test before the appearance of symptoms (preclinical phase) in a healthy population;
- Early diagnosis: the act of detecting as early as the onset of the first symptoms of cancer.

Screening is aimed at a large population “targeted” because of its risk for a specific cancer; that is for which it is possible to propose detection through a test outside of the existence of any symptom, the ultimate goal being, where a lesion has been detected, that the treatment be the most efficient and the lightest possible.

Early diagnosis relates to subjects presenting symptoms and who must consult a healthcare practitioner as early as possible. Then these subjects must immediately undergo adequate diagnosis, and where applicable, initiate specific treatment.

The initiation of an early detection strategy does not systematically entail a beneficial effect on health, but always economic costs and sometimes certain nuisances. It is therefore necessary to look at the situation in Morocco in terms of type of frequent cancers, then study the likely efficiency of treatments in case of early diagnosis and of screening, using whatever knowledge provided by the international literature.

Screening is efficient in:

- Breast cancer
- Cervical cancer
- Colorectal cancer

Early diagnosis is very useful in the following cases of cancer: breast, cervix, thyroid, prostate, colon-rectum, cavum, cancers in children, lymphomas, larynx and bladder.

In Morocco, priority is given
to the screening of breast and cervical cancers

5.2 Specific objectives

- Set priorities for cancer early detection programs and the modalities thereof;
- Define the strategy for creating awareness among the general public for the importance of early diagnosis and screening;
- Map out the strategy for the development of the offer of and the access to early detection programs;
- Define a quality assurance and monitoring protocol of the early detection processes and cases management;
- Introduce indicators and analysis system for the assessment of early detection programs;
- Map out a training strategy of healthcare staff;
- Set-out the applicable research in this field.

5.3 Early detection: measures 31-43

Implement a screening strategy

Measure 31 : Introduce the breast cancer screening program

- Morocco is currently adopting the method of breast cancer screening program based on the clinical examination;
- The target population selected for this screening program is the entire women population over 45 years;
- The introduction of breast cancer screening program nation-wide can be done on short-term.

Measure 32 : Introduce the cervical cancer screening program

The two tests used for the screening of cervical cancer are the cervicovaginal smear and the Acetic Acid Visual Inspection (AVI).

- In Morocco, the method currently adopted is a screening program of cervical cancer using AVI;
- The target population chosen for this screening program is that of women aged 30 to 50;
- The introduction of the nationwide scale cervical cancer screening program can be made on medium-term (as a pilot project to be generalized at a later date).

Implement an early diagnosis strategy

Measure 33 : Improve the possibilities of access to early diagnosis

- Reduce geographic barriers by multiplying the number of diagnosis confirmation centers (Diagnosis Centers);
- Reduce economic obstacles;
- Provide the centers with necessary resources.

Measure 34 : Provide training in early diagnosis techniques

- Plan a training course in early diagnosis techniques;
- Start these training as soon as possible in the regions where cancer management facilities are already available.

Ensure access to early detection programs

Measure 35 : Integrate early detection programs in the health system

- Recruit the target population for breast and cervical cancer screening in health centers and general practitioners offices;
- Perform diagnosis confirmation explorations in provincial structures and private sector clinics ;
- Decide on the multidisciplinary treatment decision and define the rhythm and the venue for the follow-up care of patients in the UMC, regional oncology units and private oncology clinics ;
- Ensure the follow-up of target persons having negative examinations at healthcare centers and general practitioners offices ;
- Foster the early diagnosis and ensure the activities thereof at all levels.

Measure 36 : Train healthcare practitioners in detection programs of breast and cervical cancers

- Develop a training program for health professionals specific to each level of care;
- Establish screening standards for breast and cervical cancers;
- Train staff to the communication and psychology techniques;
- Train program managers at provincial, regional and central levels;
- Design Monitoring & Evaluation modules.

Measure 37 : Inform and create awareness among the population on breast and cervical cancer early detection programs

- Maintain ongoing and adapted communication with the different target audiences;
- Organize community-based communication in the different healthcare facilities;
- Involve civil society organizations and their acting board in communication.

Measure 38 : Create the structures and necessary resources for early detection program

- Create necessary structures and equipments;
- Provide screening test packages in primary healthcare facilities;
- Reduce economic barriers relating to diagnosis examinations and therapeutic management.

Measure 39 : Implement a quality assurance system of the early detection program

- Develop written standards, for all the steps of early detection programs;
- Perform systematic audits;
- Introduce an accreditation system for all structures (public or private) involved in the early detection programs at different levels.

Measure 40 : Implement a Monitoring & Evaluation (M&E) system

- Ensure permanent monitoring of the early detection programs;
- Elaborate quantitative and qualitative indicators:
 - For tests, examinations and treatments ;
 - Of compliance with procedures and deadlines;
 - Of patient satisfaction;
 - Of cost evolution;

- Create standardized information form to collect the above indicators and make them available to different stakeholders, at all levels;
- Perform periodically external reviews of early detection programs.

Measure 41 : Raise awareness of the population about early symptoms and possibility of cure

- Use a communication technique adapted to the different audiences, particularly target populations ; such communication must be permanent must assume the form of specific campaigns;
- Organize community-based communication in different healthcare structures, in particular in health centers, dispensaries and private doctor's office;
- Involve associations in the communication programs after necessary awareness raising and training of their members.

Develop an information system

Measure 42 : Introduce an information system for early detection activities

- Establish at all levels involved in early detection a system of collection, archiving and analysis to allow the monitoring and evaluation of the results of early detection programs and to ensure feedback of results;
- Computerize the collection system for a better program management;
- Measure the main indicators.

Develop research

Measure 43 : Develop research in the field of early detection

- Conduct operational research on early detection program ;
- Perform comparative studies in the Moroccan context of AVI test and cervical smear for cervical cancers screening;
- Conduct periodic evaluation studies of the screening tests used: their performance, their reproducibility, their quality, their likely nuisances and their cost.

6. Diagnosis and therapeutic management strategy

6.1 Situation analysis

Management

The current situation studies has showed the deficiency of healthcare structures and specialized human resources, thus patients have to travel long distances for very belated appointments. The huge difficulty to access to healthcare causes patients to be more often diagnosed at very advanced stage of the disease: for breast cancers the diagnosis is made at stage I in only 6% of cases versus 57% of cases in stage III and IV; as for lung cancers, their diagnosis is made at stages I or II only in 4% of cases, whilst 96% of the cases are diagnosed at the stages III and IV.

The time length between the onset of the first symptoms and the first medical examination exceeds one month in 36% of cases, this period is even greater than 6 months in 14% of cases. Furthermore, the period between the first medical examination and the diagnosis of cancer is greater than 3 months in 52% of cases and greater than 6 months in 27% of cases.

The absence of standardized protocols for diagnosis and treatment is the cause of the poor quality and the high cost of patient management.

The follow-up period of cancer patients is very low with a high number of lost-to-follow up. In fact, the follow-up period is below 2 years in 74% of cases.

Besides, about half of the patients are lost to follow-up after one year and almost seven of ten patients are lost to follow-up the second year, 83% are lost the third year and 96% of patients are lost to follow-up at 5 years. Therefore, there is no reliable data to estimate the patient survival at five years, which is an essential indicator of the quality of cancer patients' management.

Besides the deficiency and the unequal distribution of management structures, there is a deficit in specialized technical and human means, for instance there were in 2007:

- 7 mammographic units for 1 000 000 women ;
- 1.3 MRI for 1 000 000 inhabitants ;
- 2.2 laboratories of anatomopathology for 1 000 000 inhabitants ;
- One simulator for 5 000 000 inhabitants ;

- One cobalto-therapy unit for 3 000 000 inhabitants ;
- One accelerator for about 2 800 000 inhabitants ;
- 2.1 radiotherapists for 1 000 000 inhabitants ;
- 2.8 medical oncologists for 1 000 000 inhabitants.

Knowledge, attitudes, perceptions and practices

The population based survey on knowledge, perceptions and attitudes toward cancer shows that the terms mostly used to refer to cancer are: « Li makaytssamach », « Al mard el khaïb », « Al mard laqbih », « Al hay », « Laâdou ».

Some evocations linked to the term « Cancer » and the symbolic associated to the disease are: fear, isolation, divine punishment, curse, death, a disease that causes havoc in the family, family disintegration, incurable disease, very costly disease with death at the end even when treated. In rural areas, the disease gives rise to the following comments « it is better to save one's property and one's cattle and leave them to one's children, since the patient is going to die anyway. »

The lack of knowledge about the disease and the credulous nature of rural populations are paradoxically reflected in the likelihood of a remission of cancer using traditional products. The plants or ingredients generally used for the treatment of cancer often prove to have aggressive or toxic effects: « cancer is a poison, and hence only a poison can combat it. »

The most widely known cancers are those of breast, uterus, throat, lung and prostate. Symptoms are often mixed up with treatment side effects (hair loss, nausea and browning of skin).

The main disincentives for early detection are lack of financial resources and absence of health insurance, ignorance of early signs of the most frequent cancer forms, ignorance of the fact that early diagnosis can increase the possibilities of remission and finally ignorance of where to turn for advice and support.

Among the reasons for the more or less significant hesitation period between the discovery of the first signs, the first examination, even after the diagnosis and the start of treatment, there is the fact that the formulation of the disease by the physician is often felt with strong resentment by the patient, because of its ambiguity. This medical behavior does not seem to contribute to the mobilization of the patient. Certain patients declared to have « preferred to know the reality of their disease so that they can become psychologically armed with a strong will to fight it ».

Legislation

From the legislative standpoint, private laboratories for medical biological analysis are governed by the law of 2002. The law does not specify a private laboratory specialized in anatomopathology. The only possibility it offers to the anatomopathologist willing to set up his private office is to enter into an agreement with a clinical laboratory, of which he/she cannot be the owner or the joint owner.

Concerning medicines, they are governed by the law 17-04 of 2006. This legislative enactment is the reference material concerning anticancer drugs, antimetabolic agents, radiopharmaceutical products and products removing or reducing tobacco addiction.

There is a special place for the relations between patients, healthcare practitioners and healthcare institutions. According to law, the patient, whether hospitalized or not, is in different juridical positions depending on whether he/she is dealing with public or private sector. Some of these rights are referred to in the following enactments: professional code of ethics, law 10-94 respecting medical practice, law 65-00 making provision for basic medical coverage and the new hospital bylaws.

The 3 levels of the Moroccan healthcare system involved in cancer prevention and control relate to the types of institutions shown in figure 2:

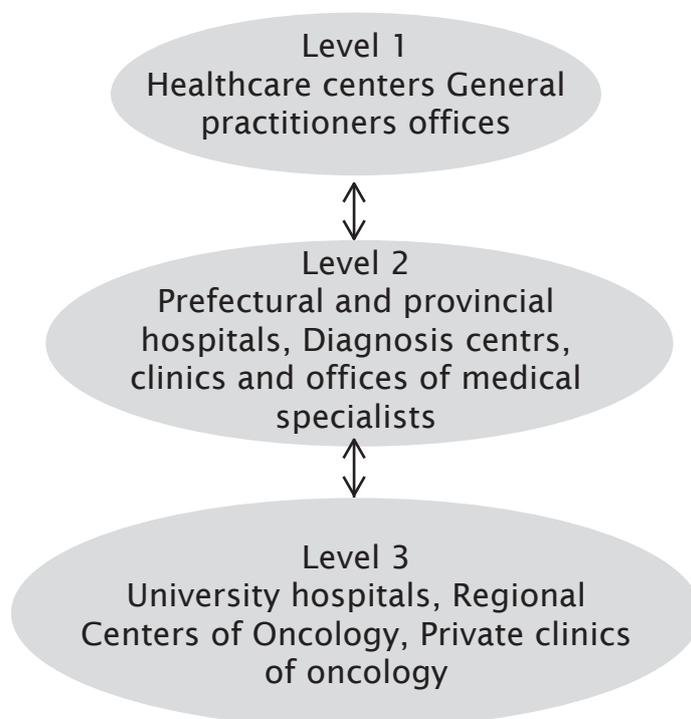


Figure 2: Types of institutions active in cancer control

6.2 Specific objectives

- Improve the perception of the population toward cancer ;
- Set up quality standards for the management of patients ;
- Define what healthcare packages to offer for cancer patients: imaging, anatomopathology and biological diagnosis, surgery/anesthesia, radiotherapy, medical treatments supportive care during treatments ;
- Identify and foster further coordination between treatment centers (public and private) of the different health system levels ;
- Define training and development of human resources;
- Map out the clinical research axes on cancer.

6.3 Diagnosis and therapeutic management: measures 44-61

Improve the perception of the population toward cancer

Measure 44 : Develop actions to demystify the disease

- Define communication axes;
- Design the reference of messages;
- Identify the targets: in priority, secondary ;
- Define the forms, types and channels of communication according to target populations;
- Identify the administrative working.

Ensure healthcare package to cancer patients at the three health system levels

Measure 45 : Ensure information, detection and follow-up activities at level 1

Level 1 is represented by the healthcare centers network and the private GP offices.

- Ensure activities of : screening, cancer diagnosis suspicion, sorting and patient referral, along with post-treatment follow-up activities ;

- Create awareness about cancerology among the staff of healthcare centers and GP offices ;
- Organize continuous training for the first level staff on the different steps of patient management;
- Design standard references and simple decision trees for the detection of most frequent cancers ;
- Promote patients' awareness as early as in the waiting room through brochures, posters and audiovisual aids for easy acceptance of the appropriate clinical exam by the doctor;
- Equip each healthcare center with communication means.

Measure 46 : ensure diagnosis and therapeutic management activities of at level 2

Level 2 is represented by the prefectural or provincial hospital centers and by the private offices and clinics of medical specialists.

- Perform confirmation of the diagnosis of cancer and the standard extent of disease assessment by performing the following examinations:
 - Biopsy endoscopy: digestive, urologic, bronchic and ENT;
 - Surgical biopsies ;
 - Anatomopathology, immunohistochemistry (including hormonal receptors) ;
 - Standard biology: hematology, biochemistry, microbiology ;
 - Imaging: standard radiography, radiography with contrast medium, mammography, ultrasonography and CAT ;
- Ensure therapeutic management, in particular gynecological and visceral surgery ;
- Ensure the post-treatment follow-up of patients;
- Implement the necessary technical and human resources for the performance of these activities:
 - Biological laboratory ;

- Laboratory of anatomopathology;
- Radiological and endoscopic exploration equipment;
- Technical equipment for surgery;
- Anesthesia and intensive care department ;
- Day hospital equipped with necessary tools for chemotherapy;
- Pharmacy service under the responsibility of a head pharmacist.

Measure 47: Ensure specialized management, training and research activities at level 3

Level 3 is represented by the UMCs, the regional oncology centers and the private specialized clinics in radiotherapy and oncology.

- Perform diagnosis explorations and extent of disease assessments;
- Define the therapeutic strategies in weekly Multidisciplinary Consultation Meetings (MCM);
- Ensure case management and follow-up;
- Ensure training, education and research through UMCs ;
- Set up the necessary diagnosis means:
 - The entire battery of imaging including MRI, isotope scanning, mammography, etc. Certain techniques will be served to UMCs such as: functional imagery, interventional radiology, PET scan and special isotope explorations;
 - Anatomopathology, immunohistochemistry and advanced anatomopathological techniques such as: Fluorescence In-Situ Hybridization (FISH) and Colorimetry In-Situ Hybridization (CISH). Certain techniques will be reserved to UMCs such as: molecular biology, flow cytometry and the tumor bank;
 - Laboratories of biology, bacteriology, haematology and biochemistry; tumormarkersandUMCs specific techniques such as: immunophenotyping and cytogenetic ;

- All types of endoscopy, reserving interventional endoscopy to UMCs ;
- Ensure comprehensive oncological surgery:
 - Hospitalization unit and a surgical intensive care unit;
 - Day surgical hospital to develop the ambulatory oncological surgery;
 - UMCs should perform: neurosurgery for brain tumors, celeoscopic oncosurgery, Sentinel Lymph Node Technique, reparative surgery (cervicofacial, bone and breast), ablation surgery and radiofrequency of metastasis of liver, lung and brain, and eye tumor surgery;
- Perform radiotherapy with in each site:
 - Two (2) linear accelerators with multi-leaf collimator;
 - A simulation system (standard or TDM), a Dosimetry Planning System (TPS) all linked in a network system including the CAT;
 - High Dose Rate Curietherapy (HDR) with application room and dosimetry chain (quality control);
 - Radioprotection rules and means adapted to all centers;
 - Specific techniques for UMCs: conformal radiotherapy with intensity modulation, stereotactic radiosurgery (one single gamma knife for all the centers);
- Ensure to medical oncology with:
 - An hospitalization unit of at least 10 beds;
 - A day hospital with a minimum of 8 chairs;
 - A centralized chemotherapy preparation unit (horizontal laminar flow hood with distribution system);
 - Implement a totally implantable central venous access port for all long period chemotherapy patients;
 - UMC specific techniques: increased chemotherapy with peripheral stem cell autotransplantation and allogenic bone marrow transplantation, with cryopreservation center and means for new therapy trials;

- Reserve the specialized consultations to the UMCs: oncogenetics, rare cancers;
- Ensure adapted supportive care: necessary resources including algologists, kinesiologists, psychologists, dentists, dieticians, social service (a separate chapter reserved to palliative care).

Measure 48 : Develop health-care facilities related legislation

- Establish regulations of the technical standards of radiotherapy and chemotherapy centers;
- Statutory recognition of private anatomopathology laboratories;
- Inclusion of oncology among health services provided by regional hospital centers.

Measure 49 : Create facilities dedicated to oncology management

- Build oncology centers in Meknes, Tangier, Safi, Laâyoune;
- Create proximity oncology centers in provincial hospitals;
- Create two (2) oncogynecology centers in the UMCs of Rabat and Casablanca;
- Create two (2) pediatric hemato-oncology centers in the UMCs of Fès and Marrakech.

Measure 50 : Ensure accessibility to medicines

- Ensure availability of medicines;
- Develop the use of generic drugs;
- Reduce sale prices;
- Create a drug purchasing commission.

Measure 51 : Develop legislation related to access to anticancer drugs

- Reexamine profit margins of medicine distribution channels;
- Revise the method of calculation of medicine prices;
- Encourage local manufacturing of anticancer drugs;

- Activate the bioequivalence legislative development process.

Measure 52 : Develop national references of good practices for diagnosis and treatment

- Ensure compliance with standards of the diagnosis approach;
- Comply with extent assessments standards;
- Design standardized chemotherapy protocols;
- Abide by the chemotherapy preparation standards;
- Develop reference of surgical good practices;
- Introduce reference of good practices in radiotherapy.

Measure 53 : Initiate a quality assurance system of management

- Define quality criteria for all diagnosis and therapeutic activities;
- Set quality criteria for all equipment immediately after installation, with a detailed program of approach and quality control and maintenance.

Measure 54 : Institute a monitoring and evaluation system for patient management

- Set thresholds and measure the following indicators to evaluate the quality of diagnosis and therapeutic management at each level:
 - Time length between the first consultation and diagnosis;
 - Time length between diagnosis and beginning of treatment;
 - Compliance with chemotherapy and radiotherapy treatment;
 - Compliance with inter and intra-treatment time lengths (radiotherapy staging) ;
 - Number of patients lost to follow up;
 - Proportion of diagnosed cases versus the expected cases;
 - Proportion of cases treated versus diagnosed cases;

- Patient satisfaction;
- Ensure traceability of all actions on each patient.

Devise a coordination system between the different levels of management

Measure 55: establish coordination between the different levels of cases management

- Attach to each patient a follow-up notebook from the beginning of his/her management (level 1). This notebook will include the key information concerning the patient's illness, complete check-up, treatment and appointments for medical consultation;
- Register every cancer patient at all levels on standardized records;
- Create a communication network between all management levels ;
- Establish a referral system;
- Ensure the appointment for the patient management at level 2, in case of cancer suspicion, before that the patient leaves the health care center or the general practitioner office (at level 1);
- Validate referral from level 2 to level 3, of each new cancer patient, by a commission during a multidisciplinary consultation meeting (MCM):
 - Introduce the MCM system in both the public and the private sectors. The MDM must comprise at least four medical specialists among radiologists, surgeons, anatomopathologists, radiotherapists, medical oncologists, organ specialists ... ;
 - Where the commission of MCM is not in the same city as Level 2, ensure a telephone consultation with at least one member of the MCM commission, prior to the start of surgery or chemotherapy at level 2, while ensuring the traceability of decision;
- Ensure medical consultation appointment at level 3, before the patient leaves level 2, in he/she has to be referred to level 3;
- Ensure information of Level 2 and/or of Level 1 of the nature of the treatment given at Level 3 and the ensuing management (treatment and follow-up) ;

- Introduce at Level 2 references for clinical and surgical good practices, in line with the national policy for the standardization and generalization of diagnosis and therapeutic management references, part of the Mandatory Health Insurance (AMO) ;
- Ensure that the patient gets all of his/her medical record or of a copy thereof, where he is referred from public to private sector or vice-versa.

Design a training and development strategy of necessary human resources at different levels

Measure 56 : Develop human resources of cancerology at level 1

- Train and create awareness among doctors of level 1 (public and private) on the detection of most frequent cancers and on the post-treatment follow-up, thus using the good coverage of the country by general practitioners;
- Train nurses on cancer signs and symptoms to facilitate the selection of patients for an appropriate clinical examination by GPs; it is necessary to have at least 2 nurses per health center, one of whom a female ;
- Train and raise the awareness of outreach teams.

Measure 57 : Develop human resources of cancerology at level 2

Level 2 is the keystone of the whole system. It must be updated quickly in terms of human and technical means to meet the demand consecutive to ramp up of level 1 and from return of level 3.

Train and ensure availability of necessary human resources for diagnosis:

- Imaging service (standard radiology, radiography with contrast medium, ultrasonography, mammography and scanner) with:
 - A minimum of 2 radiologists per structure, and more according to activities load;
 - One X-ray technician per standard radiography unit, one per mammographic X-ray system and three per scanner; on average, it requires 5 to 6 technicians for a center equipped with all radiology techniques;
- Anatomopathology service, with:

- A minimum of 2 anatomopathologists per laboratory, and more according to activities load;
- A minimum of 2 lab technicians, and more according to activities load;
- Organ diagnosis endoscopy: minimum requirements are 2 pneumologists, 2 gastro-enterologists, 2 gynecologists, 2 urologists and the appropriate paramedical staff ;
- Standard biology: the laboratory of biology must have at least two biologists and an adequate number of technicians;
- Create public/private partnerships, to purchase of services where it is needed.

Train and ensure availability of human resources for treatment (treatment is made on Level 3 prescription):

- Physicians: at least 2 doctors for the practice of chemotherapy at least one of whom is specialized in medical oncology; for children chemotherapy must be performed by a pediatrician having received appropriate training;
- Surgeons: at least 2 gynecologist surgeons entitled to perform breast cancer surgery and 2 internal organs surgeons entitled to perform surgery on cancers of colon, skin and surgical biopsies (including lymph nodes) ;
- Anesthesiologist and intensive care specialist: at least 2 ;
- Health care staff: must be available according to the adequate figures and having the appropriate training, continuous education is also required;
- Supportive staff and palliative care personnel: algologists, psychologists, kinesiologists, dieticians ... ;
- Administrative staff: clerks, medical social workers

Measure 58 : Develop human resources of cancerology at level 3

Train and ensure availability of human resources for diagnosis:

- Imaging service: the number of medical and paramedical staff will depend on the extent of technical equipment and of the level of activity of each center:

- A minimum of 2 radiologists per structure ;
- A minimum of 2 nuclear doctors;
- Radiology technicians: one per standard radiography unit, one per mammographe and three per scanner, three per MRI, three per nuclear medicine apparatus and three per PET-scan ;
- Anatomopathology laboratory:
 - A minimum of 3 anatomopathologists, and more according to the techniques performed and activities load;
 - A minimum of 3 laboratory technicians, and more according the techniques performed and activities load;
- Specialized laboratories at UMCs with the appropriate staff for: molecular biology, cytogenetics, constitutional genetics, somatic and immunologic genetics, etc. ;
- Plan the public/private partnership, for the service purchasing.

Train and ensure availability of resources necessary for therapeutic management:

- Surgery:
 - A minimum of 2 surgeons oncologists, and more as per cases load ;
 - For specialized internal organ surgery: a minimum of 2 surgeons entitled to perform cancer surgery per specialty (gynecology, urology, ENT, thoracic, visceral, bone, neurosurgery) ;
 - At UMCs, a minimum of 2 surgeons entitled to do plastic and reparatory surgery ;
 - The necessary staff having the appropriate practical training on anesthesia-resuscitation and in operating-room service according to activities load;
- Radiotherapy:
 - A minimum of 2 radiotherapists, and more according to cases load, on the basis of one radiotherapist for 400 to 500 patients treated per year;

- A minimum of 2 radio-physicists, and more according to cases load, on the basis of one radio-physicist for 600 to 700 patients treated per year ;
 - A minimum of 12 radiography operators;
 - A minimum of 2 curietherapy operators;
 - A minimum of 1 dosimetrist, and more according to cases load ;
 - A minimum of 2 technicians for the manufacture of body support systems, equipment maintenance and quality control;
- Medical treatments:
 - A minimum of 2 medical oncologists, and more according to cases load, on the basis of one oncologist for 300 new patients treated per year;
 - For the departments managing malignant hematological pathologies, a minimum of 2 hematologists, and more according to cases load, particularly in case of bone marrow transplant;
 - The nursing staff must be available in adapted numbers and must have appropriate practical training;
 - Supportive health care staff in adequate number: resuscitators, blood transfusion kits, algologists, psychologists, kinesiologists, nutritionists, medical social workers, spiritual caregivers, etc. ;
 - Adequate reception and secretariat staff with practical training adapted to this heavy pathology.

Develop training

Measure 59 : Develop core curricula and continuing training on cancerology

- Introduce an initial further training in cancerology:
 - For surgeons entitled to perform cancer surgery;
 - For general practitioners or non-oncologists medical specialists who will be entitled to perform cancer chemotherapy;

- Provide continuous training to all staff of the three levels.

Develop research axes

Measure 60 : Develop research in patient management

The types of research to promote while complying with the rules of ethics and good practices are:

- Clinical trials (national and international): medicinal and strategic trials;
- Biological studies (tumor bank, cell bank, sera bank ...) ;
- Organizational research;
- Evaluation studies of: activities, processes, references use, structures...

Implement an information system

Measure 61 : Introduce a management activities information system

- Ensure the communication of information necessary for patient management between the different levels and the different sectors;
- Initiate a system contain:
 - Registration of all cancer diagnosed cases and all treated cases;
 - Maintenance of a medical record for every patient, with traceability of all performed diagnosis and therapeutic acts;
 - Record-keeping of all severe adverse events;
 - Maintenance and archiving system of medical records ;
- Ensure collection of relevant information to measure the major indicators of evaluation and monitoring of diagnosis and therapeutic management quality.

7. Palliative care strategy

7.1 Situation analysis

The inventory of the palliative care situation shows a set of major problems:

- Inadequate training of healthcare practitioners on palliative care and patient comprehensive approach;
- Inadequate linkage between the psychological and ethical fields, and marked separation between health and medico-social fields, city and hospital, short and long hospitalization, etc.;
- Understaffing: physicians, nurses and attendants, kinesiologists, health care aides, etc.;
- Lack of relief care areas adapted to general palliative care and terminal palliative care;
- Inadequate follow-up of palliative care after release from health center;
- Lack of regular close support to patients;
- Lack of supportive care and cultural good citizenship on the end of life and death.

7.2 Specific objectives

- Develop pain management (in hospital, in ambulatory and at home);
- Define family and social close support activities ;
- Develop and organize palliative care networks (in hospital, in ambulatory and at home);
- Define the research axes.

7.3 Palliative care: measures 62-74

Develop Pain management

Measure 62 : Institutionalize pain management at all health system levels

Measure 63 : Develop palliative care access legislation

- Reform of the decree (Dahir) of 1922 on poisonous substances;
- Speed up the process for the development of bioequivalence legislative enactments.

Measure 64 : Fight “morphinophobia” (“protocolization”)

- Facilitate availability of morphine and procedures (counterfoil book, 7 day law) ;
- Replace counterfoil books by more secure prescriptions;
- Increase the prescription duration according to patient needs and mode of administration;
- Entitle a reliable person to receive the prescription and buy morphine on behalf of the patient;
- Enforce the management of pain (by Departmental Circular on an interim basis).

Measure 65 : Develop pain management reference

- Develop reference pain management centers in UMCs. These centers must provide healthcare activities, education and continuous training for different staff categories;
- Create pain management committees in regional and provincial hospital centers;
- Develop a module for pain management education adapted to each level, including the design of protocols, guidelines and creation of a university degree on pain management and palliative care.

Measure 66 : Decentralize pain management activities

- Extend the sphere of pain management to include all levels, with part-time therapy induction “day hospital”, city-hospital network and mobile teams;
- Develop outpatient clinics for palliative care and create specialized regional phone help desks specialized on counseling;
- Initiate sustainable good pain management practices by further supporting medical teams in palliative care at the services where they are working;
- Lead information and awareness raising campaigns for patients and public on pain management.

Ensure familial and social close support

Measure 67 : Ensure familial close support

- Strengthen the training of medical social workers and heighten their awareness about their role in oncology centers;
- Allocate medical social workers to all oncology centers;
- Provide patient family with data sheets including addresses where they can get the necessary palliative care requirements: oxygen, enteral feeding, physiotherapy, anti-bed-sores mattress ...;
- Fill out a mandatory contact sheet at patient leave from hospital;
- Define an interlocutor (doctor) toward the family, and choose an interlocutor among relatives (the closest, adult, appointed by the patient);
- Formalize the respite hospital admission and inform attending physician and family on such possibility;
- Appoint a referring physician who will retain responsibility for the patient until the end of life with planning of consultations;
- Provide transportation between oncology centers and patient home;
- Set up a distress line center with psychotherapists and online psychologists, which requires further training of psychologists and medical social workers;
- Encourage the development of palliative care outreach teams;

- Involve provincial hospitals and healthcare centers in the follow-up of cancer patients and in the end of life management, while providing appropriate training to the healthcare personnel;
- Make sure the private sector involvement in the management of end-of-life, through public private partnerships development;
- Develop a palliative care pilot project in one city, to be generalized afterward;
- Train outreach nurses to the management of patients at home;
- Prepare in advance the family for the mourning, this is the task of the referring physician;
- Assign psychologists to all oncology units and housing structures (life-houses) and involve them in order to provide the family with early comfort and guidance in the hospital, jointly with the medical social workers.

Measure 68 : Ensure social support

- Provide secure paid-for transport from the hospital to the home and from the home to the hospital ;
- Request the repayment of the fees of palliative care at home ;
- Involve civil society organizations, associations, imams (validation of message contents by the Ministry of Islamic Affairs), pressure and advocacy groups in palliative care;
- Involve all other ministerial departments;
- Train volunteer workers in comfort and close support activities;
- Seek help from medical and IFCS students to contribute to the management of patients at end-of-life;
- Urge administrative heads of community hospitals to accept short-term admission of patients for family relief care stays;
- Give supportive leave to a close relative of the patient;
- Involve local communities.

Measure 69 : Ensure support during death agony phase

- Keep patients with cataclysmic hemorrhage risk at the hospital;
- Respect spiritual support request;
- Ease administrative and religious measures in case of death in the hospital;
- Structure the hospital's burial services to provide necessary services in case of death;
- Write-out the death certificate in due form;
- Provide certificate of been treated for cancer to patients at risk of dying at home.

Develop and extend palliative care to network

Measure 70 : Set-out the missions of palliative care management structures

The aim of palliative care structures is to improve the quality of life of patients and their family, towards the consequences of a potentially fatal disease, through prevention and alleviation of suffering, after its early identification and accurate evaluation; along with the management of pain and other physical, psychological and spiritual problems associated thereto. The missions are different according to the level of palliative care management structures:

- At the level of regional oncology centers (ROCs), tasks are:
 - Ensure the palliative care package offer;
 - Coordinate between the different structures of management of cancer patients requiring palliative care;
 - Train the medical and paramedical staff, working in palliative care structures of different levels;
 - Promote research in palliative care field;
- At the level of Proximity Oncology Centers (POCs), under the instructions of the ROC, these structures have the following duties:
 - Identify a palliative care unit with the dedicated beds in the hospital;

- Arrange a day hospital for supportive care and chemotherapy;
 - Have a mobile team able to secure this mission;
 - Provide respite hospitalization;
 - Provide training, education, consultation and support to patients and their families;
 - Maintain a record for monitoring and evaluation.
- At the level of primary healthcare centers, the staff must provide additional support to help patients be as active as possible until their death, set up a comfort and support system to help patients' families withstand the disease and their mourning period, providing ambulatory palliative care to outpatient at home by outreach teams and ensuring counseling and guidance.

Measure 71 : Organize palliative care management networks

- Ensure joint planning of oncological centers and palliative care units/services with adequate resources. The management network of patients requiring palliative care must be organized in a similar way as the current oncological care system. The three types of service territories are:
 - The reference centers in university hospitals (UMCs) and Regional Oncological Centers (ROCs);
 - The proximity centers at the level of proximity oncological centers (VOCs) and of prefectural or provincial hospitals;
 - Primary health care institutions (PHCIs);
- Implement the three palliative care modalities of offer:
 - The residential palliative care units ;
 - The in-hospital outreach teams (for palliative care): located in the proximity oncological centers, these specialized teams must avail of the necessary means and equipment to perform their work well. They must maintain records for traceability of their activities. The legal position of the outreach team in the healthcare institution must be clearly defined and acknowledged by all hospital departments;

- The outreach teams of primary healthcare institutions, which mission is providing palliative care at home and ensuring patient follow-up. Home palliative care also requires the contribution of NGOs, Red Crescent and family members. The latter will receive information and education on palliative care during the stay of patients in the palliative care units.

Rather than excluding one another, these different management arrangements must complete one another so as to offer patients and their close relatives the most adapted and progressive responses to their needs and wishes.

Measure 72 : Define the standards and norms of palliative care structures

- At UMCs and Regional Oncological Centers:
 - A service of 10 to 20 anti-bed-sores mattress, with single and multiple bed rooms and the necessary technical equipment;
 - A multidisciplinary team made up of doctors, nurses trained on palliative care, psychologist, medical social worker, physiotherapist, social worker, nutritionist, secretary and volunteers;
 - Palliative care is assimilated to intensive care, hence the price must be similar.

- At Proximity Oncological Centers :

The site of the vicinity palliative care unit must be the regional or provincial hospital fitted with a COP. The model of «in-hospital outreach team» will be adopted;

- At primary healthcare structures:

The palliative care outreach team will be based in the primary healthcare institutions (PHCI). The work of the outreach team will be based on the additional support of associations, Red Crescent, volunteers, etc.

Measure 73 : Implement a palliative care information system

Develop research on palliative care

Measure 74 : Develop palliative care related research

- Gain better knowledge of patients requiring palliative care;
- Establish and evaluate therapeutic protocols;
- Develop clinical research in palliative care;
- Study patient management practices;
- Conduct medico-economic surveys and evaluate the necessary quantities of morphine products;
- Identify the needs of patients, their families and healthcare practitioners;
- Study the evolution toward supportive cares.

8. Supporting measures

Measure 75 : Ensure cancer patients rights

- Right to health insurance;
- Right to credit;
- Right to life insurance;
- Right of sick retirees;
- Right of patients to occupational promotion.

Measure 76 : Develop advocacy/lobbying for cancer control mobilization

- Develop a communication program for the promotion of the NCPCP.

Measure 77 : Develop a “National Cancer Charter”

- Develop a charter involving all relevant stakeholders and partners: government, associations against cancer, representatives, scientific societies, private sector, NGOs, etc.

Measure 78 : Establish a structure for the management of the NCPCP

- Create a management tool to ensure the implementation of NCPCP measures and to guarantee the monitoring and evaluation.

9. Expected results and resources

Below are some of the most significant prerequisites of a successful implementation of the NCPCP:

- The Ministry of Health must assume leadership;
- Social mobilization and partnership at all levels;
- Phased in implementation, on the basis of scientifically verifiable models;
- The approach must be systemic and must involve all aspects of the NCPCP;
- Actions must be realistic and feasible in our social and cultural context;
- The overriding objective of the plan must remain patient-oriented.

9.1 Expected results

The expected outcomes of NCPCP implementation for the period 2010 – 2019 are:

Prevention : Reduce by 30% the prevalence of behavioral and environmental risks.

Early detection :

- Have a screening program expanded on a nationwide scale ;
- Screen for breast and cervical cancers a minimum of 50% of women representing the target population.

Diagnosis and therapeutic management:

- Have available infrastructures complying with the standards, and skilled and motivated human resources, throughout the Kingdom;
- Take care of 100% of the patients according to international standards;
- Cure 50% of treated cancer patients.

Palliative care:

- Have a nationwide palliative care network;
- Support 100% of patients requiring palliative care.

9.2 Financing

The financing of NCPCP covers both the capital expenditure budget as well as the operating budget for the period 2010 – 2019. It will provide for:

- The strengthening of preventive programs and the introduction of early detection programs;
- The creation of new structures and the upgrade of the existing ones, to cover the entire territory and improve service accessibility;
- The improvement of access to innovative medicines;
- The strengthening of human resources in charge of management and care providing;
- The development of research in all cancer fields.

A budget estimate according to the different axes is proposed in table 2.

Table 2: Provisional budget of NCPCP for 2010 – 2019, in thousands of Dirhams

Action	Budget	%
Prevention	578 700	7,1%
Early detection	146 000	1,8%
Management	7 237 000	88,3%
Infrastructures	789 000	9,6%
Medicines	4 629 000	56,5%
Operation	1 782 000	21,7%
Organization	37 000	0,5%
Palliative care	86 000	1,0%
Supporting measures	150 000	1,8%
Total in thousand DH	8 197 700	

The timetable and detailed budget are attached as annexes.

9.3 Monitoring and evaluation indicators

For the evaluation of outcomes, several indicators will be defined and monitored throughout the implementation of the Plan:

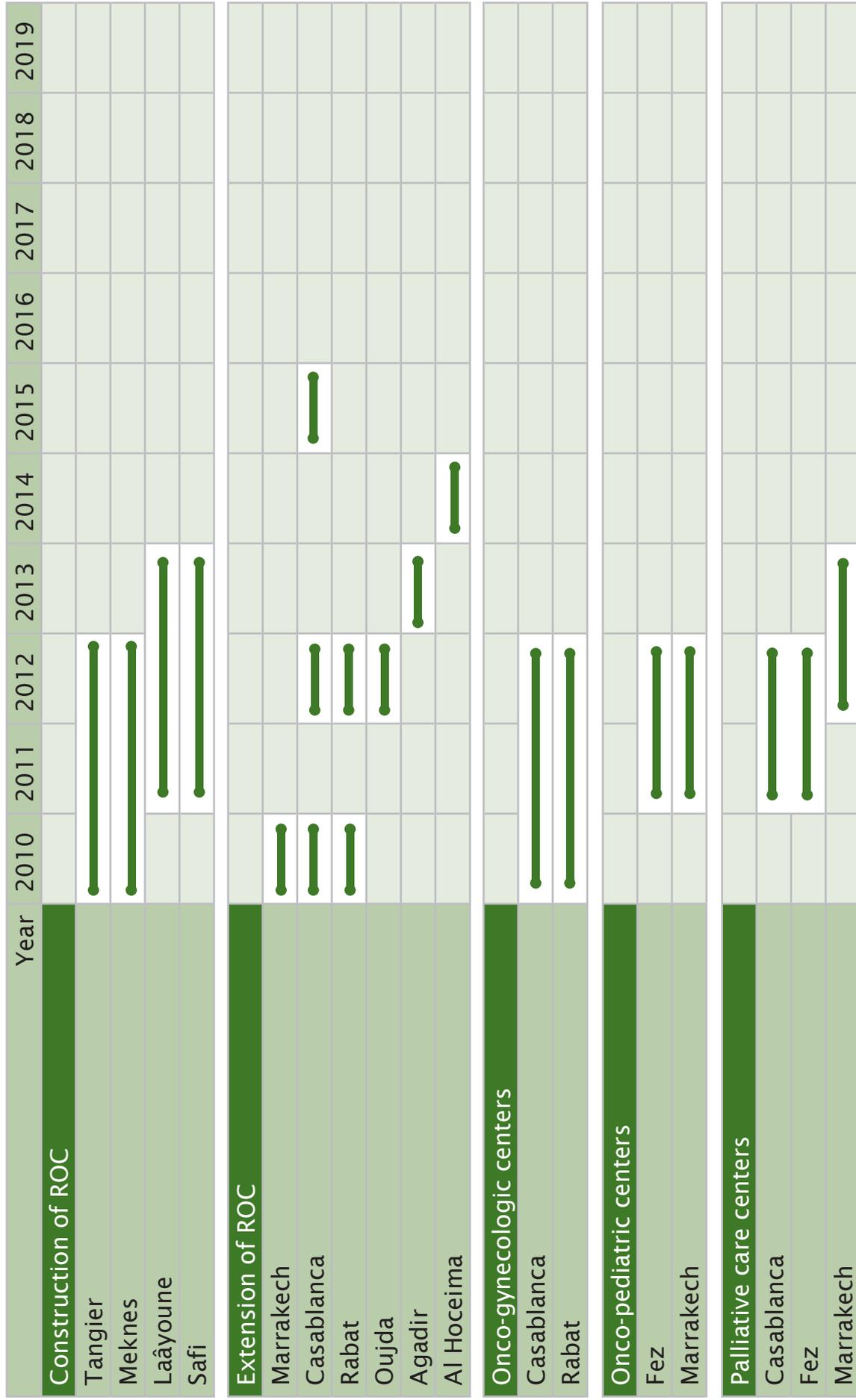
- Reduction by 30% of risk factors prevalence;
- Number of women screened for breast and cervical cancer;
- Number of functional screening structures operating nationwide;
- Number of patients managed;
- Number of patients cured;
- Number of operating structures of diagnosis and treatment;
- Number of patients managed under palliative care.

These global indicators will be detailed in the action plans specific to each component of the NCPCP and must be subjected to continuous monitoring.

Annexes

Annexes

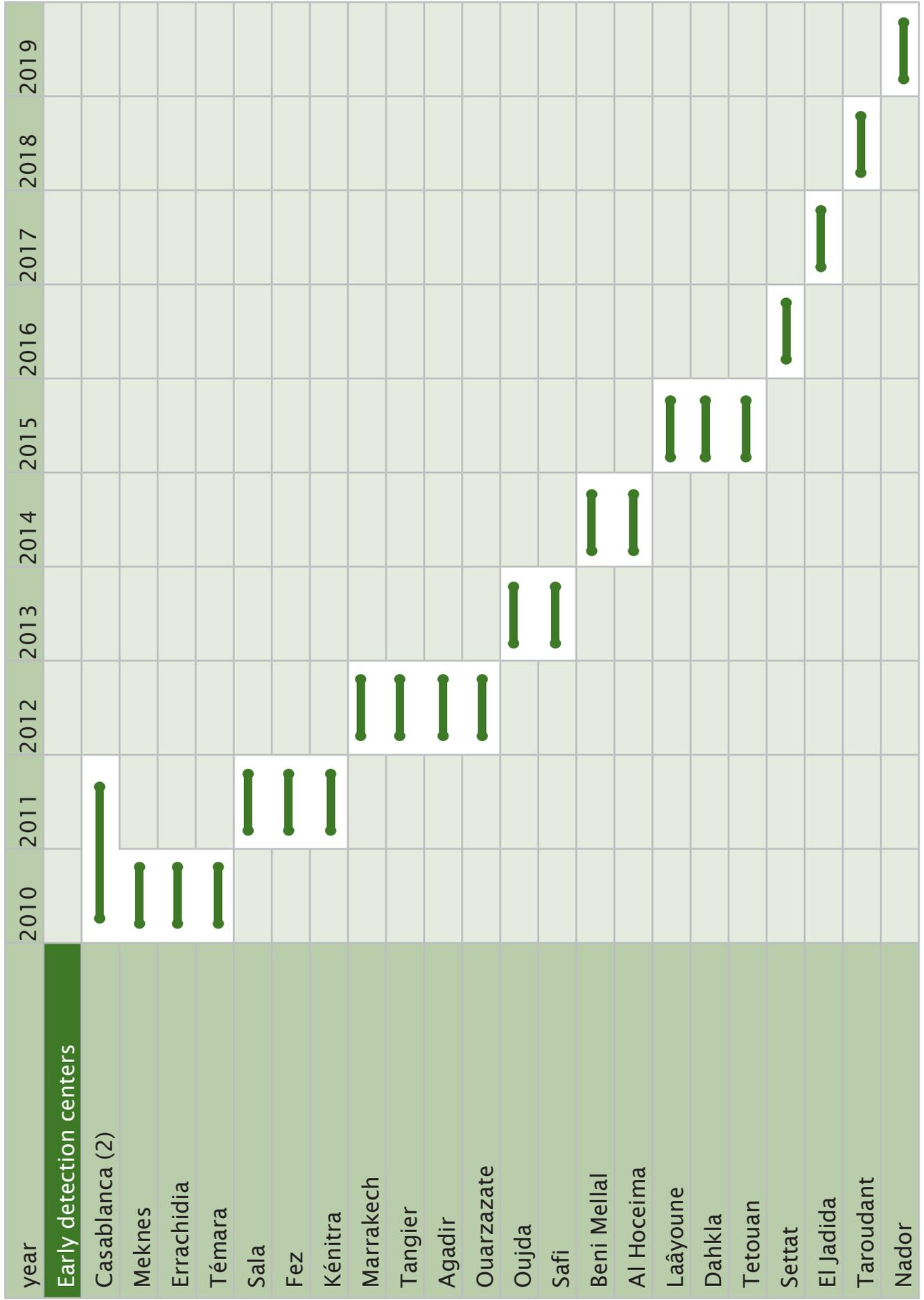
Planning of oncological centers construction



Planning of proximity oncological centers construction

year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Proximity unites										
Ouarzazate	●●									
Béni Mellal	●●									
Errachidia		●●								
Tétouan		●●								
Nador			●●							
Guelmim			●●							
Boulemane				●●						
Taza				●●						
Essaouira				●●						
Khouribga				●●						
El Kalaa des Sraghna					●●					
Tiznit					●●					
Sidi Kacem							●●			
Settat							●●			
El Jadida								●●		
Taroudant								●●		
Khemisset									●●	
Kénitra									●●	
Ain-Sbaa-HM										●●
Hay Hassani										●●

Planning of early detection centers construction



Provisional budget of 2010 – 2019, in thousands of Dirhams (Continued)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
Objective 1	PREVENTION (continued)										
Action 4	200	200	200	200	200	200	200	200	200	200	2 000
Measure	200	200	200	200	200	200	200	200	200	200	2 000
	15- Prevent the damages of UV radiations										
Action 5	200	200	200	200	200						1 000
Measure	200	200	200	200	200						1 000
	16- Improve protective measures and practices in occupational environments										
Action 6	600	600	600	600	600	600	600	600	600	600	6 000
Measure	600	600	600	600	600	600	600	600	600	600	6 000
	17- Control of soil contaminants										
	18- Protection from exposure to electromagnetic and ionizing radiations										
	19- Design a legislative set concerning the risks related to ionizing radiations										
	20- Control atmospheric pollution										
	21- Devise a set of legislation concerning environment-related risks										
Action 7	200	200	200	200	200	200	200	200	200	200	2 000
Measure	200	200	200	200	200	200	200	200	200	200	2 000
	22- Protect consumers against carcinogenic products										
	23- Develop legislation regarding food-related hazards										
Action 8	700	600	1 300	600	600	300	600	1 600	300	600	7 200
Measure	700	600	1 300	600	600	300	600	1 600	300	600	7 200
	24- Measure incidence of cancers										
	25- Measure mortality due to cancer										
	26- Monitor risks related to occupational exposure										
	27- Measure the prevalence of cancer-related risks										
	28- Evaluate the level of knowledge										
	8 400	8 800	8 500	8 800	7 800	107 300	106 600	108 600	106 300	107 600	578 700
	Subs-total of prevention (thousands of DH)										

Provisional budget of 2010 – 2019, in thousands of Dirhams (Continued)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
Objective 2	EARLY DETECTION										
Action 1	Implement a screening strategy										
Measures	500	500	500	500	500	500	500	500	500	500	5 000
	200	200	200	200	200	200	200	200	200	200	
	300	300	300	300	300	300	300	300	300	300	
Action 2	Implement an early diagnosis strategy										
Measure	500	500	500	500	500	500	500	500	500	500	5 000
Action 3	Ensure access to early detection programs										
	21 600	21 600	21 600	11 600	11 600	11 600	6 600	6 600	6 600	6 600	126 000
	200	200	200	200	200	200	200	200	200	200	
	400	400	400	400	400	400	400	400	400	400	
	20 000	20 000	20 000	10 000	10 000	10 000	5 000	5 000	5 000	5 000	
	200	200	200	200	200	200	200	200	200	200	
	400	400	400	400	400	400	400	400	400	400	
	200	200	200	200	200	200	200	200	200	200	
	400	400	400	400	400	400	400	400	400	400	
	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	10 000
	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	
Subs-total of early detection (thousands of DH)	23 600	23 600	23 600	13 600	13 600	13 600	8 600	8 600	8 600	8 600	146 000

Provisional budget of 2010 – 2019, in thousands of Dirhams (Continued)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
Objective 3	PRISE EN CHARGE DIAGNOSTIQUE ET THERAPEUTIQUE										
Action 1	165 000	208 000	247 000	74 000	30 000	25 000	10 000	10 000	10 000	10 000	789 000
Measure	165 000	208 000	247 000	74 000	30 000	25 000	10 000	10 000	10 000	10 000	
	49- Create facilities dedicated to oncology management										
Action 2	270 000	305 000	340 000	373 000	410 000	469 000	528 000	586 000	645 000	703 000	4 629 000
Measure	270 000	305 000	340 000	373 000	410 000	469 000	528 000	586 000	645 000	703 000	
	50- Ensure accessibility to medicines										
Action 3	87 000	102 000	119 000	133 000	143 000	213 000	223 000	238 000	253 000	271 000	1 782 000
Measures	87 000	102 000	119 000	133 000	143 000	213 000	223 000	238 000	253 000	271 000	
	45- Ensure information, detection and follow-up activities at level 1										
	46- Ensure diagnosis and therapeutic management activities at level 2										
	47- Ensure specialized management, training and research activities at level 3										
Action 4	3 700	3 700	3 700	3 700	3 700	3 700	3 700	3 700	3 700	3 700	37 000
Measures	3 700	3 700	3 700	3 700	3 700	3 700	3 700	3 700	3 700	3 700	
	44- Develop actions to demystify the disease										
	48- Develop health-care facilities related legislation										
	51 - Develop legislation related to access to anticancer drugs										
	52- Develop national references of good practices for diagnosis and treatment										
	53- Initiate a quality assurance system of management										
	200	200	200	200	200	200	200	200	200	200	
	54- Institute a monitoring and evaluation system for patient management										
	500	500	500	500	500	500	500	500	500	500	
	55- establish coordination between the different levels of cases management										
	56- Develop human resources of oncology at level 1										
	57- Develop human resources of oncology at level 2										
	58- Develop human resources of oncology at level 3										
	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	
	61- Introduce a management activities information system										
Subs-total of diagnosis and therapeutic management (thousands of DH)	525 700	618 700	709 700	583 700	586 700	710 700	764 700	837 700	911 700	987 700	7 237 000

Provisional budget of 2010 – 2019, in thousands of Dirhams (Continued)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL
SUPPORTING MEASURES											
	1 100	1 100	11 000								
Measures											
Organization											
75- Ensure cancer patients rights	200	200	200	200	200	200	200	200	200	200	
76- Develop advocacy/lobbying for cancer control mobilization	600	600	600	600	600	600	600	600	600	600	
77- Develop a "National Cancer Charter"											
78- Establish a structure for the management of the NCPMP	300	300	300	300	300	300	300	300	300	300	
Training	7 900	7 900	79 000								
Measures											
29- Develop the core curriculum and the continuing training modules on cancer prevention	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	
34- Provide training in early diagnosis techniques	500	500	500	500	500	500	500	500	500	500	
36- Train healthcare practitioners in detection programs of breast and cervical cancers	400	400	400	400	400	400	400	400	400	400	
59- Develop core curricula and continuing training on cancerology	5 000	5 000	5 000	5 000	5 000	5 000	5 000	5 000	5 000	5 000	
Research	6 000	6 000	60 000								
Measures											
30- Develop research in cancer prevention	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	
43- Develop research in the field of early detection	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	
60- Develop research in patient management	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	
74- Develop palliative care related research	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	
Subs-total of supporting measures (thousands of DH)	15 000	15 000	150 000								
TOTAL (thousands of DH)											
	576 800	671 200	762 900	628 200	631 200	855 700	905 000	981 000	1 053 700	1 132 000	8 197 700

July 2009



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