



## Summary

The GLOBOCAN database of the International Agency for Research on Cancer (IARC) estimates that 14 185 new cancer cases (5 198 among men and 8 987 among women) and 10 234 cancer-related deaths (3 927 among men and 6 307 among women) occurred in Mali in 2020. The most common cancers are breast, cervix, stomach, prostate and liver.

Following a request received from the Minister of Health and Social Development (MoH) of Mali in July 2018, an [imPACT Review](#) was conducted from 27 July to 18 December 2020 by the [Programme of Action for Cancer Therapy \(PACT\)](#) of the International Atomic Energy Agency (IAEA), the World Health Organization (WHO) and IARC.

The imPACT mission was organized within the framework of the [WHO-IAEA Joint Programme on Cancer Control](#) to assess Mali's cancer control and prevention system and, due to coronavirus-related travel restrictions, was conducted virtually.

Nine international experts, nominated by the IAEA, WHO and IARC, held technical discussions with more than 50 key stakeholders in the area of cancer, and virtually visited four of the principal cancer facilities in the country (Mali Hospital, Point G Hospital, Gabriel Touré National Teaching Hospital and Luxembourg Hospital).

## Main findings

1. Mali developed a costed "National strategic plan for the fight against non-communicable diseases for 2019–2023". Almost 50% of the non-communicable diseases (NCDs) plan focuses on cancer management and address the following control areas: registration, diagnosis, prevention, treatment, and training. The budget allocated to cancer control is part of a general budget for NCDs control, and it is mainly intended for the subsidy of radiotherapy and chemotherapy.
2. The Malian Cancer Registry was founded in 1986 and has been funded by the MoH since 2017. Data are collected annually from the major hospitals, anatomic pathology laboratories, and death certificates, using CanReg4 (an open-source tool to input, store check and analyse cancer registry data) and coding data in ICD-O-3 (the standard classification system for the registration of cancers). The Malian Cancer Registry is a population-based registry and covers the District of Bamako (15% of Malian population).



3. In Mali, hepatitis B virus (HBV) vaccination of all children over two months was integrated into the national Expanded Programme on Immunization in 2003. The rate of administration of the third dose (Hep3) in one-year-old children was estimated at 71% (full-vaccinated).
4. The Framework Convention on Tobacco Control (FCTC) was ratified in 2005 and a national strategic multisectoral tobacco control plan for 2016–2020 was developed. However, the legal and regulatory framework for tobacco control is not entirely enforced and there is no specific budget allocated for the implementation of tobacco control activities.
5. Cervical cancer screening has been included as a priority component in Mali's strategic plan for disease prevention and control (2019–2023). A pap smear screening test is used only at the request of the examining physician for women aged 20–65 years. The “screen and treat” approach is only followed at referral health centres, where cryotherapy is available. Treatment of precancerous and cancerous lesions are provided free of charge.
6. Standards and procedures for the early detection of breast cancer were developed and approved in 2020, but there is no breast cancer early detection programme based on mammography because of the high cost of the examination. Among the 32 mammographs available in the country. At the time of the Review only 8 out of the 32 were installed (but not yet operational).
7. Mali has 60 radiologists, most of them based in Bamako. There are 32 computed tomography (CT) imaging six not operational). Only four magnetic resonance imaging (MRI) machines are available and there are eight mammography units (none of which were operational at the time of the imPACT Review) in the public health facilities. Image-guided breast biopsies are not provided in public facilities and are exceptionally carried out in private facilities.
8. Cancer treatment is provided at Mali hospital, Gabriel Touré Hospital and Point G Hospital (all public) and by Luxembourg Hospital (private). Most of the facilities have surgical oncology departments, while a few hospitals have chemotherapy units. Only Mali Hospital has a radiotherapy department equipped with a basic linear accelerator, which was non-operational for at least 8 months (at the time of imPACT Review).
9. Paediatric oncology is provided mainly within the paediatric department of Gabriel Touré Hospital, with the support of the Franco–African Paediatric Oncology Group (GFAOP). Shortages of anti-cancer drugs are frequent and paediatric cancer medicines are not included in the list of essential medicines, causing interruptions in treatment.
10. The legal framework for radiation safety in Mali is not in conformity with the provisions of the IAEA's General Safety Requirements (GSR) Part 1 (Rev.1). There are no national policies and strategies for safety, education and training, or radioactive waste management. The lack of competent and properly trained personnel could become critical with the introduction of new radiation technology in medicine.
11. Approximately 280 patients palliative care each month. PMorphine (oral and injectable) is free of charge to cancer patients at Point G Hospital, Mali Hospital and in the oncology department of Luxembourg Hospital.
12. The Bamako Faculty of Medicine provides. Nevertheless, there is a lack of local training for medical specialists in nuclear medicine, radiotherapy and medical physics and the number of physicians trained at the medical school in Bamako does not cover the needs of the country.



# Key priority recommendations

## Cancer Control Planning

- Develop a costed action plan and a resource mobilization strategy for the implementation of the cancer control activities within the NCDs plan for 2019–2023. Create a multisectoral and multidisciplinary committee both at national and regional level to oversee and support planning and implementation of cancer control activities, and to coordinate among national and regional stakeholders involved in cancer control.

## Cancer Registry and Surveillance

Increase the funding of the Registry to enable use of dedicated premises, equipment and personnel by:

- Improving the quality of the system for data collection, coding, entry and control by including new data sources (referral health centres, biology laboratories, imaging services, etc.) and increasing the funding of the Registry (dedicated premises, equipment and personnel).

## Cancer Prevention

- Resume development of a nationwide human papilloma virus (HPV) vaccination programme in line with WHO recommendations on HPV vaccines, in collaboration with relevant technical (WHO; UNICEF; United Nations Population Fund (UNFPA)) and financial partners (GAVI).
- Review the current legislation on tobacco control and establish an effective control and monitoring system to ensure the enforcement of tobacco specific taxation programmes.
- Strengthen, in collaboration with the Ministry of National Education, awareness-raising activities in schools and develop activities for primary and secondary schools on risk factors, with particular emphasis on the harmful effects of tobacco and alcohol.

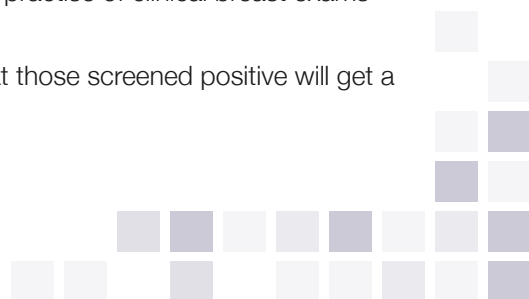
## Early Detection

Strengthen cervical cancer screening programs by:

- Ensuring periodic evaluation of screening campaigns and assess their readiness and capacity to be scaled up at national level.
- Maintaining visual inspection of the cervix with acetic acid (VIA) as the primary screening test for the 25-49 year-old target age.
- Organising training, including regular refresher training, of health providers on VIA screening and precancerous lesions treatment.
- Ensuring capacity and procurement in ablative treatment (cryotherapy or thermal ablation) in primary health centres/mother-and-child centres to scale-up the screen-and-treat approach, in order to reduce the loss-to-follow-up rate.
- Increasing coverage of ongoing cervical screening programme to women at risk (e.g. women living with the human immunodeficiency virus (HIV) and sex workers).
- Integrating cervical cancer screening at Mali's antiretroviral treatment centres.
- Aligning existing cervical screening protocols with WHO guidelines for screening and treatment of precancerous lesions for cervical cancer, including for screening women living with HIV/AIDS.

Strengthen breast cancer screening by:

- Completing the commissioning and repair of mammographs in the public sector and improve current infrastructure and capacity of human resources to perform mammography-based diagnosis.
- Increasing awareness of the general population and health providers on breast cancer (signs and symptoms, normal breast, etc.).
- Organising training and refresher training of health providers on the practise of clinical breast exams (CBE).
- Targeting women aged 40 to 65 to receive CBE and make sure that those screened positive will get a diagnostic mammography and further assessment.



- Ensuring periodic evaluation of screening campaigns and assess their effective coverage and their capacity to be scaled up at national level.
- Developing specific guidelines for early detection and screening of breast cancer.
- Strengthening the capacity for early diagnosis of paediatric cancers by ensuring the training of health practitioners on the early signs of the main paediatric cancers and increasing visibility of paediatric oncology services among general practitioners and health personnel in urban and rural areas.
- Improving the capacity of the pathology laboratory system in the country to enable early diagnosis of the most common cancers and support ongoing screening programmes.

### **Cancer Diagnosis: Radiology and Nuclear Medicine**

- Strengthen existing human resources in the radiology services. Upgrade with modern equipment the biology, anatomic pathology, and cytology services to perform histological examinations and immunohistochemical testing for surgical specimens and biopsies.

### **Cancer Treatment: Medical Oncology, Radiotherapy and Surgical Oncology**

- Ensure the updating of the list of essential medicines for oncology in Mali, based on the WHO recommendations and guidelines.
- Develop national treatment protocols for the most common cancers.
- Finalise the construction of a brachytherapy suite including a bunker shielded for Cobalt 60 and plan the construction of a further external beam radiotherapy (EBRT) bunker and acquire a second EBRT machine.
- Improve the availability and quality of surgical oncology services by introducing laparoscopy and interventional endoscopy at the three large hospitals (Mali Hospital, Point G Hospital, Gabriel Touré National Teaching Hospital), initiating the general refurbishment of the surgical departments in all hospitals, establishing an oncological surgery colloquium for all hospitals in Bamako and promoting case presentations and discussions.

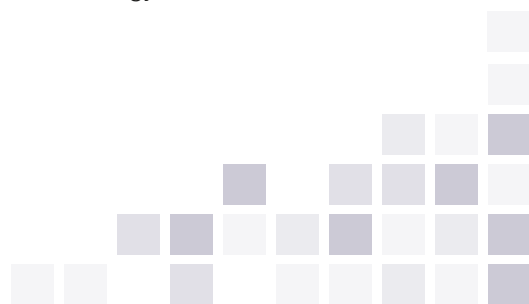
### **Paediatric Oncology**

Improve availability and quality of paediatric oncology services by:

- Completing the development of the paediatric oncology unit in Sikasso.
- Expanding the paediatric surgery department at Gabriel Touré Hospital (increase the in-patient bed capacity and establish an out-patient hospital) and acquiring modern equipment for paediatric cancer surgery in the department.

Strengthen capacity for effective treatment of paediatric cancer by:

- Establishing a list of essential medicines (chemotherapy and antibiotics) compliant with the list published by the WHO Global Initiative on Childhood Cancer.
- Increasing the effective contributions of hospitals in the budget for the treatment of childhood cancers (e.g. purchase of medicine and chemotherapy hoods).
- Maintaining contributions from the Groupe Franco-Africain d'Oncologie Pédiatrique (GFAOP) in paediatric oncology, as an important complement in the selection of treatment protocols and training of human resources.
- Assigning a national coordinator to prepare and facilitate meetings of the Multidisciplinary Tumour board.
- Training nursing personnel in the safe preparation and administration of chemotherapy, ensuring availability of personal protective equipment (PPE).
- Establishing a national training programme on paediatric oncology for dedicated medical staff at paediatric oncology departments, and also as a multidisciplinary and complementary training course for surgeons, anatomic pathologists and radiologists involved in paediatric oncology.



## Radiation Safety

Review the legal and regulatory framework for safety and bring it in line with IAEA standards by:

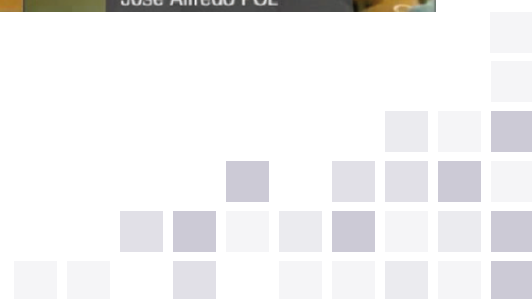
- Establishing national policies and strategies for radiation protection, radioactive waste management and education and training in radiation protection.
- Drafting and adopting a law on safety that is in line with IAEA standards, and specifically General Safety Requirements (GSR) Part 1 (Rev.1).
- Revising radiation protection regulations to bring them in line with the IAEA's General Safety Requirements (GSR) Part 3, including those parts relating to the regulatory control of medical facilities and activities and the control of medical exposure.
- Promulgating regulations on the transport of radioactive material and regulations on radioactive waste management.
- Establishing and implementing provisions for strengthening and maintaining the competence of all parties with responsibilities for the safety of facilities and activities, as well as provisions for the recognition of specialties, and further enhance radiation safety education and training, while also providing for subsequent developments in radiotherapy, interventional radiology and nuclear medicine

## Education and Training

- Strengthen existing partnerships with international organizations (e.g. IAEA and WHO), non-governmental organizations (NGOs), foundations, universities and hospitals, and join international and regional networks to promote distance learning and fellowships abroad.
- Standardize training for nurses and medical technicians, while also improving the theoretical and practical content, and establish mandatory continuous medical education, including a supervision programme for radiologists, gynaecologists and surgeons (specializing in breast and paediatric cancer) as well as medical physicists.
- Strengthen the capacities of health care providers for the systematic screening of risk factors for cancer prevention and early detection (including paediatric cancer) by training at least two health workers per “community health centre” and three health workers per “referral health centre.”



The photo is from the one of the virtual validation meetings.



# IAEA-WHO-IARC joint activities on cancer control

In March 2009, WHO and IAEA signed arrangements at the Director-General level to implement a [Joint Programme on Cancer Control](#). The main purpose of this arrangement is to coordinate activities and resources to provide evidence-based and sustainable support to comprehensive cancer control programmes, particularly in low- and middle- income countries.

In response to a Government request, an [imPACT Review](#) is carried out as a comprehensive assessment of national cancer control capacities and needs. It is a partnership effort between the International Atomic Energy Agency (IAEA), the International Agency for Research on Cancer (IARC) and the World Health Organization (WHO). Where relevant, other partners are involved, such as the Union for International Cancer Control (UICC) and the United Nations Office on Drugs and Crime (UNODC). The IAEA Division of [Programme of Action for Cancer Therapy \(PACT\)](#) is responsible for coordinating the imPACT Reviews and for mobilizing the resources for their implementation.

## Link to imPACT Review news and related resources:



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