



## Summary

Following a request from the Ministry of Public Health and Population (MOH) of the Central African Republic in November 2019, the [Programme of Action for Cancer Therapy \(PACT\)](#) of the International Atomic Energy Agency (IAEA), the Regional Office for Africa (AFRO-WHO) and the International Agency for Research on Cancer (IARC) of the World Health Organisation (WHO), conducted an [integrated mission of Programme of Action for Cancer Therapy \(imPACT\) Review](#) from September 2020 to March 2021.

The imPACT Review was organized within the framework of the WHO-IAEA Joint Programme on Cancer Control and, due to coronavirus-related travel restrictions, was conducted virtually.

The imPACT Review expert team, nominated by the IAEA, AFRO-WHO and IARC, assessed CAF's cancer control capacity and needs in the cancer control continuum ensuring that:

- The national radiation medicine programme is a component of the comprehensive national cancer control programme.
- The national regulatory infrastructure is aligned with the international standards for radiation safety and the security of radioactive material (with specific reference to medical applications of ionizing radiation)

The imPACT Review report provided the Ministry of Health with a set of findings and priority recommendations to orient the planning process for a comprehensive and evidence-based national cancer control plan.

## Main findings

1. Non-communicable diseases (NCDs) accounted for 26% of deaths in the CAF in 2016. The main causes of death attributed to NCDs were cardiovascular diseases (11%) and cancer (4%). According to IARC GLOBOCAN estimates, there were 2675 new cancer cases (1063 in men and 1612 in women) in 2020. The three most frequent cancers (breast, cervical and prostate) constitute nearly half of all cancer incidences in CAF.
2. The COVID-19 pandemic situation in CAF has led to delays in early diagnosis and prevention programmes due to the redeployment of MoH resources against COVID-19. The supply of cancer drugs, which was already limited before the crisis, has been severely disrupted. The fragility of the CAF health system makes COVID-19 prevention an imperative for continuity of health programmes, including clinical services for cancer patients.



3. CAF had a Plan for Non-communicable Disease Control (NCDP) for the period 2015–2021, but not a national cancer control programme (NCCP). Planning and implementation of cancer control activities are centralized, and regional health authorities do not recognize cancer as a priority. The MoH has a department in charge of NCDs but no National Steering Committee oversees NCDP implementation.
4. CAF does not have a population-based cancer registry (PBCR). The sources of available cancer data are provided by the country's Anatomy and Cytology Pathology Laboratory and the medical, surgical and paediatric oncology departments of Bangui hospitals.
5. The country has a number of NCD prevention strategies in place. However, there is no vaccination programme against the human papilloma virus (HPV) and vaccine coverage against the hepatitis B virus (HBV) is estimated at 47% for the third dose (fully vaccinated). CAF ratified the WHO Framework Convention on Tobacco Control (FCTC) in 2005, and a strategic plan for implementation is needed. A national system for monitoring alcohol consumption is required, as well as efforts to promote healthy eating and regular physical activity.
6. There are ad hoc early diagnosis campaigns for cervical cancer in the capital, Bangui, and exceptionally in the provinces, but there is no national programme for early diagnosis of the most common cancers (breast, cervix uteri and prostate). The implementation of early diagnosis is limited by insufficient capacities and irregular hospital clinical services.
7. Overall diagnostic services in CAF are limited. The biological, serological and biochemical examinations necessary for the diagnosis and monitoring of cancer are not generally available. The only functional mammography unit in the country is available in the private sector and the only endoscopy unit is located in the gastroenterology department of the Teaching Hospital Centre, Friendship University (CHUA). The radiology departments of the five university teaching hospitals have outdated, non-digital equipment, and computer tomography (CT) or magnetic resonance imaging (MRI) are not available. The National Teaching Hospital Centre at the University of Bangui (CNHUB) has a new national imaging centre, established at the end of 2020, waiting for equipment (including CT and mammography), to become functional. There is no nuclear medicine service in the country.
8. In terms of treatment capacities, CAF has two medical oncologists and two paediatric oncologists, working in departments such as internal medicine, gynaecologic services and general paediatric services. Chemotherapy is carried out in the paediatric department with limited access to drugs and families paying out of pocket. Cancer surgery is carried out by general surgeons and costs are covered by the patients or their families. There are no radiotherapy services, and no radiotherapists, radiation oncologists or medical physicists trained or in training.
9. There is one public national medical training institution in CAF, the Faculty of Health Sciences, University of Bangui. The number of doctors trained in this institution is insufficient and there is no specific oncology programme. It offers postgraduate education for medical doctors as specialized training in paediatrics, gynaecology, surgery, anatomopathology, public health and hepato-gastro-enterology. There is no postgraduate training in medical biology, medical imaging, nuclear medicine, medical oncology or radiotherapy. There is a need for a human resources development plan based on needs, competencies, and teaching programmes. CAF should consider out-of-country training for its doctors, as well as seek sponsorship and twinning arrangements with universities from neighbouring countries or elsewhere in Africa.



10. Palliative care is not included in the management of cancer, and essential drugs for pain or symptoms management are not available. There are no hospital or private palliative services, or home care services. Morphine, in any form, is not available, nor are other opioids, and there is no drug code. There is no national policy or dedicated funding for this area of specialist care.
11. With regard to radiation safety, there is no national policy or strategy, and no national academic training for maintaining radiation safety skills. The National Radiation Protection Authority (NRA) does not yet have a comprehensive legal and regulatory framework for nuclear safety and security, and effective coordination of the NRA with the MoH is not established. Calibration services for radiation measuring equipment are not available in country. Workplace monitoring is not implemented, and it is unclear whether the radiation protection programme is a regulatory requirement for the licensing.

## Key priority recommendations

### Cancer Control Planning

- Develop an NCCP and establish cancer control governance mechanisms, including a coordination or steering committee.
- Develop an NCCP action plan with identified partners responsible for implementation, funding sources and a realistic timeframe.

### Cancer Registration

- Support the gradual establishment of a PBCR. The implementation of this registry will start in Bangui, which covers almost half of CAF's population. Its expansion to other localities will depend on the results and the Government's commitment.
- Strengthen the recording and monitoring of cancer cases diagnosed and treated in various hospital departments.
- Provide training for identified staff, including doctors, ward supervisors and agents responsible for data collection, entry, and analysis.

### Cancer Prevention

- Develop and implement national standards and guidelines for the prevention of the most common cancers according to WHO and IARC recommendations.
- Implement a vaccination programme against HPV.
- Develop and implement a national plan to combat viral hepatitis, including vaccination of 100% of newborns against HBV within 24 hours of birth (WHO recommendation).

### Early Detection

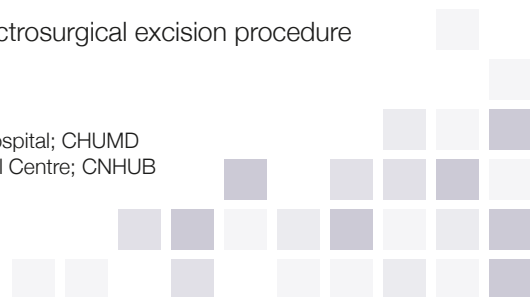
#### Breast cancer

- Educate women about breast abnormalities that may be due to cancer. Cancer awareness should be introduced when there is sufficient capacity for timely quality diagnosis and treatment services.
- Introduce breast examinations (ultrasound-mammography) at CNHUB, CHUA, CHUC and the CHUMD<sup>1</sup>.

#### Cervical cancer

- Implement, in view of the currently available resources, enhanced theoretical and practical training on visual inspection with acetic acid (VIA), thermo-coagulation and cryotherapy.
- Train gynaecologists in designated facilities in colposcopy, loop electrosurgical excision procedure (LEEP) and cold knife conization.

<sup>1</sup> CHUA Teaching Hospital Centre, Friendship University; CHUC University Community Hospital; CHUMD Teaching Hospital Centre Maman Elisabeth Domitien; CHUP Paediatric Teaching Hospital Centre; CNHUB National Teaching Hospital Centre, University of Bangui.



- Evaluate the availability of ultrasound services and tailor the programme accordingly. Ultrasound is affordable, easy-to-implement, non-ionizing, multipurpose, and key to cervical cancer management<sup>2</sup>.

### **Prostate cancer**

- Discourage mass screening using prostate-specific antigen (PSA) testing and consider it for early diagnosis in symptomatic populations and in at-risk populations (for example those with a family history of prostate cancer, relevant age groups, etc.).

### **Paediatric cancers**

- Raise awareness and train paediatricians, general practitioners and medical staff on paediatric cancers, particularly retinoblastoma and Burkitt's lymphoma, and their early diagnosis as part of preventive medicine campaigns at primary schools and colleges, or systematic physical examinations or check-ups.

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

- Increase the number of specialists, such as biologists and pathologists, in the biology and anatomic-pathology departments of CHUA, CNHUB, CHUC, CHUP and CHUMD hospitals.
- Repair and acquire new endoscopes for the surgery and gastroenterology departments of the CHUA and CNHUB hospitals.
- Make the newly installed equipment of the CNHUB imaging centre (CT and digital mammography) clinically ready. Ensure a quality control protocol for mammography and CT and start clinical services as soon as possible.
- Acquire modern equipment (ultrasound, digital table, CT, and mammography) for the radiology departments at CHUC and CHUP.
- Introduce ultrasound-mammography diagnosis of the mammary glands at CNHUB, establishing the hospital as a reference centre for diagnostics and training in breast cancer screening.

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

- Establish a medical oncology department at CHUC or CNHUB to form a comprehensive cancer care facility.
- Establish a list of essential drugs for chemotherapy, hormone therapy and palliative care of the most common cancers (breast, cervix uteri and prostate) and make them available in major hospitals and pharmacies.
- Establish referral mechanisms with sub-regional radiotherapy centres for patients who are candidates for curative radiotherapy, pending the installation of a radiotherapy facility in the country.
- Set up a multidisciplinary steering committee to monitor the project to create a radiotherapy department
- Develop a paediatric oncology unit at CHUP in Bangui by strengthening human resource capacity and equipment availability.
- Create an autonomous paediatric oncology service at CHUP and develop diagnostic facilities (pathological anatomy, with subsequent flow cytometry, immunophenotyping and bacteriology).

## **Paediatric Care**

- Update the list of essential medicines to include morphine, with a preference for morphine in syrup form.
- Design and deliver training workshops on pain management, adapted for general practitioners, specialists, and nurses.
- Organize training on the role of palliative care in the management of NCDs for practitioners and directors of the five reference hospitals CHUA, CHUC, CNHUB, CHUP, and CHUMD.
- Initiate a pilot doctor-nurse team, from the internal medicine department (where cancer patients are cared for), followed by mobile team support through home visits. The doctor will elaborate the palliative care plan, including eligibility of patients; provide pain and symptom management strategies; patient information; and home-based care, if needed. The nurse will provide the same care as that provided by an inpatient nurse, assess patients at home and report to the doctor, as needed.

<sup>2</sup> Reference to this recommendation can be found in the [WHO framework for strengthening and scaling-up services for the management of invasive cervical cancer](#) (Table 2.2) ; and on the [2nd edition of the WHO guide to essential practice for comprehensive cancer control](#) (Table 6.2)



## Radiation Safety

- The Government should strengthen the existing legal and regulatory frameworks in order to cover radiation safety and the security of radioactive material in a comprehensive manner.
- The Government should ensure the effective independence of the NRA.
- The NRA should develop competency and expertise to discharge the regulatory functions effectively.
- The NRA should review and update regulations on radiation safety and the security of radioactive material.
- The NRA should address authorization of radiation safety related service providers.
- The NRA should develop a regulatory requirement for licensees to have a radiation protection programme for issuing licences.
- The Government should establish a statutory basis for the NRA with responsibilities for authorization and inspection for compliance in medical facilities where radiation sources are used.

## Education and Training

- Increase the number of general practitioners trained in CAF to meet the country's growing needs in the field of cancer care.
- Seek sponsorship and twinning arrangements with faculties of health sciences in the region for graduate and postgraduate cancer-related medical training of various medical and paramedical specialists (nurses, midwives and technicians).
- Recruit doctors specializing in biology, anatomic-pathology, medical imaging, surgery of all specialities, medical oncology, paediatric oncology, nuclear medicine and radiotherapy.
- Establish priority education and training programmes for doctors, technicians and physicists (related to an approved project in implementation phase) for nuclear medicine, radiotherapy and medical physics.



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# 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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