



Summary

Following a request received from the Minister of Health of the Republic of Fiji in November 2022, an imPACT Review was conducted from 19 to 25 February 2023 by the Programme of Action for Cancer Therapy (PACT) of the International Atomic Energy Agency (IAEA), the World Health Organization (WHO), and International Agency for Research on Cancer (IARC). The imPACT Review was organized within the framework of the WHO-IAEA Joint Programme on Cancer Control. A team of international experts, nominated by the IAEA, WHO and IARC, held technical discussions with key stakeholders, and visited the principal cancer facilities in the country.

Main findings

1. Health system overview: Fiji's health system comprises a comprehensive public health sector in conjunction with a smaller private fee-for-service model offering some specialized healthcare services. Public health care in Fiji is exclusively funded from general taxes revenue. Donor funds to support the overall health sector in Fiji are generally low. There is acknowledgement of the need for long-term financing solutions that will reduce reliance on government finances and raise the percentage of GDP allocated to health care. There is no universal or social health insurance system in Fiji. Under the Free Medicine Policy, the Fijian population is able to access services for free or at very low cost, and the incidence of out-of-pocket payments for health in Fiji is progressively distributed. While the budget allocation for the health sector in Fiji has increased in recent years, there are ongoing challenges in ensuring that healthcare services are adequately resourced, particularly in terms of workforce, equipment, supplies, and infrastructure. Even though healthcare is free to all Fijians, barriers remain in terms of equity, as arising from quality, accessibility, and affordability.

General staffing availability and capacity within the health system varies significantly across the four divisions in Fiji. There are ongoing challenges with strengthening human resources for health, including low health care worker retention, motivation and skills development, and low salaries as compared with the private sector and overseas, which have led to vacancies across the workforce, particularly at the primary care level. There is a recognised need to maintain flexibility of staff within the health system, though this has complicated efforts to develop cancer specific skills and dedicated cancer-related career pathways which also inhibits efforts to effectively "task shift" across the cancer care continuum. Fiji's supply chain system operates a combination of a 'push and pull' system, with need for supplies and consumables largely based on past usage. Ensuring consistent and timely availability of essential supplies has been challenging for the system, with health facilities and laboratories frequently reporting stockouts of medications, supplies and consumables. A new web-based warehouse supply management system, 'M-supply', which will enable more responsiveness to evolving local needs, is currently being rolled out.

- 2. Cancer burden: According to IARC's GLOBOCAN, in 2020 there were approximately 1487 new cancer cases (595 in men and 892 in women) and 825 cancer deaths (312 in men and 513 in women). Comparing to neighbouring countries, the age-standardised rate (ASR) of incidence from all cancers was 168.7 in Fiji, 107.8 in Vanuatu and 306.4 in New Caledonia. The ASR of mortality from all cancers was 98.4 in Fiji, 69.4 in Vanuatu and 119.5 in New Caledonia. It is estimated that by 2030 cancer incidence and mortality will face an increase, resulting in 1790 new cancer cases and 1040 cancer deaths. Women are more affected because of the high burden of breast cancer (302 new cases), which ranks first followed by cervical cancer (136 new cases) and corpus uteri (67 new cases). The three most frequent cancer sites for men are prostate (198 new cases), liver (52 new cases), as well as colon and rectum (42 new cases combined). All cancer data in Fiji are managed and analysed by the Data Analysis Management Unit. While a number of data sources and records exists, there needs to be one overall cancer registry which combines and verifies data from across sources and provides data to inform decision making and to guide effective planning and service delivery.
- 3. National cancer control planning and governance: The Non-Communicable Diseases and Wellness (NCDW) department is responsible for developing policies, guidelines, and programmes to prevent and manage NCDs, which include cancer, as well as diabetes, cardiovascular diseases, chronic respiratory diseases, and mental health disorders. The key areas of focus of the NCDW department include health promotion and education, policy and advocacy, the provision of quality clinical services, and partnership and collaboration. The NCDW has developed a new Wellness/ NCD Strategic Plan spanning the period 2020-2025, which is awaiting finalisation and expected to be launched in 2023. A draft of the National Cancer Control Plan (2023–2030), a separate document that aligns to the Wellness/NCD Strategic Plan, is available but needs further consultation with both internal and external stakeholders to enable effective elaboration of key components before it can be submitted for approval. The priorities for cancer control as per the draft NCCP suggest a helpful shift towards a much more health system orientated cancer control vision and plan.
- **4. Primary prevention:** The population attributable fraction (PAF)¹ for cancer burden due to primary risk factors in Fiji suggests that 21.2% of cancer cases is attributable to infections and 5.5% to obesity. As for cancer deaths, 14.3% could be attributable to tobacco consumption, 4.0% to alcohol consumption and 1.3% to occupational risk.

While tobacco consumption has slightly decreased in the general population, consumption among teenagers has increased, with prevalence among males



¹ The PAF is the proportional reduction in population disease or mortality that would occur if exposure to a risk factor were reduced to an alternative ideal exposure scenario

threefold that of females. Fiji is a signatory of the WHO Framework Convention on Tobacco Control and launched the WHO FCTC 2030 Project to deter from violating tobacco laws and limit unnecessary interaction from the tobacco industry. Compliance with the Strategy implementing the FCTC (MPOWER Strategy) needs to be enhanced—monitoring is minimal, smoke-free environments are patchy, few pharmaceutical drugs are included in tobacco cessation programmes and tobacco taxes are well below the recommended 85% rate.

HPV vaccination was introduced in Fiji in 2009 and became part of the National Immunization Programme in 2013. HPV vaccination is offered free of charge for girls aged [school year 8]. From 2017–2021, the coverage for the first dose was above 90%, while coverage for the second dose declined from 70% in 2017 to less than 60% in 2021. Due to the COVID pandemic, two cohorts were missed for the second dose of the vaccine and coordinated efforts needs to be in place to complete the vaccination cycle for the girls who were missed. There is a cost-analysis that concludes that shifting to single-dose HPV vaccine² and including boys in the vaccination programme will only marginally increase the current cost of the HPV vaccination programme; hence, in terms of cost implications, this is feasible option for Fiji. HBV vaccination is also freely available through the National Immunization Programme, including the birth dose.

5. Early detection: Cervical cancer screening is well below the 70% target for coverage with 16% of women screened in the past 5 years. A cervical cancer prevention and control costing exercise was conducted, aimed to collect evidence to renew the Cervical Cancer Policy, revealed a critical lack of human resources and infrastructure to achieve the screening targets. It is recommended that HPV DNA tests are performed widely (gradually replacing current liquid-based cytology as a primary test), and that liquid-based cytology tests are offered to women needing further testing, on a triage basis. In order to accomplish this transformation, the existing protocol for cervical cancer screening should be aligned with WHO's guideline for screening and treatment of cervical pre-cancer lesions.

The proportion of late-stage breast cancer is a concern, with only 10% of breast cancer cases diagnosed at stage I or II. Similar to breast cancer, colorectal cancer is generally detected too late, with 90% of cases diagnosed at stage IV. Further health system strategies for control of both cancers should aim at implementing a clear algorithm for early diagnosis, to ensure timely diagnosis and access to treatment care for symptomatic individuals. For this purpose, the current service provision should be organized to ensure optimal client referral pathway.

6. Cancer diagnosis – pathology and laboratory services: 15% of the pathology workload is cancer diagnosis, most of it conducted at the three divisional hospitals. Cervical cytology tests face a major backlog due to limited capacity and current remedial strategies include arrangements with private providers and decentralising the service. Procurement of equipment and essential consumables is a challenge in public hospitals. For example, immunohistochemistry (IHC), an essential diagnostic tool for breast cancer, is only available 50% of the time. The laboratory at Lautoka Hospital seems to be better supported since it transitioned to a private-public

² In line with the latest recommendations by WHO

partnership with easier access to equipment and consumables available more consistently. Equipment downtime while waiting for repair is another challenge in the public hospitals, highlighting the need for more bioengineers on site.

Since the last imPACT Review in 2014, there has been some improvement in human resources development, with one pathologist working in each of the three divisional hospitals. There is now a formalised educational pathway with a Masters of Pathology through the Fiji National University, which also provides training for the Pacific region. In the current context and level of health system development, there should be consideration for pathologists to have interest in certain cancer streams and become specialized experts e.g., in paediatric oncology.

7. Cancer diagnosis – diagnostic imaging: The availability and quality of radiology services can vary depending on the location and the healthcare facility. In the major cities, such as Suva and Lautoka, several public and private hospitals offer radiology services, including X-ray, ultrasound, computer tomography, and magnetic resonance imaging. However, access to services may be limited in more remote areas.

The Ministry of Health and Medical Services has made efforts to improve radiology services, including procurement of new equipment, training radiology technicians, and establishing quality assurance programmes. Challenges remain, including a shortage of trained radiologists and technicians and limited resources for equipment maintenance and upgrades. For example, there was a plan to distribute 22 digital radiography machines to sub-divisional hospitals, however, this has not occurred because hospitals need a stable power supply and climate-controlled environment to operate the machinery.

Further improvements can be achieved through acquiring specific skills of the existing workforce, primarily focused on oncological imaging, and adhering to safe practices. Quality management system programmes require significant improvement, including for more systematic approach to the multidisciplinary management of cancer cases. Radiation protection officers should be appointed in all hospitals and radiation safety programmes should be established, including regular procedures to measure radiation exposure of staff and patients.

8. Cancer treatment – surgical oncology: Three divisional public hospitals offer surgery to treat cancer: Colonial War Memorial Hospital (CWMH) in Suva, Lautoka Hospital and Labasa Hospital. CWMH is the referral centre, both nationally and regionally for other Pacific Islands. The private hospital in Suva, Oceania Hospital, also offers surgical procedures for breast, urologic and gynaecological cancers. Efficient referral systems are critical to ensure prompt surgical treatment and improve chances of survival. Referrals have improved for some cancers, such as patients of suspected breast cancer, with CWMH reporting significant progress in reducing mortality.

Development and retaining human resources in surgical oncology requires priority action. Currently, there is a shortage in nurses, which has resulted in some surgeries being cancelled. The number of surgeons and anaesthetists is below the recommended ratio (5.8/100 000 versus 20/100 000). The government should put in place a strategy to retain graduates from medical schools and medical staff currently working in the system.



There are some international training partnerships showing promising results. The mentorship programme between the International Gynaecology Cancer Society and the Colonial War Memorial Hospital resulted in the first gynecological oncologist graduating in Fiji. Further, the agreement between CWMH and North Shore Hospital in Auckland, New Zealand, offers additional training opportunities for surgeons. Conducting multidisciplinary tumour boards with participation of international experts might be another option to strengthen mentorship and enhance quality of surgery and cancer management in general.

9. Cancer treatment — radiation oncology: Radiation oncology services are not available in the country. A small number of patients travels overseas for treatment. Most of these are funded by personal insurance or are self-funded. Precise number of patients is not available. However, financial coverage from 2019 to 2022 indicates USD 2.5 million spent for this purpose from private insurers, while the Ministry of Health had spent USD 175 000 for 55 patients, mostly for radiation treatment.

There are no fully trained radiotherapy health professionals in Fiji. Two medical physicists were educated overseas receiving master's in medical physics. They are currently employed in academic positions in Fijian universities.

The Government of Fiji has signed an agreement with Aspen Medical for publicprivate partnership at Lautoka Hospital. Under this framework, a new building will accommodate radiotherapy department, planned to be operational by June 2025. In this regard, the imPACT Review team provided comprehensive guidance (*road-map document*) on the future planning of the radiotherapy facility in terms of infrastructure, equipment, workforce development, quality and safety.

10. Cancer treatment — medical oncology: Limited chemotherapy is administered at the three divisional hospitals. Colonial War Memorial Hospital (CWMH) is a national referral centre in case of complex cases, also leading the process of inter-hospital case review. In terms of pediatric oncology, Fiji's two centers (CWMH and Lautoka Hospital) manage 45–50 new childhood cancer cases annually using the Pacific protocol and with remote and in-country support from Christchurch, New Zealand.

In cases where medical oncology treatment is not available locally, the patient qualifies for an overseas referral. The patient may seek government assistance or fund the treatment through bank loan, medical insurance or self-financing. For those requiring government funding, the referral must be justified based on lack of treatment availability in the country, followed by an assessment report concerning at least 5 years survival rate post treatment. Those cases that are approved for government funding may or may not receive full cost of the treatment depending on their socio-economic status, and budget availability.

A limited range of cancer chemotherapeutic and hormonal drugs are available for the administration. Most of the drugs on the essential list of medicines are out-ofdate and need upgrading. These drugs are purchased in large quantities by the Fiji Pharmaceutical Services and Biosecurity Center. Cytotoxic drugs handling is done in a safe manner at the Colonial War Memorial Hospital, using the laminar flow hood which is not available at Lautoka (under reconstruction) or Labasa hospitals. The country should prioritize the upgrade of chemotherapy suites, treatment protocols and facilitate training for medical oncology workforce.

11. Palliative care: The current estimate is that three quarters of 1487 new cancer cases per year are diagnosed with advanced cancer and will need access to pain management and palliative care services. Local estimates suggest the needs double when the prevalent cases are taken into consideration.

Since the imPACT Review in 2014, which detailed no national palliative care programme, a Community Palliative Care Project (2022) dedicated to a decentralization model of care has been articulated and implementation in the central division has begun.

There is currently no specialized palliative care centre or unit. A dedicated pain management team is established at the Colonial War Memorial Hospital, with a trained palliative care clinician and palliative care nurse, providing services to both adults and children. Apart from the clinically provided aspects of palliative care, civil society organizations - Fiji Cancer Society and WOWsKids, provide regular financial support for treatment needs as well as emotional and spiritual support to patients and families.

The current policy environment is supportive with a full set of opioid analgesics included in the essential medicines list (2019) and a vision for development of palliative care programme, which is embedded in the new National Cancer Control and Prevention Plan (2023; final draft). Major challenges remain in ensuring continuous supply of opioid medicines (pertains to all essential supplies) as well as address existing legal and non-legal barriers in prescription of opioids, including the need to train health providers in adequate opioid management.

12. Radiation safety considerations: The Radiation Safety Act, which was prepared with the IAEA technical assistance, requires finalization and endorsement. This will be an important legal precondition for IAEA' assistance for the planned radiotherapy facilities at Lautoka Hospital. The draft regulation makes provisions in all areas relating to radiation safety and sets out the basis for allocation of responsibilities to the various stakeholders, establishes the main radiation protection principles, and the provisions for the inspections, enforcement and appeals.

The finalization of the draft Radiation Safety Act should ensure provisions regarding effective independence of the existing regulatory body (Radiation Health Board) in its safety related decision-making process and the need to establish an executive part of the regulatory body provided with the adequate resources and competences. In addition, human resources for the proper and timely discharge of the regulatory functions of the Radiation Health Board should be made available. More specific recommendations are provided in the main body of the report.



Key priority recommendations

National cancer control planning and governance

- Prioritize finalization and approval of the National Cancer Control and Prevention Plan (NCCP), including a phased costed workplan, and monitoring and evaluation framework.
- Support the case for a dedicated cancer-focused person within the Ministry of Health and Medical Services for the coordination of cancer related activities, as outlined in the NCCP.
- Finalize the governance and coordination structure around the NCCP under two levels. First, a core coordination committee to guide the implementation of the NCCP, formed of key Ministry of Health staff and key partners, and second, reconstitute the current technical working group to bring together a broader range of public health, clinical, and health system representatives under the new Fiji National Cancer Coalition. This Coalition would support the technical and operational implementation of the NCCP and related efforts.
- Support the development of a resource mobilization plan to enable and boost the ongoing implementation of the NCCP, and to open long-term financing solutions for cancer control.
- Strengthen data collection and analysis, with priority to be given to the introduction of a formal cancer registry, the effective integration or linkage of various data sources, and the development of standard operating procedures and key performance indicators.

Primary prevention

Tobacco control

- Monitor routinely the prevalence of smoking among all age groups.
- Improve enforcement of smoke-free environments and further extend smoke-free laws from current places to other public places, beginning with government agencies, educational facilities including universities, indoor offices and workplaces.
- Raise taxation gradually, so that the excise taxation on finished tobacco products reaches around 85% of their retail prices. Allocate a proportion of the increased tax revenue to support cancer prevention, early detection and treatment services.

HPV vaccination

- Based on WHO SAGE's latest recommendation, adopt a single dose vaccination protocol, without the need to change from the current bivalent vaccine. In the future, consider the quadrivalent vaccines, if funding is available.
- Change school-based vaccination from Y8 to Y6, to give allowance of time for the school team in Ministry of Health and Medical Services to provide vaccinations. Introduce a plan for implementing catch-up vaccination programme to the missed cohort of 20 years-old, due to the disruption of schools during the COVID-19 pandemic.

Early detection

Cervical cancer

- Stepwise shift towards HPV DNA as a primary test for cervical cancer screening. In order to accomplish this transformation, the existing protocol for cervical cancer screening should be aligned with WHO's guideline for screening and treatment of cervical pre-cancer lesions. A sustainable financial support for its implementation should be identified.
- In the new protocol using HPV DNA test as the primary test, cytology tests should be proposed as a triage for any women with high-risk HPV identified.

Breast and colorectal cancer

• Further health system strategies for control of breast and colorectal cancers should aim at implementing a clear algorithm for early diagnosis, to ensure timely diagnosis and access to treatment care for symptomatic individuals. For this purpose, the current service provision should be organized to ensure optimal client referral pathway.

Cancer diagnosis (pathology and laboratory services)

- Improve quality of current services by ensuring pathologists from all 3 divisional hospitals are part of the multi-disciplinary tumor boards on weekly basis and formalise institutional agreements with international team of experts to join multi-disciplinary tumor boards on monthly basis.
- Improve capacity of current infrastructure by ensuring good service agreements with vendor in place and enhance availability of biomedical services.

Cancer diagnosis (diagnostic imaging)

- Ensure establishment of radioprotection programme for appropriate personnel to be able to lead this initiative in each of the hospitals. This can be achieved at hospital level by initially appointing a radiation safety officer that would support the establishment of the radiation protection programme as per the International Basic Safety Standards.
- Establish Quality Assurance and Quality Improvement Programme in hospitals. This can be achieved by adopting the IAEA Quality Management Audits in Diagnostic Radiology (QUADRILL), which will support establishing safe clinical practices.
- Strengthen multidisciplinary tumor board with teleradiology option for overseas discussion on regular basis to increase the confidence of the radiology and clinical staff.
- Nationwide radiology information system, picture archiving and communications system, and digital imaging and communications system, should be considered to ensure efficient sharing of clinical data within and outside hospitals in real time.

Cancer treatment (surgical oncology)

• To improve current workforce capacity and build on good training practices with overseas institutions (the International Gynaecology Cancer Society), provide support to at least another trainee in gynaecology oncology. Used this model to potentially replicate capacity development efforts to other streams of surgical oncology.



• To improve quality of services, ensure combined multi-disciplinary meetings with other local divisional hospitals weekly, and monthly meetings with international experts according to cancer streams. Develop set of key performance indicators (KPIs) to be reviewed on regular basis.

Cancer treatment (medical oncology)

- Engage technical support from WHO, IAEA, IARC and countries which have well established medical oncology services to upgrade treatment protocols.
- Develop a comprehensive workforce development plan for medical oncology including training of registrars, oncology nurses, oncology pharmacists and support staff. Training and workshops for medical oncologists and oncology nurses should be prioritized.
- Oncology and palliative care must be recognized as a separate specialty and registration of related specialists should be pursued for optimally trained doctors and nurses.

Cancer treatment (radiation oncology)

- Produce a National Radiotherapy Plan under the framework of the new National Cancer Control and Prevention Plan. This should address equity of access to the planned radiotherapy service and access to overseas treatment in the meantime.
- Finalise the design for the radiotherapy centre at Lautoka Hospital, taking into account various areas as noted in the IAEA master planning publications including administration, waiting areas, external beam radiotherapy areas, a brachytherapy suite, consulting areas and imaging/treatment planning areas. Further, prepare for procurement of radiotherapy equipment considering the scope of the intended service and preparing appropriate specifications of equipment. The IAEA/WHO technical specifications publication should be consulted for detailed information (*specific recommendations and links to IAEA/WHO resources are provided in the respective section*).
- Identify overseas training institutions to train Fijian radiation health professionals and identify Fijian candidates to be trained at overseas training institutions.

Palliative care

- Identify Ministry of Health and Medical Services (MoHMS) and clinical team leads that can work with UN Office of Drug and Crime (UNODC) with involvement of the National Drug Control Agency as needed, to evaluate the needs and usage of opioid analgesics in 2023–2024, with training of a core team that can continually monitor and update the annual estimates and reporting process to the International Narcotics Control Board (INCB).
- Identify a core team drawn from the MoHMS, drug regulation authority, clinical team and civil society to steer a comprehensive policy review, with the aim to establish needs and recommendations on key policies to be updated, steps towards development of an essential package for palliative care, needs for revision of the list of opioid analgesics and determine scope for palliative care training.

Radiation safety considerations

• The Government should finalize and enact the draft Radiation Safety Act 2017 to strengthen the existing governmental, legal and regulatory framework for radiation safety.

[Basis: GSR Part 1, Requirement 2, 3 and 4]

- The Government should establish an independent regulatory body for safety and provide it with the adequate resources necessary to fulfil its statutory obligation for regulatory control of facilities and activities with radiation sources. *[Basis: GSR Part 1 (Rev. 1), Requirements 4, 11 and 18]*
- The Government should complete the regulatory framework for safety by establishing regulations to complement the legal framework; the requirements related to occupational and medical exposure control are of particular importance. [Basis: GSR Part 1 (Rev. 1), Requirement 2 and 33; GSR Part 3, Requirements 2 and 3]
- The Regulatory body should ensure that all the facilities and activities using radiation sources have an authorization to conduct specified activities, as required under the legislative framework for safety.
 (Pasis: GSP Part 1 (Pay 1) Paguirement 221

[Basis: GSR Part 1 (Rev. 1), Requirement 23]

- The Regulatory body should ensure that all the facilities and activities using radiation sources are inspected. An inspection programme, based on the associated potential risk of the facilities and activities using a graded approach, should be developed. *[Basis: GSR Part 1 (Rev. 1), Requirements 2, 23 and 24]*
- The Regulatory body should establish and maintain records relating to the safety of facilities and activities, including the register of radiation sources and records of doses from occupational exposure.

[Basis: GSR Part 1 (Rev. 1), Requirement 35]

 The Regulatory body should require the licensees to develop and submit a radiation protection programme, including the arrangements for the designation of controlled and supervised areas, for local rules and for monitoring of the workplace, and the use of personal protective equipment.

[Basis: GSR Part 3, Requirements 24]

- The Regulatory body should ensure that all occupationally exposed workers are under an individual monitoring programme adequate for the type of exposures they receive as a consequence of their work. Licensees are responsible for making arrangements for individual monitoring with approved dosimetry service providers. [Basis: GSR Part 3, Requirement 25]
- The MoH and the Regulatory body should ensure the implementation of the requirements for justification of medical exposures and optimization of protection and safety.

[Basis: GSR Part 3 Requirement 37 and 38]

• The Regulatory body should establish regulatory requirements and ensure that quality control (QC) tests and carried out regularly in medical facilities. There is a need to improve expertise and the availability of equipment to be able to make these measurements.

[Basis: GSR Part 3, Requirement 25 and 38]

The WHO-IAEA-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. The 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.

Click here to read more about the imPACT mission to Fiji: Fiji Works with IAEA, IARC and WHO to Develop Road Map for its First Radiotherapy Facility | IAEA





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