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Cancer Dashboard for Algeria

Katarina Gralén, Ida Haggren, Thomas Hofmarcher

THE SWEDISH INSTITUTE FOR HEALTH ECONOMICS
ENABLING INFORMED DECISION MAKING

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Purpose and content

This report provides an illustrative description of a selected set of key indicators to help measure and understand the burden of cancer and the performance of cancer care in Algeria, with the ultimately aim to improve cancer care in the country. Although a multitude of indicators and metrics is needed to fully describe the cancer healthcare and control status in Algeria, the selected indicators relate to outcomes, resources and process metrics in all areas of cancer care and control. Whenever available, the indicators benchmark the current status in Algeria against targets set by the World Health Organization and other international bodies.

The dashboard is intended to reinforce the implementation of ongoing initiatives in Algeria, such as the National Strategy on Prevention and Fight against Cancer 2025 -2035 (La Stratégie Nationale de Prévention et de la Lutte contre le Cancer 2025-2035), to further improve cancer care in the country. The description seeks to support Algerian policy makers in the decision-making and prioritization of initiatives in cancer care. The dashboard is supposed to be a living document. It can be updated when newer data becomes available. It can also be extended to additional areas and indicators that become relevant based on developments in Algeria.

Contents

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- Prof. Adda Bounedjar, Head of the Medical Oncology Department, Anti-Cancer Center, Blida and University of Blida
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- Prof. Amar Tebaibia, Head of Internal Medicine, El Biar Hospital, University of Algiers, Algeria, President of the Algerian Society of Obesity and Metabolic Diseases (SAOMM)
- Prof. El Hadia Mansouri, Professor of Toxicology, Faculty of Pharmacy of Algiers
- Prof. Ahmed Faraoun Sid, Professor of Radiology and Medical Imaging
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- Professor Bentabak Kamel, Head of the Oncology Surgery Department, Pierre and Marie Curie Cancer Center of Algiers
- Professor Boubnider Mohcene, Head of the Breast Surgery Department, Pierre and Marie Curie Cancer Center of Algiers

Foreword

Cancer today represents one of the greatest public health challenges worldwide. In Algeria, its incidence continues to rise steadily, affecting all segments of the population and exerting a profound impact on the health system, families, and society as a whole. As the second leading cause of death after cardiovascular diseases, cancer constitutes a major national health priority.

In response, the health authorities have initiated several structural programs aimed at improving prevention, early detection, access to care, and patient support. Fully aware of the urgency and magnitude of this challenge, Algeria has placed cancer control among the strategic priorities of its national health system.

The establishment of the National Strategy for Cancer Prevention and Control 2025–2035, led by the National Commission created by Presidential Decree on February 4, 2024, reflects this commitment. This strategy is built on an integrated, multidisciplinary, and patient-centered approach, focusing on strengthening human resources, developing infrastructure, advancing therapeutic innovation, and fostering scientific research.

This dashboard is designed to support the implementation of the national strategy. It provides an overview of the actions undertaken, highlights progress achieved and identifies the challenges that remain. As a monitoring and decision-making tool, it embodies the shared commitment of public authorities, healthcare professionals, civil society, and international partners to sustainably reduce the burden of cancer in Algeria.

Fighting cancer is, above all, a collective endeavor. It is a shared responsibility and a national duty of solidarity. We hope that this document will help strengthen mobilization at all levels and ensure that every patient across the country benefits from equitable, accessible, and high-quality care.

Professor Adda BOUNEDJAR

Head of the Medical Oncology Department
Anti-Cancer Center, Blida and University of Blida, Algeria
President of the National Committee for the Prevention and Against Cancer (CNPLCC)

Dashboard overview for Algeria

	Status in relation to recommended level, if available. Comment.	
Governance		
National cancer plan		The National Strategy for Prevention and Fight against Cancer 2025-2035 will be published in the near future. A national cancer plan was in place for 2015-2019.
Disease burden		
New cases (incidence)		The number of new cancer cases has increased over time.
Deaths (mortality)		The number of new cancer deaths has increased over time.
5-year survival rates		
Economic burden		
Health care exp % GDP		The public health care expenditure equals 1.7% of GDP, which is lower than the informal WHO target of 5%.
Productivity loss		The cost of premature mortality has stayed at a similar level between 2010 and 2019.
Prevention		
Tobacco consumption		The level of tobacco taxation as share of retail price (44%) is below the WHO best practice of 75%.
Overweight and obesity		The percentages of overweight women and men have increased over time.
HPV vaccination		An HPV vaccination program is under development.
Early detection		
Breast cancer screening		Breast cancer screening is available, but no population-based organization with personal invitations, as would be more in line with WHO recommendations.
Cervical cancer screening		Cervical cancer screening is available, but no population-based organization with personal invitations. The WHO's aim for year 2030 is for 70% of women to have undergone cervical cancer screening by age 35 and again by age 45.
Colorectal cancer screening		
Prostate cancer screening		
Diagnosis and treatment		
Diagnostic imaging equipment		
Biomarker testing		
Access novel cancer medicines		
Radiation therapy equipment		The number of radiation therapy equipment (57 ERBT units) does not yet reach the IAEA benchmark of 84 MV units necessary to support all cancer patients in Algeria.
Cancer care facilities		
Workforce		
Survivorship		
Palliative care services		

Explanation: Above recommended level by international bodies, e.g. the WHO. Close to level recommended by international bodies, e.g. the WHO. Below level recommended by international bodies, e.g. the WHO. No data or not applicable

High-level recommendations

Disease burden

- ✓ Continue to develop the National Cancer Registry to cover the entire population. Strive to include mortality and survival data to assess the quality of care and guide policy decisions.

Funding

- ✓ To meet the informal WHO target of public health expenditure of 5% of GDP, the Algerian government would need to increase the health care budget.

Prevention

- ✓ Increase tobacco taxes to align with WHO recommendations, enforce smoking bans, and intensify anti-smoking educational campaigns, especially for young men.
- ✓ To fight obesity, promote physical activity and healthy eating, consider implementing taxes on sugary drinks while subsidizing healthy foods, and launch nationwide campaigns on obesity-related cancer risks.
- ✓ Assess the feasibility of an HPV vaccination program for young girls to achieve cervical cancer elimination and run awareness campaigns to ensure high vaccine uptake.

Early detection

- ✓ Consider implementing an organized cervical cancer screening program with personal invitations to participants.
- ✓ Evaluate existing pilot projects for breast and colorectal screening to decide on possible nationwide implementation. Possible future screening programs, including prostate cancer, should carefully identify target populations and select appropriate screening methods and systems for invitations.
- ✓ To improve access in rural areas, continue using mobile screening units for breast cancer and self-sampling kits and/or mobile screening units for cervical cancer.
- ✓ Implement information campaigns on the most common symptoms of cancer and the value of early detection.

Diagnosis and treatment

- ✓ Continue to invest in diagnostic imaging equipment, biomarker testing equipment, radiotherapy units, and treatment facilities. It is important that these resources are balanced to not create bottlenecks and guarantee high quality cancer care.
- ✓ Review the geographical distribution of cancer care resources in relation to the local demand by patients to ensure more equal access.
- ✓ Train and recruit health personnel to operate on all aspects of cancer care. Continuously educate health professionals to guarantee that patients receive treatment based on the most recent evidence and guidelines.
- ✓ Improve patient access to high-value cancer medicines and define their role in treatment strategies.

Survivorship

- ✓ Expand palliative care facilities and integrate them into regular treatment, ensuring various care options (inpatient, hospital support, and home care).

Background

Cancer is the second leading cause of death after cardiovascular disease in both men and women in Algeria (1). The high burden of cancer has triggered several policy initiatives in Algeria and has made advances in cancer care. Algeria is the largest African country and Algeria is since 2024 classified as an upper-middle income country under the World Bank's country income classification (2). In recent years, major efforts have been made by the public authorities to improve the care of cancer patients, including national cancer plans and funding for cancer care. In addition to the increase in the number of radiotherapy centers and the creation of a fund dedicated to patient care, a National Commission for the prevention and fight against cancer, created by virtue of a presidential decree was set up on 4 February 2024 (3). The National Commission consists of six members. Several guidelines have also been released, including Guidelines for Medical Oncology in September 2024 (4). In February 2025 it was declared that 22 sub-committees were created. The sub-committees prepared a national conference for May 2025 and has developed a National Strategy on Prevention and Fight against Cancer 2025-2035 (La Stratégie Nationale de Prévention et de la Lutte contre le Cancer 2025-2035).

Algeria's National Strategy on Prevention and Fight against Cancer

The strategy for 2025-2035 includes five strategic areas (axes) (5):

- Prevention (Prévention)
- Screening (Dépistage)
- Early diagnosis (Diagnostic précoce)
- Therapeutic management and improvement of the patient journey (Prise en charge thérapeutique, amélioration du parcours du patient)
- Research (Recherche)

Prevention as the first area is an important part as effective preventive measures can reduce the number of cancer cases and deaths by large numbers in the long term. The second area focuses on *early detection*, especially for the most prevalent cancers in Algeria, such as breast cancer, colorectal cancer and prostate cancer is a priority. Detecting cancer early using screening reduces the risk of rapid development and the spreading of cancer. The third area of the strategy is *early diagnosis*, which is crucial as it helps to increase the probability and the rate of cure. The fourth area focuses on optimizing the patient care pathway including therapeutic management, which has positive effects both for the individual patient by increased recovery rate and for the public finances by reduction in care costs. The final and fifth area is *research* in oncology, which is important to continually improve treatment of cancer patients (6, 7). One of the aims of the strategy is to reduce the number of cancer cases and thus the number of deaths.

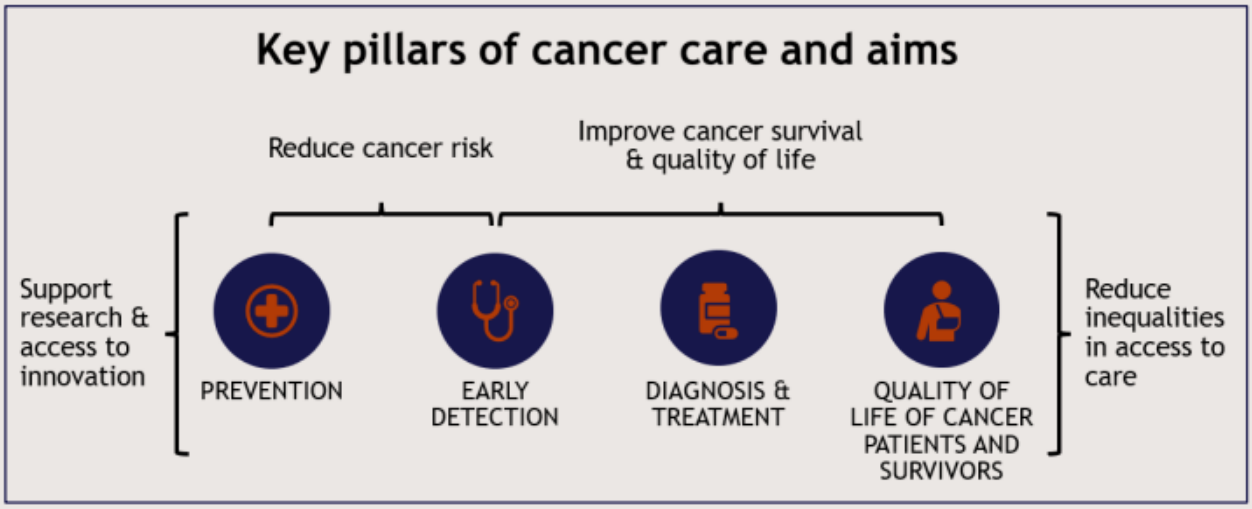
The previous national cancer plan *"Plan National Cancer. Nouvelle vision stratégique centrée sur le malade »* for 2015-2019 (8). The overall aim of the plan was the reduction of cancer-related mortality and morbidity rates, as well as improving the quality of life of patients during and after their treatment. The eight strategic areas (axes) in the plan were: Improving prevention against cancer risk factors; Improving cancer screening; Improving diagnosis; Reinvigorating anti-cancer treatment; The organization of the referral, the support, and the follow-up of patients; The development of the information and communication system; Strengthening training and research; The reinforcement of financing and care capacities.

Structure of the dashboard

The report starts with a comprehensive description of the disease burden and the economic burden of cancer. It emphasizes the role of investment in cancer care to achieve reductions in the disease burden, which will have a positive impact on both patients and the economy.

The structure of the remaining report is based on the aims and pillars of the ECBP, Europe's Beating Cancer Plan (9). The EBCP contains four pillars of cancer care – *prevention, early detection, diagnosis & treatment, survivorship* – which follow the patient pathway as shown in the figure below. There are also several simultaneous aims of cancer care. One aim is to prevent what is preventable. Around 30-50% of all cancer cases could be theoretically avoided because they are caused by modifiable risk factors (10). Another aim is to improve the survival and quality of life of patients – through early detection (such as screening programs), diagnosis and treatment (such as through access to modern diagnostic tools and treatments), and follow-up-care for survivors. Cross-cutting aims are to reduce

inequalities in access to care (e.g. of different socio-economic groups to screening) and to support research and access to innovation to be able to advance cancer care from the current status.



Choice of indicators

For each pillar of the EBCP, several indicators were selected. The indicators were supposed to relate to the action priorities of the Algerian work on cancer care.

- Prevention (3 indicators): Tobacco smoking, overweight and obesity, and human papillomavirus (HPV)
- Early detection: (4 indicators): Screening for breast, cervical, colorectal, and prostate cancer
- Diagnosis and treatment: (6 indicators): diagnostic imaging equipment, biomarker testing, novel cancer medicines, radiation therapy equipment, cancer care facilities, and workforce
- Survivorship (1 indicator): Palliative care services

For each of these indicators, this report provides:

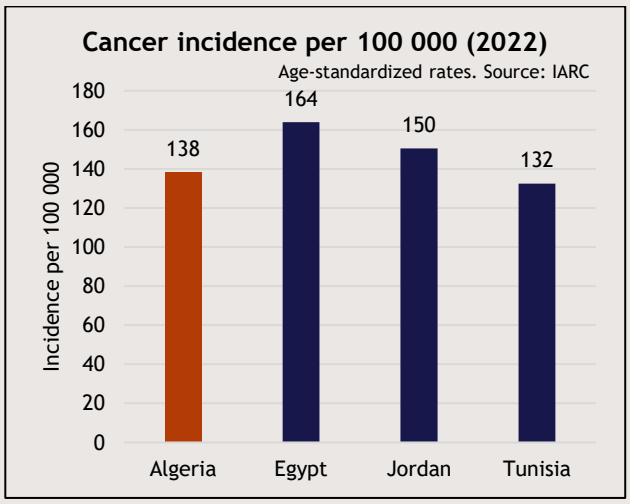
- A general background and description of why this indicator is important
- Description of the current status in Algeria
- Recommendations for improvements

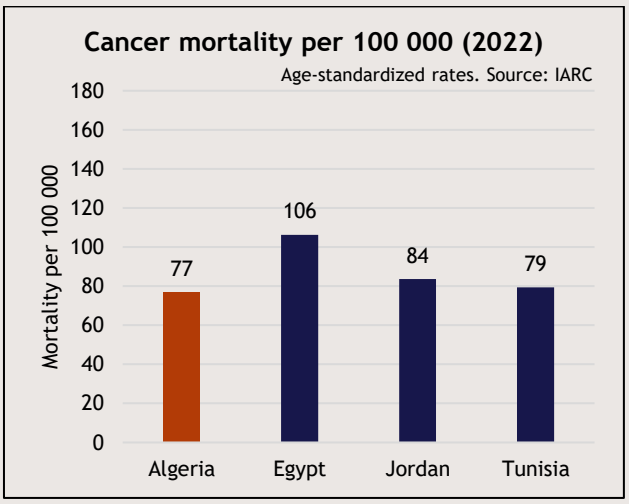
Sources of data and information used for the analysis are primarily public from international organizations and databases such as the WHO, national authorities in Algeria or published scientific articles. In some cases, information is not publicly available but has been made available by the national experts, this is indicated in the dashboard as “personal communication”.

Disease burden of cancer

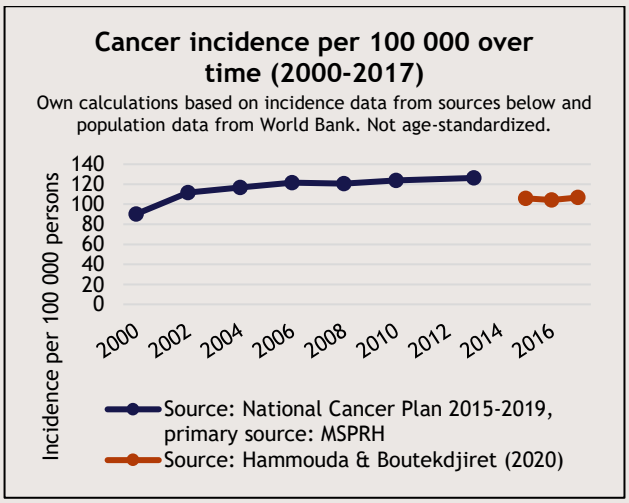
Incidence and mortality

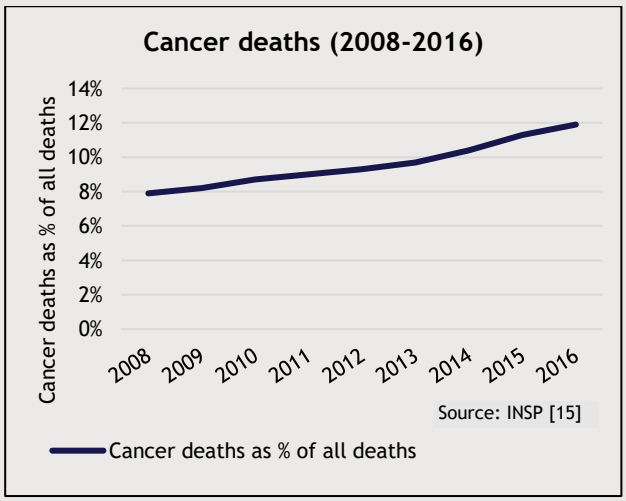
In 2022 an estimated 65 000 new cancer cases were diagnosed in Algeria and around 35 000 died from cancer (11). The Algerian cancer incidence of 138 per 100 000 persons. This is lower than in Egypt and Jordan but higher than in Tunisia (11). Cancer is 18% more common in Algerian women (150 per 100 000 women) than it is in Algerian men (127 per 100 000 men) (11). Similar results are found in a study based on the Algiers Cancer Registry (12). Compared to Egypt, Jordan and Tunisia, Algeria sees the lowest mortality rate at 77 per 100 000 persons. Despite cancer having higher incidence in women, Algerian men have a 13% higher cancer mortality rate (82 per 100 000 men) than women (73 per 100 000 women) (11), which is due to the different composition of cancer diagnoses between men and women.



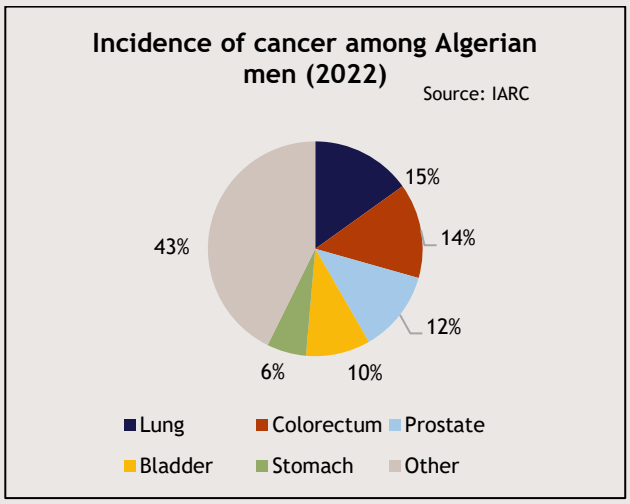


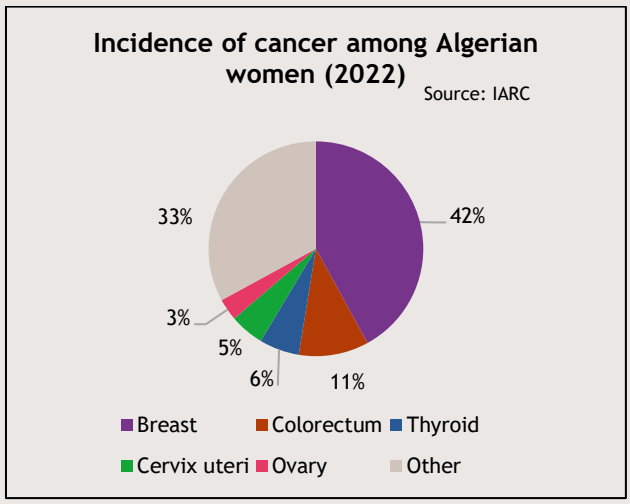
Cancer incidence expressed as the number of new cancers per 100 000 persons per year has steadily grown in the past decades (8, 13, 14), as seen in the figure below to the left. The difference between the two time series is likely due to differences in measurement. From 2000 to 2013, the incidence per 100 000 persons increased by 40% (8). The Cancer Registry Network (Réseau national des registres du cancer), consisting of the three networks Center, East and West, was established in 2014 (14). The proportion of cancer deaths among all deaths in the population, has increased from around 8% in 2008 to 12% in 2016 (15), as shown in the figure below to the right.





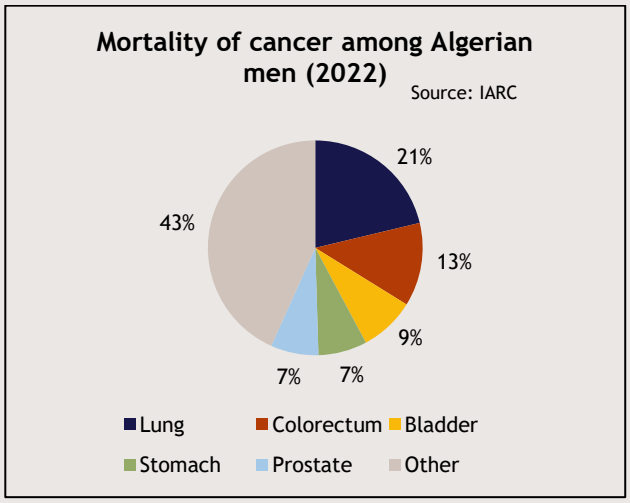
The most common cancer types in Algeria differ between men and women, as shown below. Among men, lung, colorectal, prostate and bladder cancer are the four most frequent cancer sites, each accounting for between 10 and 15% of all cancer cases (11). In women, breast cancer constitutes almost half (42%) of all cancer diagnoses, followed by colorectal cancer at 11% (11). Colorectal cancer is the only cancer diagnosis that ranks among the five most common cancer types in both men and women.

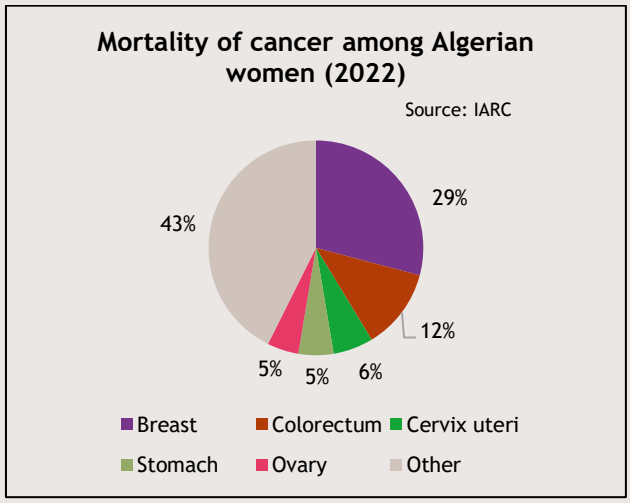




Data from the Cancer Registry Network Center (Reseau Centre des Registres du Cancer) shows similar results though colorectal cancer is the most common cancer in men, while breast cancer is the most common cancer in women (16).

The distribution of mortality by cancer type is similar to the distribution of incidence (11). Notable differences are that lung cancer accounts for 21% of all deaths attributable to cancer among men, and that breast cancer accounts for 29% of the cancer mortality among women (11).





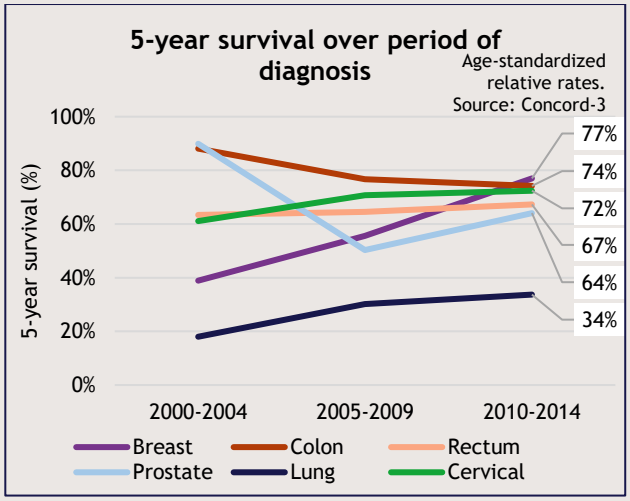
Survival

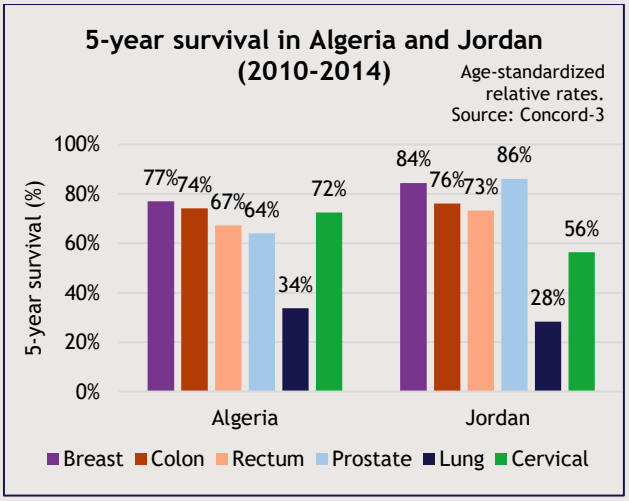
Estimates of cancer survival in Algeria were conducted in the Concord-3 study (17). The numbers refer to age-standardized relative 5-year survival rates for patients diagnosed with cancer in 2000-2004, 2005-2009, and 2010-2014, respectively. In the two figures below, survival rates are presented for the five most common cancer diagnoses (11), but colorectal cancer is presented as colon cancer and rectum cancer separately.

Over time, the survival rates for colon cancer and prostate cancer have decreased (17), while survival rates for breast, rectum, prostate and lung cancer have increased. The chance of survival has almost doubled for breast cancer (+98%) and lung cancer (+87%) patients from 2000-2004 to 2010-2014. However, the difference between breast cancer survival and lung cancer survival is stark. Of the cancer diagnoses presented in the figures below, breast cancer is the diagnosis associated with the lowest risk of death, while lung cancer is associated with the highest risk. This is

one reason for why men, who are more affected by lung cancer than women, have higher cancer mortality rates despite women, who are more affected by breast cancer, having higher cancer incidence rates.

Comparing with Jordan that is also included in the Concord-3 study (17), Algerian patients diagnosed with breast, colon, rectum and prostate cancer in 2010-2014 had a lower survival rate than Jordanian patients. The largest difference was in prostate cancer, where 22 percentage points more patients survived in Jordan than in Algeria. However, more lung and cervical cancer patients in Algeria survived than in Jordan. For cervical cancer, the difference was 16 percentage points.





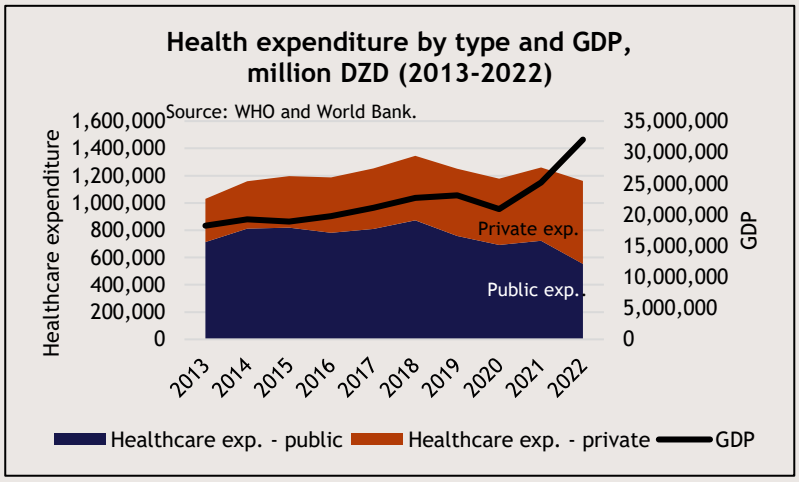
Recommendations

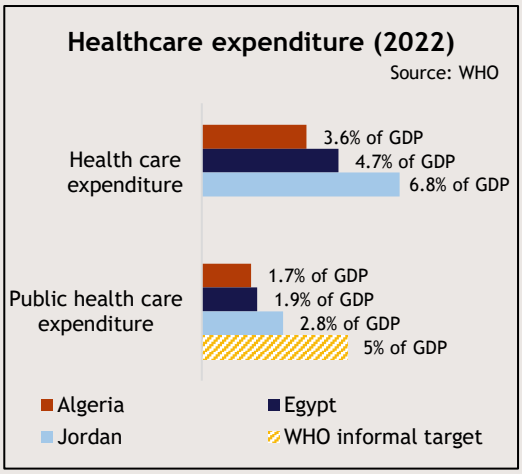
- Continue to develop the National Cancer Registry Network, consolidate the registries, improve quality of data and aim to cover 100 % of the population.
- Strive to include data on mortality and assess survival rates to get a comprehensive picture of the disease burden and to be able to monitor the development over time. Statistics on cancer incidence, mortality and survival are crucial to understanding and analyzing the development of the effectiveness and quality of cancer care services over time. Such data enables the evaluation of public health policies and necessary adjustments regarding prevention, early detection and treatment.

Economic burden of cancer

The total Algerian healthcare expenditure, private and public, amounted to DZD 1.16 billion, equivalent to 3.6% of GDP in 2022. The healthcare expenditure as share of GDP has decreased from 5.4 % in 2019 to 3.6% in 2022 (18). This decline is explained by the sharp increase of GDP in 2021 and 2022, as shown in the left figure below.

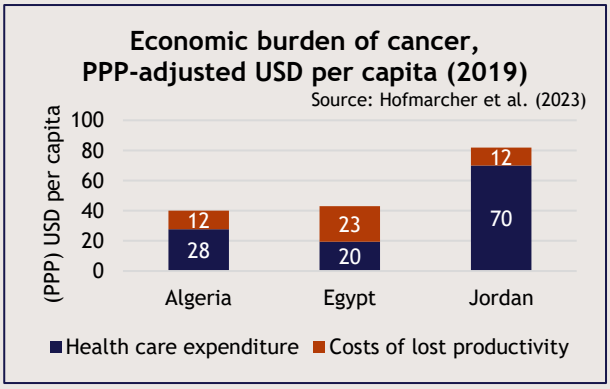
The healthcare expenditure as share of GDP in 2022 is lower in Algeria than in both Jordan and Egypt, as illustrated in the figure to the right below. For all three countries their shares are down from 2019, when it for Algeria equaled 5.4%, Egypt 4.6%, and Jordan 7.1% (18). The public healthcare expenditure, i.e. spent by the Algerian government was 1.7% of GDP in 2022 (18). Egypt was at a similar level, while the Jordanian government spent more, but all three countries spent less than the informal WHO target of 5% of GDP (19).





In the program budget of the Ministry of Health for 2023, DZD 712 billion is allocated to public health care of which DZD 60 billion to cancer medicines (20). The exact amount of total health expenditure spent specifically on cancer care is not available.

In a previous comparative study, the overall economic burden of cancer was estimated for countries in the Middle East and Africa and expressed in purchasing power parity-adjusted (PPP-adjusted) US dollars. In the left figure below, the estimated healthcare expenditure and cost of lost productivity per capita are shown for Algeria, Egypt and Jordan. Per capita, the cancer care expenditure in Algeria is USD 28, which is higher than Egypt (USD 20), but below the cancer care expenditure in Jordan (USD 70). Algeria and Jordan are at a similar level (USD12) for cost of lost productivity, which is almost half of the cost of lost productivity in Egypt (21).



The economic burden of cancer consists of:

Healthcare expenditure (direct costs): Resources of the healthcare system (medical equipment, staff, medicines, etc.) funded both by public and private sources.

Costs of lost productivity (indirect costs): Productivity losses from sickness absence, permanent incapacity/ disability, and premature mortality of working-age patients.

Recommendations

- To meet the informal WHO target of public health expenditure of 5% of GDP, the Algerian government would need to increase the health care budget. This would benefit all disease areas, including cancer care, and it could help to decrease out-of-pocket payments for patients and their families.
- Develop data collection to enable estimation of the economic burden of cancer in Algeria.

Pillar 1: Prevention

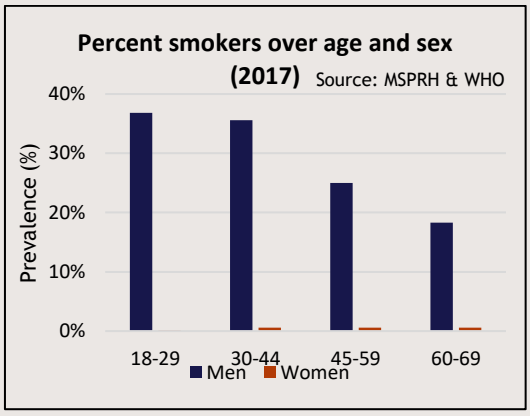
KPI: Tobacco consumption

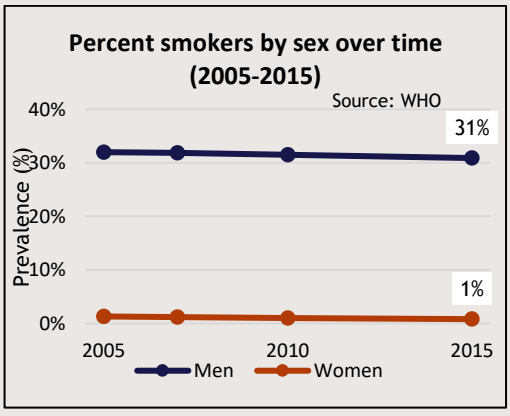
Background

- Tobacco smoking is a major risk factor for developing various cancer types (22) Smoking is linked to cancers such as blood, bladder, cervix, colon and rectum, esophagus, kidney and renal pelvis, larynx, liver, lungs, mouth and throat, pancreas, and stomach cancer (23). The primary cause behind lung cancer is cigarette smoking (24). In Algeria, lung cancer was the most diagnosed cancer type among men in 2022 and the third most common type among both sexes, with an estimated 5 040 cases. Lung cancer was also the leading cause of cancer-related deaths among men, accounting for an estimated 13% in 2022 (11).
- The World Health Organization (WHO) suggests that implementing tobacco control measures can reduce prevalence and exposure to tobacco smoking, preventing one in five annual cancer cases, consequently reducing the disease burden and mortality caused by tobacco use (25). The WHO initiative MPOWER aims to assist countries to implement effective interventions to reduce the demand for tobacco. The six measures are: Monitor tobacco use and prevention policies; Protect people from tobacco use; Offer help to quit tobacco use; Warn about the dangers of tobacco; Enforce bans on tobacco advertising, promotion and sponsorship; Raise taxes on tobacco (26). According to the WHO, the most effective and cost-effective tobacco use control policy is raising taxes on tobacco (27). The WHO best-practice taxation level is at least 75% of the retail price of tobacco (28).
- In Algeria, various tobacco control policies have been implemented. Areas such as educational and health facilities have been declared smoke free, although indoor workplaces, restaurants, and public transport still lack a complete smoking ban (29). Advertising of tobacco products is prohibited, and cigarette packs must display a health warning (29). While Algeria imposes an excise tax on tobacco, total tobacco taxation as a percent of the final retail price is 44%, which is below the recommended level of 75% by the WHO (27, 29).
- In the Algerian Cancer Plan 2015-2019, the combat against tobacco is recognized as the first of eight strategic axes (8). Many measures to decrease tobacco use are listed, including educational campaigns, raised excise taxes, and increased support for smoking cessation (8).

Current status in Algeria

- In Algeria, 32% of all men smoke tobacco, which can be compared to 0.4% of all women (30). This is reflected in the incidence of lung cancer, with it being the most common cancer diagnosis among men, but only the eleventh most common among women (11).
- The rate of tobacco smokers falls with age. Smoking is twice as common among men aged 18-29 years than among men aged 60-69 years (30).
- From 2005 to 2015, the tobacco smoking prevalence remained stable among men and women (31).





Recommendations

- Review the level of taxation on tobacco, considering the tax share of the retail price of tobacco is below the best-practice level of 75% by the WHO.
- Enforce existing smoking bans and consider including expanding smoke-free areas.
- Intensify educational campaigns on the harm of tobacco consumption, specifically targeted towards young men. Enforce the existing age limit for selling tobacco products to minors under the age of 19.

Pillar 1: Prevention

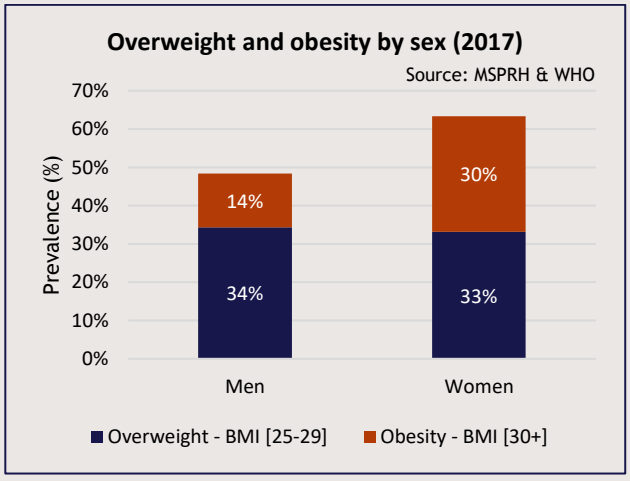
KPI: Overweight and obesity

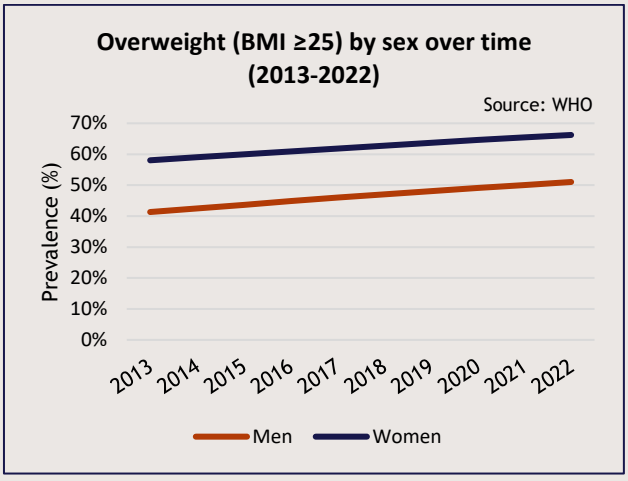
Background

- Overweight, defined as a body mass index (BMI) of ≥25, and obesity (BMI of ≥30), is a medical condition that increases the risk of health problems, including cardiovascular disease, diabetes, and certain cancers (32). Obesity and overweight have been linked to the development of 13 cancer types, including breast cancer (in post-menopausal women), uterine cancer, and ovarian cancer (33). In 2012, approximately 2% of all cancer cases in men and 7% in women are linked to obesity and overweight in the Middle East and North Africa (34).
- The Algerian National Cancer Plan 2015-2019 identifies obesity as one key risk factor for cancer (8). The fight against obesity is further described in the National Strategic Plan Against Risk Factors of Non-communicable Diseases (2015-2019). Among other things, the plan sets out to implement an information campaign on obesity and healthy eating, as well as improve the medical treatment of overweight and obese individuals (35).
- The WHO describes that obesity is primarily a societal responsibility and in the "Acceleration plan to stop obesity" is stated that governments and other stakeholders must ensure accessibility of healthy foods, make daily physical mobility available, and mobilize the healthcare system to prevent and treat obesity (36).
- Among policy interventions suggested are fiscal policies, such as implementing a sugar tax on sweetened beverages and subsidies on healthy foods; regulated harmful marketing of foods and beverages; facilitate physical activity, building capacity in the health system to deliver obesity management services; ensure public education and build awareness. From these interventions each countries select according to its context, prioritization and feasibility (36). Further WHO guidelines on fiscal policies to promote healthy diets and to change consumer behavior was published in 2024 (37).

Current status in Algeria

- The prevalence of overweight and obesity in Algeria was higher among women (63%) than among men (48%) in the ENQUÊTE study 2017 (left figure below). However, the rates among the individuals who were overweight but not obese were similar at 33-34%. The differences are found in the obese category - obesity is twice as common among women as among men (30).
- The prevalence of overweight and obesity has increased steadily among both genders over the last decade (38).
- The TAHINA study from 2007 showed that obesity is more common for individuals living in urban areas than individuals living in rural areas, but there are no large differences between different age categories (39).





Recommendations

- Implement nationwide campaigns to raise awareness about the cancer-related risks of obesity and overweight and the importance of maintaining a healthy body weight to prevent cancer. These campaigns should especially target women and residents of cities. This could also include a national nutrition plan and collection of data.
- Promote physical activity and nutrition programs in schools, at workplaces and in society as a whole. Provide physical activity counselling as part of routine primary healthcare services.
- Consider implementing an excise tax on sugar-sweetened beverages and introducing subsidies for fruits and vegetables in line with WHO recommendations.

Pillar 1: Prevention

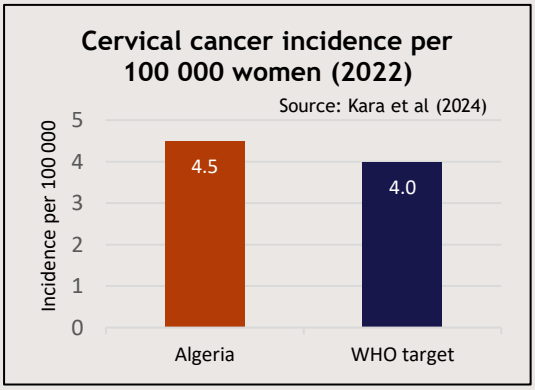
KPI: Vaccination against human papillomavirus (HPV)

Background

- HPV is a group of sexually transmitted viruses that causes around 2.2% of all cancers in women and men in Northern Africa/Western Asia (40). Premature mortality due to HPV-related cancer was estimated to cost $3.56 billion in Africa in 2019, where cervical cancer accounted for 99% of the cost (41). Vaccination against HPV has been found to be an effective and cost-effective way to prevent cervical cancer and other types of HPV-related cancers, including cancers of the vulva and vagina (42). According to the WHO, the best option is to prioritize vaccination of girls around age 9-14 before puberty and the start of sexual activity, but also vaccination of boys at the same age is preferrable (43).
- Cervical cancer is one of the most common cancer among women in Algeria (11, 44).
- A study from 2013 estimated that the risk of cervical cancer in Algeria could be reduced by 75% with the use of cervical cancer screening plus HPV vaccination (45).
- The cost per patient for cervical cancer (diagnosis, initial treatment and treatment for recurrence) was estimated to DZD 53 750, 650 000 and 431 250 respectively in Algeria in 2020 (46).
- Algeria currently has no HPV vaccination program, however one of the objectives in the National Cancer Plan 2015-2019 was to implement one (8).
- The WHO global strategy for eliminating cervical cancer has the goal to reach an incidence rate of below 4 per 100 000 women, resting on three pillars: 90% of all girls should be fully vaccinated against HPV by age 15 by 2030; 70% of women should be screened using a high-performance test by the age of 35, and again by the age of 45; 90% of women with pre-cancer should be treated and 90% of women with invasive cancer should be managed (47).

Current status in Algeria

- The incidence of cervical cancer in Algeria is slightly higher than the level the WHO elimination target of cervical cancer (44, 48, 49) (4.5 % versus 4.0 %, see figure to the right). A part of this is caused by HPV. The prevalence of HPV infection in the general population has been estimated to be 5-9% (50).
- No vaccination program against HPV currently exists in Algeria (51), and no data on the vaccination coverage rate is available.
- An intersectoral commission was set up by the Ministry of Health in 2025, among its missions the development of an HPV vaccination program which will be published later. (personal communication).



- In a study conducted on Algerian university students, a majority (85%) knew of cervical cancer and about half (46%) knew about HPV. Among the students who knew of HPV, only 27% said that they were willing to take the vaccine. The main reasons for not being interested in the HPV vaccine was low perception of the risk of HPV and general anti-vaccine sentiment (52).

Recommendations

- Examine the possibility to establish an HPV vaccination program that targets young girls in accordance with the WHO recommendation.
- Consider implementing educational campaigns targeting parents and youths to raise awareness about HPV-related diseases and the safety and advantages of the HPV vaccine. This would help to ensure a sufficient vaccine uptake once the HPV vaccination program is in place, with the ambition to reach the WHO target.

Pillar 2: Early detection

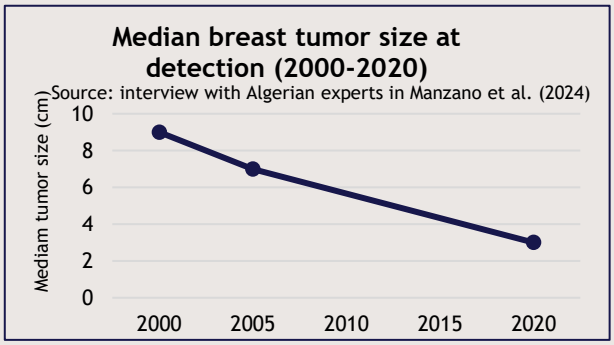
KPI: Breast cancer screening

Background

- The goal of breast cancer screening is to detect tumors early while they are still small and treatable (53). In early disease stages, survival rates are the highest and treatment costs the lowest (54).
- There are two forms of detection of breast cancer: self-initiated detection of symptoms which are then examined by a general practitioner, and organized screening programs using mammograms (55).
- The WHO recommends breast cancer screening with mammograms for all women 50-69 years old, conditional on the country having sufficient resources for diagnosis and treatment (56). Expanding the age groups to women ages 40-49 and 70-74 is only recommended conditional on sufficient resources and having a well-organized healthcare system. Overall, the WHO stresses the importance of having a population-based screening program with personal invitations, rather than opportunistic screening programs with low outreach (56).
- In Algeria, women aged 40-70 can be screened for breast cancer, but there is no population-based organization with personal invitations (51, 57, 58). The screening test methods recommended are mammography and clinical breast examination (personal communication). The National Cancer Plan 2015-2019 included measures to improve and validate the quality of breast cancer screening, training of medical staff, and identification and recruitment of women at high risk of breast cancer (8).
- Breast cancer accounts for 42% of all cancer cases among Algerian women, and 29% of all deaths (11). Among the 28 countries in the WHO Northern Africa and Central and Western Asia Hub, Algeria is estimated to suffer the 2nd highest incidence and 3rd highest mortality of breast cancer (11). Generally, the average age of breast cancer diagnosis in Algeria is lower compared to the global average (51).

Current status in Algeria

- Breast cancer centers are available nationwide as well as mammography and ultrasound equipment according to Algerian experts interviewed in Manzano et al. (2024). Median tumor size at detection has decreased from 9 to 3 centimeters between 2000 and 2020 (55), see figure.



- However, the same experts noted that screening rates are low, and that opportunistic screening is mainly offered in urban areas and attracts women from higher socio-economic standing. Experts noted that mobile teams are necessary to reach women in rural areas (55).
- Algeria together with Kenya and Nigeria are the only African countries to score above 60 percent in the WHO breast cancer control capacity assessment. Breast cancer screening coverage in Algeria increased from 28 to 42 percent between 2019 and 2023. (59)
- There are awareness campaigns calling on women, to undergo breast cancer screening. Campaigns are present in the media, on billboards in public places, and on posters in waiting rooms in health facilities. Campaigns run all around the year, but intensify in October, the breast cancer awareness month (51).
- Barriers to breast cancer screening mentioned by Algerian experts (55) are: a lack of culture of prevention due to social stigma and social consequences of having breast cancer. Some challenges are especially relevant in rural areas. Moreover, there is a lack of training in primary care workers, resulting in some tumors being misclassified as benign. Also, there is low health literacy where women do not know which symptoms to look for.

Recommendations

- Evaluate existing pilot projects for organized breast cancer screening to decide on nation-wide implementation of an organized screening program with personal invitations to all women, in line with the WHO recommendation. In parallel with the development of screening, ensure healthcare providers have sufficient capacity to treat all.
- Continue the awareness campaigns for breast cancer, emphasizing the importance of screening in reducing mortality and explaining the resources available to women. Make efforts to target these campaigns to rural areas, where lack of knowledge and stigma are especially sensitive issues.
- Continue using mobile breast screening units to improve access in rural areas.

Pillar 2: Early detection

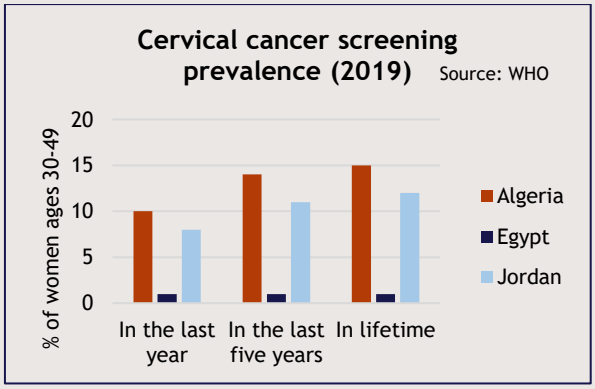
KPI: Cervical cancer screening

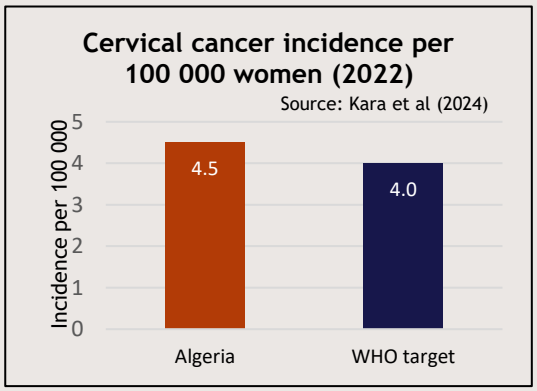
Background

- The aim of cervical cancer screening is to detect cancer before symptoms or in its pre-stages. In early stages, survival rates are the highest and treatment costs the lowest (60, 61). For many decades, the standard screening method has been a Pap smear test, but in recent years an HPV test has emerged as an alternative (62).
- The WHO has a 2030 aim for 70% percent of women in each country to have undergone cervical cancer screening by age 35, and again by age 45 (47). Furthermore, the WHO recommends screening of all women ages 30 and over to be screened with an HPV test or a test of equivalent quality (47).
- In Algeria, women ages 25-65 are screened for cervical cancer every five years using cervical cytology test, also known as pap smears (51). The first test is taken in the first year of marriage, followed by a second a year later before following the ordinary five-year intervals (51). The program does not include a personal invitation to each woman, rather it is opportunistically organized with invitations in connection with healthcare visits for other purposes (63)The pap smear test is used (personal communication). However, since 2015, HPV DNA tests are also available (51).

Current status in Algeria

- In a 2021 report, Algerian experts noted that the current system for cervical cancer screening is overall well-functioning (63).
- As shown in the figure below, the WHO has estimated the percentage of Algerian women aged 30-49 who have undergone cervical cancer screening in the last year to be 10%, and in their lifetime to be 15% (64). This is higher than the estimated cervical cancer screening rate in both Egypt and Jordan for all reported time periods.
- In a survey of Algerian university students, 27% noted that they were aware of cervical cancer screening. Among these students, 40% knew that the screening method was a cervical cytology smear (52). In a 2017 survey, the knowledge of cervical cancer screening was higher: among women aged 25 and above, 51% were aware of cervical cancer screening. In the same pool of women, 25% had screened for cervical cancer at some point in their lives The primary reason for not having had a pap smear test was lack of knowledge (42%), neglect (35%), fear (12%) and shame (11%) (65).
- The lifetime screening rate of 25% in the 2017 survey is higher than the lifetime screening rate of 15% estimated by the WHO. This may be due to differences in methodology or sample. Both figures indicate that Algeria does not reach the WHO target of 70% of all women having undergone cervical cancer screening by age 30.
- The incidence of cervical cancer in Algeria is slightly higher than the level the WHO has set out as the elimination target of cervical cancer (4.5% versus 4.0%, see figure below) (44, 48, 49).





Recommendations

- Consider switching to an organized cervical cancer screening system, where each woman receives an invitation, to increase the screening rate closer to the WHO target and combat social disparities.
- Explore the possibility of introducing HPV self-sampling kits and/or mobile units to reach and improve participation among women in rural areas.
- Consider implementing information campaigns, especially to young and otherwise socioeconomic weak groups of women, to enhance knowledge of the advantages of cervical cancer screening and reduce stigma.

Pillar 2: Early detection

KPI: Colorectal cancer screening

Background

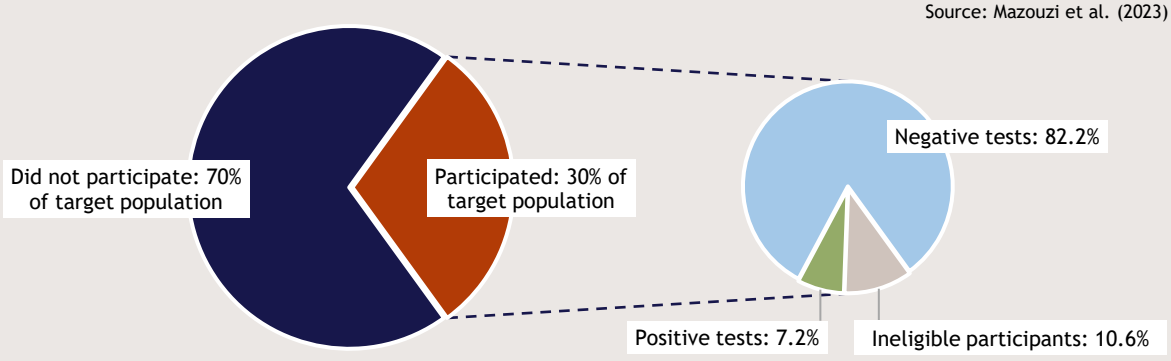
- Colorectal cancer (CRC) is to a large extent curable if diagnosed early and if appropriate treatment is provided (66). Treatment costs are also lowest in early stages of the disease (61, 67). There are multiple CRC screening methods, including stool-based tests (fecal occult blood test, FOBT; fecal immunochemical test, FIT; multitarget stool DNA test), blood-based tests, and imaging-based tests (colonoscopy, computed tomography colonography, colon capsule, flexible sigmoidoscopy) (68).
- WHO has no explicit recommendation for CRC. Screening for CRC is recommended in the USA, EU, the UK, six Latin American countries, Australia, Japan, Taiwan and Korea (68). In Africa and the Eastern Mediterranean region, implemented organized CRC screening is very rare (68). In the countries with organized screening the most common recommended starting age of screening is 50 years, and the most common screening method is FOBT or FIT testing every two years (68).
- CRC is one of the most frequent cancer diagnoses among both men and women in Algeria, accounting for 14% of all male cancer cases and 11% of all female cancer cases (11). CRC is also the second leading cause of death of cancer in both men and women (11). Of the 28 countries in the WHO Northern Africa, Central and Western Asia hub, Algeria is the fifth highest in both incidence and mortality rate of CRC (11).

Current status in Algeria

- Algeria currently lacks a nationwide organized CRC screening program (69).
- In 2017, there were pilot studies of CRC screening in three wilayas: Béjaia, Annaba and Batna (51). In the wilaya of Béjaia, adults aged 50-74 years were screened with immunochemical FOBT over a period of 26 months. Individuals were recruited by local primary care units who also provided kits for home fecal collection (70, 71).
- Of the 10,000 individuals in the target population, 30% went to get screened for CRC, as depicted in the figure below. Among the screening participants, 7.2% tested positive, indicating possible CRC. After subsequent diagnostic procedures, 17 individuals received a CRC diagnosis, which corresponds to 7.8% of the FOBT-positive individuals, or 0.6% of all participants (70).
- Challenges observed in the CRC screening pilot that lowered the participation rate include cultural taboo and stigma surrounding cancer, fear related to the screening outcome, not being worried about one's health, and that there was no personal invitation to screening, only information campaigns (70).

CRC screening pilot program results (2017-2019)

Source: Mazouzi et al. (2023)



Recommendations

- Evaluate existing pilot projects for colorectal screening to decide if nation-wide implementation is suitable. Future CRC screening should carefully identify target populations and attempt to address the challenges identified in the pilot studies.
- Consider establishing informational campaigns on colorectal cancer, symptoms to look out for, and the value of early detection. This is a possible way to increase health literacy and improve the rate of cancers discovered in early stages.

Pillar 2: Early detection

KPI: Prostate cancer screening

Background

- The aim of prostate cancer screening is to discover prostate cancer in its early stages. Early diagnosis increases survival rates and has lower the treatment costs (61, 72).
- The main prostate screening method is the prostate-specific antigen (PSA) test (73, 74). Since the implementation of this screening regimen, there has been a shift towards diagnosis at earlier stages and lower prostate cancer mortality (74). However, PSA testing mainly discovers low-grade prostate cancer which generally is not harmful for patients, which implies that sole PSA testing can lead to overdiagnosis and overtreatment (74-78). The 2015-2019 National Cancer Plan notes that prostate screening with PSA tests typically is inefficient (8).
- The WHO has no general recommendation for prostate cancer screening. The Council of the European Union recommends stepwise implementation, integrated with research, of organized screening using PSA tests and a follow-up MRI scan (79).
- Among Algerian men, prostate cancer is the third most common cancer diagnosis and the fifth most common cause of death among all cancer diagnoses (11). Among the 28 countries in the WHO Northern Africa, Central and Western Asia hub, Algeria sees the 12th highest incidence rate and the 17th highest mortality rate of prostate cancer (11).

Current status in Algeria

- Algeria does not currently offer organized prostate cancer screening, however it is possible for men aged 50-70 years old to undergo a rectal examination and a PSA test (51). No information on the extent of use of these examinations and tests is available.

Recommendations

- Consider informational campaigns to raise awareness on symptoms of prostate cancer and the benefits of early detection. This is a possibility for men to learn what symptoms to be vigilant of, and to break some of the stigma surrounding cancer diagnoses.
- If prostate cancer screening is implemented, the target population and used method should be carefully considered to ensure effective and cost-effective use of resources.

Pillar 3: Diagnosis & treatment

KPI: Diagnostic imaging equipment

Background

- Imaging equipment such as computed tomography scanners (CT), magnetic resonance imaging units (MRI), and positron emission tomography scanners (PET) are required to support physicians in all areas in the care pathway including diagnosis, treatment, and follow-up.
- The diagnostic process for cancer differs between cancer types. Breast cancer requires mammography machines, while lung cancer relies on CT, MRI, and PET scanners. Reducing the time between diagnosis and treatment start increases the chances of survival for many cancer types (80). For instance, breast cancer patients with a long delay of ≥61 days between diagnosis and start of neoadjuvant systemic therapy have a 28% increased risk of subsequent mortality compared to patients with a short delay of 0–30 days (81).
- The investment costs for scanners are high and thus their availability is generally restricted. General guidelines or benchmarks regarding the ideal number of scanners per inhabitant do not exist. A shortage of diagnostic imaging equipment may lead to access problems in terms of geographic proximity and/or waiting times for diagnosis (63). Improving access to scanners is not just a question of access to equipment but it is also a question of availability of trained personnel to operate the equipment.
- The Algerian Cancer Plan 2015-2019 included aims to improve the quality and quantity of imaging equipment, but also the training of associated medical professionals, improving the safety and developing necessary IT infrastructure (8).

Current status in Algeria

- Algeria has approximately the same CT scanner density as Jordan and the Northern Africa and Western Asia region at large, but more than Egypt, see table below. However, both Jordan and the Northern Africa and Western Asia region have a higher MRI density than Algeria. The PET scanner density appears to be similar in all countries of comparison (82).
- The figures presented in the table below should be viewed with caution, as data for specific countries is only publicly available in ranges. Further, the data itself is based on research and voluntary contributions of collaborators, indicating the data likely represents a lower bound of the diagnostic imaging unit density (82).
- According to data from the Algerian Ministry of Health and COMENA (Le Commissariat à l'Energie Atomique Algérien) Algeria has 700 scanners, 250 IRM (Independent Radiation Monitors), 300 mammography machines, 2 300 ultrasound machines, 3 000 regular radiology machines, 42 SPECT GAMMA, 16 SPECT CT, 8 PET SCAN and 2 PET MRI (personal communication).
- According to Algerian experts interviewed in Manzano et al. (2024), there are disparities in access to diagnostic services for breast cancer patients between the private and public sector. The waiting time for an MRI and bone scans in the private sector is a matter of days, while the corresponding waiting time in the public sector can be up to two months. Further, the experts noted that there are differences between geographical regions, where some have a lower density of diagnostic equipment such as MRI scanners (55).

Country / Region	**Diagnostic imaging units per 1 million population (most recent data)**			**Source**
	CT	**MRI**	**PET**	
Algeria	10-15	2.5-5	0-1	IAEA IMAGINE database (82)
Egypt	5-10	0-2.5	0-1	
Jordan	10-15	5-7.5	0-1	

Recommendations

- Continue to invest in new diagnostic imaging equipment to reduce access issues and waiting times for patients. Review the geographic distribution of the equipment in relation to the local demand by patients to ensure more equal access.
- Ensure that there is enough medical staff (imaging physicians, radiology technicians and nurses) who can operate the new machines.

Pillar 3: Diagnosis & treatment

KPI: Biomarker testing

Background

- The implementation of precision medicine in oncology has increased significantly in the last decade due to advancements in biomarker testing technologies and approvals of targeted cancer treatments (83).
- Biomarker testing is part of the diagnostic process of cancer care and an integral part of precision medicine. It aims to identify the molecular characteristics of the tumor, which helps to select appropriate treatments.
- Testing with single biomarkers has been done for decades in certain cancer types (e.g., breast cancer). With increasing knowledge of molecular targets, single-biomarker testing has become impractical in some cancer types (e.g., lung cancer). Multi-biomarker testing, specifically with next-generation sequencing (NGS) technology, tests for several biomarkers in parallel rather than sequentially. In Europe and the USA, NGS testing is increasingly becoming standard of care in several cancer types, thereby replacing or complementing single-biomarker testing (84).
- The European Society for Medical Oncology ESMO issued its first recommendation to use NGS in the treatment of advanced non-small cell lung cancer (NSCLC), prostate cancer, ovarian cancer, and bile duct cancer in 2020 (85).
- The National Cancer Plan 2015-2019 set out to standardize biomarker testing across the country and set up laboratories in each health region (8).

Current status in Algeria

- Among immunohistochemistry (IHC) and PCR tests designated for main cancer types such as breast cancer, non-small cell lung cancer, and colorectal cancer, a vast majority are performed in Algerian healthcare. The majority of tests are provided free of charge within public hospitals in collaboration with pharmaceutical companies (personal communication).
- Biomarker tests PCR and NGS are available in some public hospitals and private hospitals in Algeria.
- Next generation sequencing (NGS) testing infrastructure has recently been installed at two locations: University Hospital Blida and University Hospital Mustapha. These are public hospitals and thus NGS testing will be free of charge for the patient (personal communication).

Recommendations

- In tandem with the development of other parts of Algerian cancer care, expand the infrastructure necessary for biomarker testing (IHC, PCR, and NGS testing) to enable the administration of personalized treatment for more patients.

Pillar 3: Diagnosis & treatment

KPI: Access to novel cancer medicines

Background

- Cancer medicines are one of three main treatment modalities, besides surgery and radiation therapy, used in the treatment of cancer. The number of new cancer medicines has increased globally over the last decade, with for example around 100 new cancer medicines approved by the European Medicines Agency (EMA) (86). While the increase in available cancer medicines offers new opportunities for cancer patients, it also poses a challenge for the healthcare system due to increasing costs for medicines. Limited resources require evidence-based allocation and medical staff must be educated in the administration of the new medicines.
- For cancer medicine to be available to a patient, it must first be approved for use, followed by pricing and reimbursement, and finally implemented in clinical practice to reach the patient. In Algeria, regulatory approval and pricing is handled by the National Agency for Pharmaceutical products (ANPP) (87). The reimbursement process for medicines of community pharmacies is managed by the public insurance funds of the Ministry of Labor, Employment and Social Security. Medicines dispensed at hospitals are included in the PCH commercial list by the Ministry of Health and purchased by the Central Hospital Pharmacy (PCH) (63).
- The Algerian 2015-2019 Cancer Plan allocated a specific budget to cancer medicines (8).

Current status in Algeria

- In 2023, almost half (47%) of the budget of PCH was dedicated to cancer medicines (88).
- There is a delay between the regulatory approval by ANPP and inclusion in the commercial list of cancer medicines in Algeria, illustrated in the table below. Of the 60 new cancer medicines (with a new molecule) approved by EMA between 2015 and 2020, only 16 (27%) had been approved in Algeria by the ANPP according to the National nomenclature of pharmaceutical products as of March 2025. All medicines with regulatory approval also get reimbursed either by adding them to the PCH commercial list (medicines dispensed at hospitals), or through the public insurance funds (medicines of community pharmacies).
- Of the 60 new medicines approved by EMA between 2015 and 2020 the pharmaceutical companies have applied for registration in Algeria for 31 of them. Of these, 16 new medicines are approved by ANPP as of March 2025, while 15 are applied for and under way for registration by ANPP. Of the 11 new medicines approved by EMA in 2015 5 (45%) had been approved by ANNP in Algeria as of March 2025, while of the 17 (7+10) new medicines approved by EMA in 2019 and 2020 1 (10%) had been approved by ANNP March 2025, see table. Similar patterns of delay for Algeria is described in other studies (89, 90).

Approval rate of cancer medicines in Algeria for EMA approval years 2015-2020

EMA approval year	Number of new cancer medicines approved by EMA	Molecule name	Number (%) of these approved and reimbursed in Algeria as of March 2025 (ANPP)
2015	11	ceritinib, lenvatinib, nivolumab, pembrolizumab, dinutuximab, sonidegib, panobinostat, carfilzomib, cobimetinib, blinatumomab, talimogene laherparepvec	5 (45%)
2016	10	pegaspargase, osimertini, necitumumab, trifluridine / tipiracil, elotuzumab, daratumumab, olaratumab, palbociclib, ixazomib, venetoclax	6 (60%)
2017	11	alectinib, dinutuximab beta, inotuzumab ozogamicin, ribociclib, tivozanib, avelumab, midostaurin, atezolizumab, lutetium (177Lu) oxodotreotide, padeliporfin, niraparib	3 (27%)
2018	11	gemtuzumab ozogamicin, rucaparib, tisagenlecleucel, axicabtagene ciloleucel, neratinib, encorafenib, binimetinib, durvalumab, abemaciclib, brigatinib, mogamulizumab	1 (9%)
2019	7	apalutamide, dacomitinib, lorlatinib, talazoparib, cemiplimab, larotrectinib, gilteritinib,	0 (0%)
2020	10	polatuzumab vedotin, darolutamide, isatuximab, glasdegib, alpelisib, entrectinib, belantamab mafodotin, avapritinib, acalabrutinib, brexucabtagene autoleucel	1 (10%)
Total	**60**		**16 (27%)**

Recommendations

- Increase the availability to patients and decrease the delay of novel cancer medicines with a focus on cost-effective medicines with high clinical value to patients. Novel cancer medicine can further improve survival rates and overall cancer care.
- Outline what role novel cancer medicines have in cancer treatment and set out targets to improve patient access.
- Maintain sustainable access to cancer care medicines, thus continuing the advancements made hitherto.
- Encourage clinical trials in oncology to increase patient access to new therapies.

Pillar 3: Diagnosis & treatment

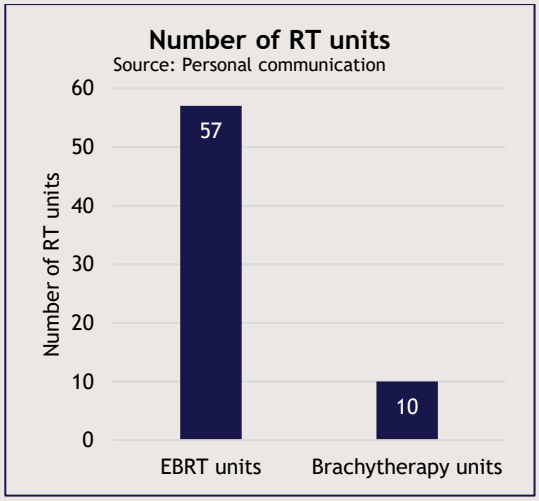
KPI: Radiation therapy equipment

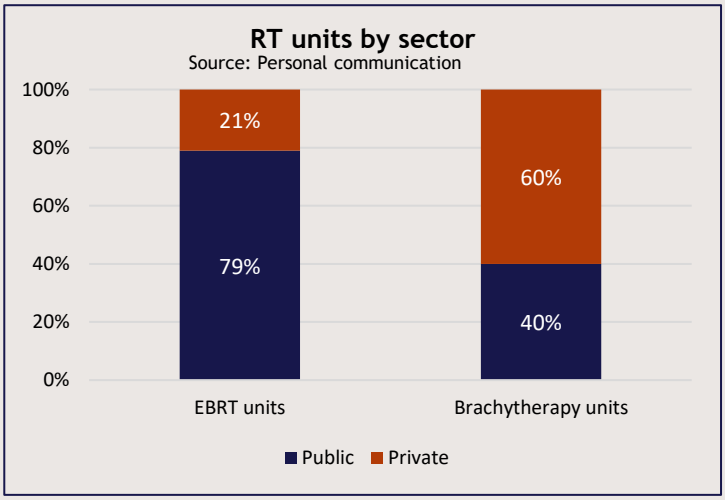
Background

- Radiation therapy (RT) plays a crucial role in the treatment of common cancer types. Around 50 to 70% of all cancer patients require radiation therapy during their treatment (91). The effectiveness of radiation therapy in targeting and eliminating tumors significantly influences patients' survival rates and quality of life.
- The IAEA guidelines recommend one radiotherapy machine per 500 new cancer cases per year (92).
- Improving access to healthcare services faces a significant challenge due to the shortage of trained personnel, especially in fields requiring technical expertise, such as high-quality radiation therapy. Therefore, it is essential to expand the healthcare workforce and acquire new equipment strategically to ensure that radiotherapy is accessible to all patients in need (93).
- The Algerian Cancer Plan 2015-2019 aim to improve quality, safety and waiting times of radiotherapy care (8).

Current status in Algeria

- As of December 2024, there were a total of 67 radiation therapy units across the military, private, and public sectors. Most (57, or 85%) of these RT units were External Beam Radiation Therapy (EBRT) units. The remaining 10 were brachytherapy units (personal communication).
- EBRT units encompasses both MV units (including Linacs) and orthovoltage units, with 57 EBRT units in Algeria.
- The majority (79%) of all EBRT units exist within the public sector. On the contrary, the majority (60%) of all brachytherapy units exists within the private sector (personal communication). Experts mention that there are challenges with maintenance contracts (personal communication).





- Based on the number of new cancer cases in Algeria 2022, calculations show that 98 radiotherapy machines would be needed in Algeria to meet the recommended target of IAEA (personal). This is in line with the projected needs in a previous study (94).
- Another study forecasting global Linac needs categorizes Algeria in group 2 of the LSI, Linear Accelerator Shortage Index, indicating a high need for additional Linacs until the year 2045. The estimated number of new Linacs needed to fulfill the radiotherapy needs in 2024 is 103. LSI is a relative measure based on cancer incidence, country specific treatment needs and the country-specific availability of radiotherapy centers (95).

Recommendations

- Expand the number of radiotherapy machines to be able to support all cancer patients in need of radiation therapy services. This should be done in synchronization with the training and recruitment of health personnel qualified to operate the equipment.
- Ensure that the number of brachytherapy units within the public sector is sufficient to support patients who do not have access to private healthcare.
- Aim at a geographical distribution of radiotherapy machines to enables equal treatment of patients in all parts of Algeria.
- Ensure that preventive maintenance is provided at required intervals.

Pillar 3: Diagnosis & treatment

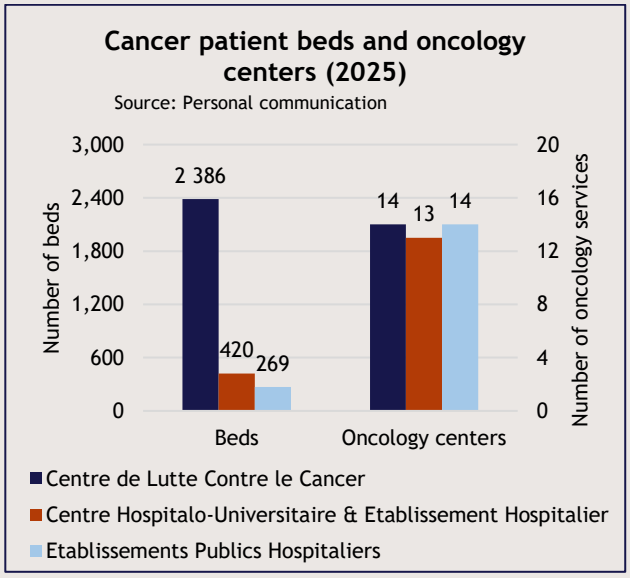
KPI: Cancer care facilities

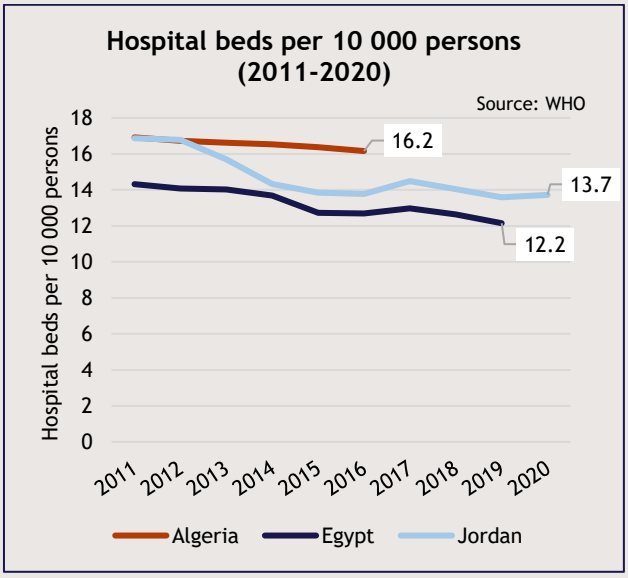
Background

- Cancer treatment can take place in various facilities. Depending on how the healthcare system is organized, a cancer patient may receive treatment in a primary care clinic, specialized outpatient clinic, and in a hospital at different treatment phases.
- Not having sufficient capacity in cancer care facilities leads to crowding, which can delay diagnosis and impair treatment quality. It can also lead to geographical differences, where patients in underserved areas face a higher barrier to access and thus worse cancer treatment.

Current status in Algeria

- In Algeria, there are 41 oncology centers across Etablissements Hospitaliers Specialisés CLCC (Centres de lutte contre le cancer), Services d'Oncologie Medicale au niveau des CHU et EH (Centre Hospitalo-Universitaire et Etablissement Hospitalier), and Services d'Oncologie Médicale au niveau des EPH (Etablissements Publics Hospitaliers). The centers are equally distributed across the three groups (personal communication).
- The number of hospital beds dedicated to cancer patients at said oncology centers amount to 3 075. The largest part of these 2 386 hospital beds (78%) is located in CLCC. Hospital beds for medical oncology in other hospital establishments are: CHU, with 420 (14%) hospital beds, and EPH with 269 (9%) hospital beds. (, personal communication, data from the Ministry of Health). For hematology there are 765 beds (personal communication).
- From 2011 to 2016, the number of hospital beds (per 10 000 persons) in the entire Algerian healthcare system has decreased by 8%. However, both Egypt (16%) and Jordan (18%) saw larger decreases during the same period. In absolute levels, the hospital bed density in 2016 was higher in Algeria (16.2) than in both Egypt (12.7) and Jordan (13.8) (96).





Recommendations

- As the population and number of cancer patients grow, ensure that the number of hospital beds available to patients increases accordingly. Simultaneously monitor the amount of equipment and trained health personnel available to cancer patients such that bottlenecks do not arise in any of these factors.
- Review the geographical distribution of cancer care facilities across the country and identify potential areas that are currently underserved.

Pillar 3: Diagnosis & treatment

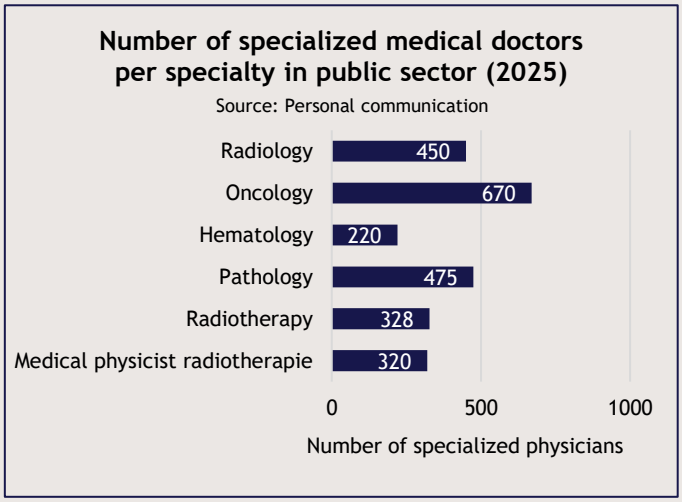
KPI: Workforce

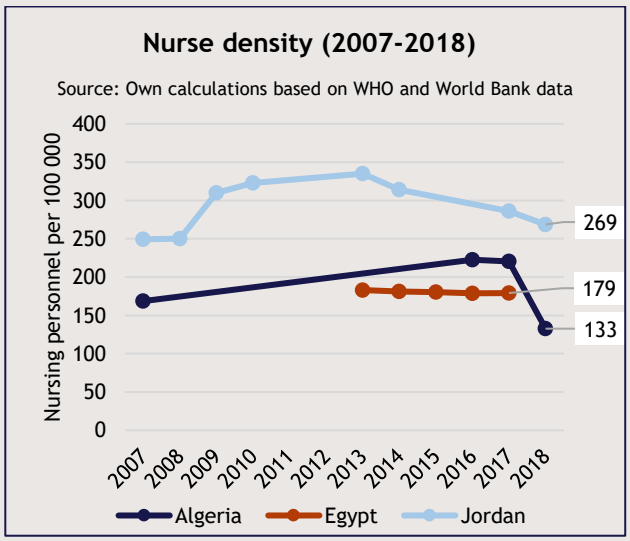
Background

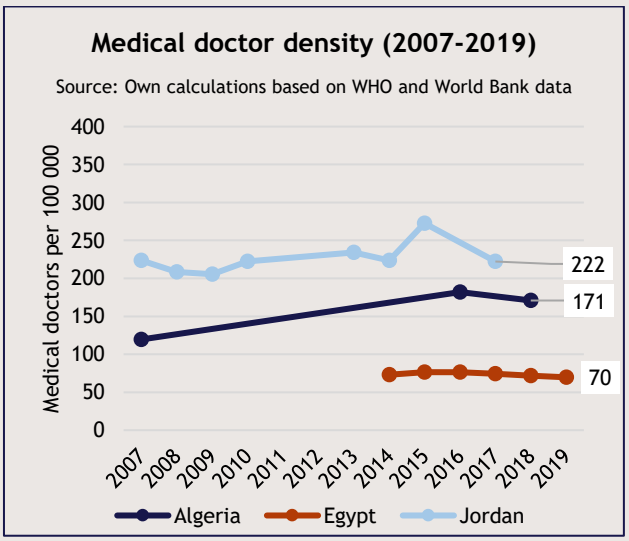
- Modern cancer care is highly specialized and requires competence from different medical fields. This includes pathologists and diagnostic radiologists for the diagnosis of cancer, and surgeons, radiologists, medical oncologists, and hematologists for the treatment. General practitioners (GPs) play a key role in facilitating early diagnosis in primary care as they refer patients with signs and symptoms to the appropriate specialist.
- The National Cancer Plan 2015-2019 places an extra emphasis on healthcare personnel within diagnostic imaging, such as radiologists (8).
- Oncology is a fast-changing field in medicine, which requires continuous in-service training to keep up to date with changes in knowledge and best practice.

Current status in Algeria

- In total, in 2025 there were 2 463 medical doctors in public sector specialized in six areas particularly important to cancer diagnosis and treatment: radiology, oncology, hematology, pathology, radiotherapy and medical physicists in radiotherapy. Moreover, there were 750 doctors in radiology in the private sector. (Ministry of Health, personal communication).
- The most common specialty of the six is oncology, while the least common is hematology.
- Since 2007, the density of nurses and medical doctors have increased in Algeria. Adjusted for population, the level of nurses and medical doctors have consistently been above the level of Egypt, but below the level of Jordan. The exception to this pattern is the density of nurses in Algeria in 2018, which at 133 per 100 000 is 40%below the reported level in 2017. The reason for this drop is unknown, but one possible explanation could be changes in measurement method or data accuracy. The number of nurses per 100 000 in 2017 in Algeria was 221 (13, 97, 98).







Recommendations

- Continue to train and recruit health personnel of all categories involved in cancer diagnosis and treatment. Ensure new research is disseminated in the workforce to guarantee that patients receive treatment based on the most recent evidence and guidelines.
- Consider evaluating the work conditions, including safety, of the existing staff to identify weaknesses and develop strategies to retain workers in Algerian cancer care.

Pillar 4: Survivorship

KPI: Palliative care services

Background

- In Algeria, the share of the population above age 65 has increased over time and now stands at 10.5% (99). The rate of individuals above age 65 in the Algerian population is 2 percentage points higher than in Egypt and 3 percentage points higher than in Jordan (100). An aging population would increase demand for palliative care (PC) services.
- Cancer is a disease that leads to a need for palliative care. For instance, in Europe cancer is the most frequent cause of need for PC among life threatening or life-limiting health conditions (101). Within oncology, PC has traditionally had a strong focus on the end-of-life-stage, but more recent definitions emphasize its relevance earlier in the disease pathway (102).
- The availability of PC services in a country is one metric to assess the capacity and potential access to PC. Another metric is the degree to which PC is integrated with the overall healthcare system (103). While WHO does not have any recommendation on PC services that is relevant for Algeria, the European Association for Palliative Care (EAPC) recommends 2 specialized PC services for every 100,000 inhabitants in Europe (101).
- The Algerian Cancer Plan 2015-2019 emphasizes that palliative care must be improved and that it should be integrated with cancer treatment from an early stage (8).

Current status in Algeria

- In Algeria, there are as of 2022 two units specialized in palliative care for cancer patients. These are localized in Blida at the Anti-Cancer Center and in Algiers at the Pierre and Marie Curie Center (51).
- The current number of palliative care beds in oncology and hematology centers are deemed insufficient in number (personal communication).
- Separate palliative care centers are not available to support hematological and oncological departments (personal communication).
- In 2021, the Minister of Health, Pr. Abderrahmane Benbouzid, announced the intention to form home care teams specialized in PC services for cancer patients (104).

Recommendations

- To improve the quality of life for cancer patients and meet the needs of an aging population, continue the aspiration to establish more palliative care facilities and to integrate them with regular cancer treatment.
- Ensure a plan for measuring survivorship trends in Algeria moving forward and assessing the impact of the strategies included in the national cancer control plan.
- Ensure that there is a variety of PC services, such as inpatient, hospital support, and home care PC services, to guarantee that patients with different cancer treatment all receive the benefits of palliative care.

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Appendix: Methodology and sources for indicators

Disease burden	
Incidence and mortality	1st graph: IARC: GLOBOCAN Cancer Today (11). Specification: Populations, Incidence, Both sexes, All cancers excl. non-melanoma skin cancer, Age groups 0-85+. Age-standardized rate. GLOBOCAN includes data from the Sétif, Tlemcen, Algiers and Batna registries from 2008-2017, projected to 2022. 2nd graph: IARC: GLOBOCAN Cancer Today (11). Specification: Populations, Mortality, Both sexes, All cancers excl. non-melanoma skin cancer, Age groups 0-85+. Age-standardized rate. 3rd graph: Incidence data (number of cases) collected from Algerian Cancer Plan National 2015-2019 (8), Figure 1, which notes its source as MSPRH, and from Hammouda & Boutekdjiret (2020) (14), Table 1. Population data (to express in terms of cases per 100,000) collected from World Bank Databank (13). Indicator: Population, total. 4th graph: Data compiled from INSP reports Causes de Décès: Rapport 2015-2016, Rapport 2014, Rapport 2013, Rapport 2011-2012, Rapport 2010, and Rapport 2009 (15). Number of cases and % of all deaths noted for ICD-10 code C00-D48 Tumeurs. Population data (to express number of cases in terms of cases per 100,000) collected from World Bank Databank (13). Indicator: Population, total. 5th graph: IARC: GLOBOCAN Cancer Today (11). Specification: Cancer, Incidence, Males, Algeria, Age groups 0-85+. Proportions based on number of cases. 6th graph: IARC: GLOBOCAN Cancer Today (11). Specification: Cancer, Incidence, Females, Algeria, Age groups 0-85+. Proportions based on number of cases. 7th graph: IARC: GLOBOCAN Cancer Today (11). Specification: Cancer, Mortality, Males, Algeria, Age groups 0-85+. Proportions based on number of cases. 8th graph: IARC: GLOBOCAN Cancer Today (11). Specification: Cancer, Mortality, Females, Algeria, Age groups 0-85+. Proportions based on number of cases.
Survival	1st & 2nd graphs: Allemani et al. (2018) CONCORD-3 (17), Table 5. Age-standardized rates.
Economic burden	
Economic burden	1st graph: WHO: Global Health Expenditure Database (18). Specification for public and private health care expenditure: Health Expenditure Data, Financing Schemes. World Bank (105) 2nd graph: WHO: Global Health Expenditure Database (18). Specification for health care expenditure as % of GDP: Indicators, Aggregates, Current Health Expenditure (CHE) as % Gross Domestic Product (GDP). Specification for public health care expenditure: Health Expenditure Data, Financing Schemes, Government schemes and compulsory contributory health care financing schemes. 3rd graph: Hofmarcher et al. (2023) (21). Total costs collected from Figure 4, panel B. Proportion of direct and indirect costs collected from Supplemental Material Table S5.
Prevention	
Tobacco consumption	1st graph: MSPRH & WHO: Enquête nationale sur la mesure du poids des facteurs de risque des Maladies Non Transmissibles selon l'approche STEPwise de l'OMS – Principaux résultats – Algérie 2016-2017 (30). Variable: Tabac fumé, fumeurs actuels. 2nd graph: WHO: Global Health Observatory (31). Indicator: Non-age-standardized estimates of current tobacco use, tobacco smoking and cigarette smoking.
Obesity level	1st graph: MSPRH & WHO: Enquête nationale sur la mesure du poids des facteurs de risque des Maladies Non Transmissibles selon l'approche STEPwise de l'OMS – Principaux résultats – Algérie 2016-2017 (30). Variable: Surpoids [25.0-29.9], and Obésité [30.0-]. 2nd graph: WHO: Global Health Observatory (38). Indicator: Prevalence of overweight among adults, BMI >= 25 (crude estimate) (%).
HPV vaccination rate	Kara et al (2024) (44)
Early detection	
Breast cancer screening	Algerian expert group Amel Lajroud, Sabiha Bouzbid and Hayette Aouras, interviewed in IHE report 2024:6, Improving Breast Cancer Care in the Middle East and Africa, by Manzano et al., page 67 (55).
Cervical cancer screening	WHO: Global Health Observatory (64). Indicator: Prevalence of cervical cancer screening among women aged 30-49 years (%). Kara et al (2024) (44)
Colorectal cancer screening	Mazouzi et al. (2024) (70), pages 72 and 73.

Prostate cancer screening	-
Diagnosis and treatment	
Diagnostic imaging equipment	IAEA IMAGINE Database (82). Indicators: CT scanners (per 1 mil), MRI units (per 1 mil), PET scanners (per 1 mil). Data from Ministry of Health and COMENA: Personal communication.
Biomarker testing	-
Access to novel cancer medicines	Personal communication: Algerian approval dates were sourced from ANPP. Medicine inclusion criterium was: EMA approval for cancer between 1 January 2015 and 31 December 2020. EMA approval dates of novel cancer medicines were sourced from the EMA website.
Availability of radiation therapy equipment	1st and 2nd graphs: Personal communication. Calculations of radiation therapy machines needed: Personal communication.
Cancer care facilities	1st graph (services and beds): Ministry of Health 2025, personal communication. 2nd graph: WHO: Global Health Observatory (96). Indicator: Hospital beds (per 10 000 persons).
Workforce	1st graph (specialized doctors): Ministry of Health Santé 2025, personal communication. 2nd graph: Number of nurses sourced from WHO: Global Health Observatory (97). Indicator: Nursing personnel (number). Total population sourced from World Bank DataBank (13). Indicator: Population, total. 3rd graph: Number of medical doctors sourced from WHO: Global Health Observatory (98). Indicator: Medical doctors (number). Total population sourced from World Bank DataBank (13). Indicator: Population, total.
Survivorship	
Availability of palliative care services	-

Appendix: List of experts for validation of the KPIs

Governance

Prof. Adda Bounedjar, Head of the Medical Oncology Department, Anti-Cancer Center, Blida and University of Blida

Prof. Gharnaout Merzak, Professor, Head of the Pulmonology Department, Beni Messous University Hospital, Algiers and Rector of the University of Health Sciences of Algiers

Disease burden

Prof. Abderrezak Bouamra, General Director of the National Public Health Institute (INSP)

Professor Bentabak Kamel, Head of the Oncology Surgery Department, Pierre and Marie Curie Cancer Center of Algiers

Professor Boubnider Mohcene, Head of the Breast Surgery Department, Pierre and Marie Curie Cancer Center of Algiers

Economic burden

Dr Reda Kessal, Faculty of Pharmacy of Algiers, Expert in pharmacoeconomics

Dr Yacine Hassene Daouadji, Expert in pharmacoeconomics

Prof. El Hadia Mansouri, Professor of Toxicology, Faculty of Pharmacy of Algiers

Prevention

Prof. Amar Tebaibia, Head of the Internal Medicine Department, El Biar Hospital, Algiers University, Algeria, President of Algerian Society of Obesity and Metabolic Diseases (SAOMM)

Early detection

Prof. Mohammed Oukkal, Head of the Medical Oncology Department at the clinic Amine Zirout, Beau-fraisier, CHU Béni-Messous, Algiers

Diagnostic imaging equipment

Prof. Ahmed Faraoun Sid, Professor of Radiology and Medical Imaging

Biomarker testing

Prof. Wahiba Ouahioune, Head of the Pathological Anatomy and Cytology Department at the University Hospital Center (CHU), Blida

Professor Djidjik Reda, Head of the Immunology Department, Beni Messous University Hospital Center, Algiers and Dean of the Faculty of Pharmacy of Algiers

Access to novel cancer medicines

Dr Kessal Reda, Faculty of pharmacy of Algiers, Expert in pharmacoeconomics

Prof. El Hadia Mansouri, Professor of Toxicology, Faculty of Pharmacy of Algiers

Radiation therapy equipment

Prof. Khadidja Boudaoud, Professor of Radiation Oncology, Setif 1 University, Algeria Head of Radiation Oncology Department, Setif CLCC, President of the Algerian Society for Radiation Oncology “ASRO”

Cancer care facilities

Prof. Adda Bounedjar, Head of the Medical Oncology Department, Anti-Cancer Center, Blida, and University of Blida

Workforce

Prof. Nabil Yafour, Head of the Hematology and Cellular Therapy Department EHU Oran, Algerian Coordinator of AML/MDS Group

Prof. Adda Bounedjar, Head of the Medical Oncology Department, Anti-Cancer Center, Blida, and University of Blida

Survivorship

Prof. Nabil Yafour, Head of the Hematology and Cellular Therapy Department EHU Oran, Algerian Coordinator of AML/MDS Group

Prof. Adda Bounedjar, Head of the Medical Oncology Department, Anti-Cancer Center Blida, and University of Blida

Prof. Fatiha Gachi, Professor, Head of Department Pediatric Oncology, Bab El Oued University Hospital, Algiers


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