National cancer control planning in the Eastern Mediterranean Region

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The Eastern Mediterranean Region (EMR) is expected to witness substantial population growth and ageing in the coming decades. This, along with changing risk factors, will lead to an increasing burden of cancer. National cancer control plans (NCCPs) are essential to mitigate the growing human and financial cost of cancer and to help cope with the increasing demand on health systems. Furthermore, well-implemented NCCPs will help realize the Sustainable Development Goal to reduce deaths from noncommunicable diseases by 30% by 2030.

Over half of the EMR countries do not yet have operational NCCPs. Many of them face challenges including political instability, competing priorities and fragmented healthcare systems. In order to reach the highest achievable level of cancer control, countries will need to develop a national plan focusing on strong governance, engagement of all stakeholders, including non-health sectors, and will need to set priorities and targets with proper budgeting. Monitoring and evaluation should be an integral part of the plan.

Priority cancer control areas in the EMR include strengthening primary healthcare which provides preventive and early diagnosis activities, scaling up multidisciplinary cancer care, tobacco control, and human resources, strengthening and increasing access to supportive and palliative care, and supporting surveillance and high-quality policy-relevant research. Regional collaboration in the areas of research, training and clinical care as well as exchange of technical expertise can help build capacity and better utilize existing resources.

Background

The Eastern Mediterranean Region (EMR) comprises 22 member states in the Middle East and North Africa, with a total population of around 712 million *(1)*. Many of these states share elements of language, religion and culture. However, EMR states vary widely in terms of their economic situations and their levels of health service development. The World Health Organization (WHO) categorizes EMR countries into three health system groups based on population health outcomes, health system performance and their level of healthcare expenditure *(2)*.

Group 1: High-income countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates).

Group 2: Middle-income countries (Egypt, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Libya, Morocco, Palestine, Syrian Arab Republic and Tunisia).

Group 3: Low-income countries (Afghanistan, Djibouti, Pakistan, Somalia, Sudan and Yemen).

This is reflected in large differences in health system and work-force capacity between EMR countries. For example, per 100,000 cancer patients, the number of mammographs ranged from 1 to 186, the number of external beam radiotherapy units ranged from zero to 24 while the number of surgeons ranged from 15 to 1,918 *(3)*.

The three most frequently diagnosed cancers in the region amongst women are cancers of the breast, colorectum, and cervix. For men they are lung, liver, and prostate cancer (Figure 1). While lung cancer contributes an equal proportion of cancer incidence worldwide as breast cancer and is the leading cause of cancer deaths (followed by colorectum, liver, and stomach cancer), breast cancer carries by far the highest incidence and mortality burden in the EMR *(4)*.

The Global Cancer Observatory estimated that there were nearly 680,000 newly diagnosed cancers and over 400,000 cancer deaths in the EMR in 2018 *(4)*. The region witnessed a 46% increase in cancer incidence between 2005 and 2015 *(5)*.

This was mostly attributed to population growth and ageing, and to better diagnosis and reporting, but changing risk factors have also contributed to the increased incidence. Second to the African Region, the EMR is projected to experience the highest relative increase in the number of cancer deaths in the coming decades (Figure 2).

With increasing life expectancy and the advancement of cancer treatments, we will see more people being diagnosed with cancer and living with it. In recent years, there has been a rise in the number of targeted therapies, most of which are very expensive. With cancer control in the EMR mostly directed towards treatment, healthcare systems cannot cope with the rise in treatment cost. More attention is being directed towards prevention and early detection, but systems remain deficient in early diagnosis, referral, and coordinated management.

Target 3.4 of the Sustainable Development Goals (SDGs) aims to reduce by one third premature mortality from noncommunicable diseases (NCDs) by 2030 through prevention and treatment (6). Current projections show that the EMR is expected to achieve the least progress towards this target (7). The probability of dying prematurely (between the age of 30 and 70) from an NCD in 2016 ranged from 11% in Bahrain to 30% in Yemen (8). Cancer deaths constitute around 23.5% of premature NCD deaths in the region (9). Having effective cancer control programmes and policies in place can therefore make a significant contribution to lowering premature mortality.

Following the landmark resolution of 2011 where a commitment was made by Heads of State to address cancer and other NCDs (10), many countries started developing National Cancer Control Plans (NCCPs). What came to be known as the "Cancer Resolution" was passed in 2017 by the World Health Assembly (Agenda Item 15.6, WHA70.12), putting cancer high on the global agenda (11). Furthermore, the universal healthcare (UHC) resolution in 2019 highlighted the need to address NCDs including cancer (12). The necessity of UHC is especially highlighted in the context of cancer due to the often prohibitive costs of cancer treatment.

Cancer risk factors in the EMR
Many of the prevalent cancer risk factors in the region like tobacco use, ambient air pollution, physical inactivity, unhealthy diet, and harmful use of alcohol contribute to the rising incidence of cancer and other major NCDs. For example, estimates of tobacco use prevalence in men range from 18% in Oman to 49% in Lebanon. In women, they range from less than 1% in several EMR countries to 30% in Lebanon (13). The EMR is the only region where an increase in tobacco use is expected in both men and women by 2025, and many of its countries

Figure 1: Estimated numbers of the top ten cancers diagnosed and their corresponding numbers of deaths in women and men in the WHO Eastern-Mediterranean region, 2018. *Data source: International Agency for Research of Cancer, Global Cancer Observatory (https://gco.iarc.fr)*
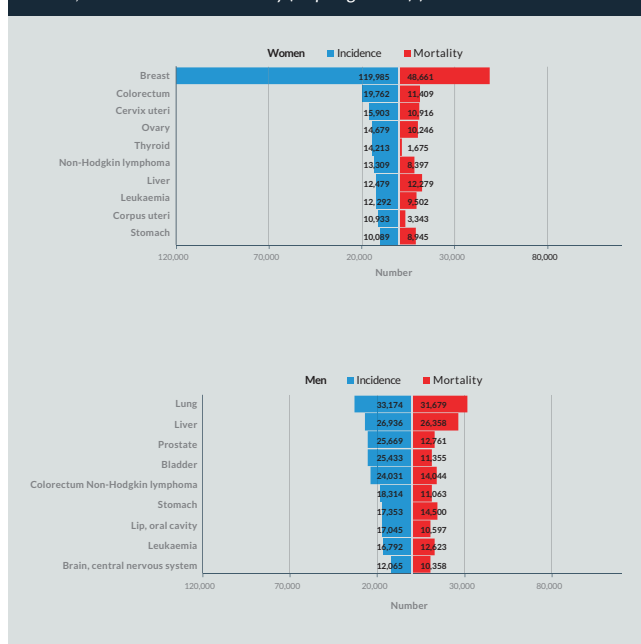

Figure 2: Cancer mortality projections by WHO region. WPR (Western Pacific Region), EUR (European Region), SEA (South-East Asia Region), AMER (Region of the Americas), AFR (African region), EMR (Eastern Mediterranean Region). *Average percent increase per 15-year interval. *Data source: WHO Health statistics and information systems: https://www.who.int/healthinfo/global_burden_disease/projections/en/*
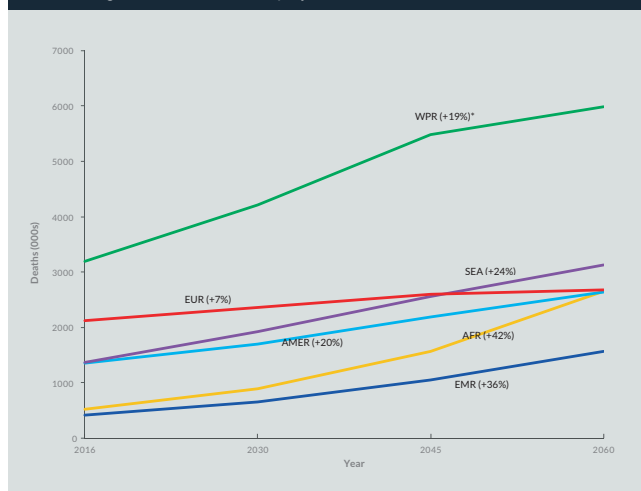
are unlikely to achieve the 30% tobacco use reduction target (14). Accurately quantifying tobacco use and its health impacts in this region is challenging due to the widespread use of waterpipes, for which there is no standardized method to measure its consumption. Consequentially, it is difficult to estimate its hazard compared to cigarettes. The prevalence of alcohol consumption in 2016 ranged from less than 1% for women in several countries to 52% for men in Qatar (15). Obesity is very common in the Gulf Cooperation Council (GCC) countries, Jordan and Egypt, especially in women (16). Physical inactivity is also highly prevalent across income levels. All EMR countries have high average red meat consumption

and insufficient fruit and vegetable intake *(17)*. Effective prevention programmes to tackle these risk factors will help to reduce the burden of cancer and other NCDs.

To varying degrees, infection-related cancers still significantly contribute to the cancer burden in the EMR, even in high-income countries. In some instances, this reflects the lead-time following exposure to infectious agents that were highly prevalent in the past, such as *Schistosoma haematobium* causing bladder cancer or the hepatitis B and C viruses, which are major causes of liver cancer in the region. *Epstein-Barr* virus and *Helicobacter pylori* are highly prevalent in the EMR and are associated with some types of lymphoma and stomach cancer. *Human papillomavirus* (HPV) causes virtually all cervical cancer and less commonly, anogenital and oropharyngeal cancers. Hepatitis B virus vaccination is included in the vaccine schedules of all EMR countries and 3-dose coverage in 1-year-olds has rapidly increased, reaching 82% in 2019 for the whole region. About half the EMR countries have achieved over 90% coverage, but it remains low in others, especially Somalia and Afghanistan. Hepatitis B vaccination rates dropped drastically in Syria since the start of the war in 2011 *(18)*.

With the exception of Libya and the emirate of Abu Dhabi (United Arab Emirates), none of the EMR countries routinely vaccinate girls against HPV *(19)*. However, in November 2021, Saudi Arabia has announced the start of routine vaccination against HPV for girls 9-13 years.

The WHO defines national cancer control programmes as "public health programmes designed to reduce cancer incidence and mortality and to improve quality of life of cancer patients, through the systematic and equitable implementation of evidence-based strategies for prevention, early diagnosis, treatment and palliation, making the best use of available resources". A national cancer control plan (NCCP) is a government document which lays out the path to achieving the programme's aims and objectives, answering questions such as who is responsible for a task, when and how they will achieve it within a given timeframe and the available resources. Elements of the plan translate into national policies which are concrete measures specific to the country's situation and based on relative priority *(20)*. Establishing NCCPs was stated by the WHO as one of five steps towards cancer control *(7)*.

Current situation of NCCPs in the EMR

Countries across the region vary in terms of the availability and quality of NCCPs. While some states have comprehensive, well-implemented NCD plans which include cancer, others have dedicated cancer plans, though these can be poorly structured and implemented. Some countries like Jordan have plans for specific cancers.

To date, 13 of the 22 EMR countries (60%) have operational NCD plans which include cancer, while ten (45%) have standalone NCCPs. NCCPs are under development in two countries and not in effect in one; while nine countries do not yet have an NCCP. Fifteen (68%) have population-based cancer

Table 1: The availability of noncommunicable disease (NCD) plans, National Cancer Control Plans (NCCP) and type of cancer registration in each of the WHO Eastern Mediterranean Region countries

Country	Integrated NCD plan	NCCP	Cancer registration	Cancer unit available in MoH
Afghanistan	Operational	No	PBCR	Yes
Bahrain	Operational	Operational	High quality PBCR	Yes
Djibouti	No	Not in effect	No information	N/A
Egypt	Operational	Operational	Registration activity	Yes
Iran	Operational	Operational	High quality PBCR	Yes
Iraq	Operational	Operational	PBCR	Yes
Jordan	Not in effect	Under development (breast cancer only)	High quality PBCR	Yes
Kuwait	Operational	Operational	High quality PBCR	Yes
Lebanon	Operational	No	PBCR	N/A
Libya	Not in effect	No	Registration activity	Yes
Morocco	Operational	Operational	PBCR	Yes
Oman	Operational	No	PBCR	Yes
Pakistan	No	No	Registration activity	Yes
Palestine*20, 21	Operational	No	Registration activity	Yes
Qatar	Operational	Operational	High quality PBCR	Yes
Saudi Arabia	Operational	Operational	High quality PBCR	Yes
Somalia	No	No	No information	No
Sudan	Operational	Under development	PBCR	Yes
Syrian Arab Republic	No	No	Registration activity	Yes
Tunisia	Operational	Operational	PBCR	Yes
United Arab Emirates	Operational	Operational	PBCR	Yes
Yemen	No	No	Aden Region Cancer Registry	N/A

PBCR: Popuation-based cancer registry
High quality PBCR: Included in Cancer Incidence In Five Continents, Volume XI

registries (PBCRs) and of those, only six are considered high-quality PBCRs (Table 1).

A survey was carried out by the WHO to assess national capacity for the prevention and control of noncommunicable diseases. During the decade from 2010 to 2019, the percentage of participating EMR countries with operational plans, policies, strategies or action plans for cancer had doubled, reaching 70%. However, along with the African Region, this remains the lowest amongst WHO regions. EMR had the lowest proportion of countries with a system for collecting mortality data by cause of death (70%). On the other hand, 70% of EMR countries have population-based cancer registries, the highest after the European Region (22).

In a global analysis of existing NCCPs, only 6% of EMR countries mentioned the cost of the plan with an implementation strategy. All the EMR countries mentioned cancer registries, and 88% mentioned breast cancer screening (23).

Developing NCCPs

Well-implemented NCCPs offer the most feasible means for cancer control even in low-resource settings (24). From 2000 to 2015, countries which had an NCCP achieved a statistically significant reduction in the prevalence of male smokers and increase in screening uptake of breast cancer compared to countries which did not have one (23). In an analysis by the Organisation for Economic Co-operation and Development (OECD), countries which implemented elements of governance in their NCCPs consistently had better cancer survival outcomes (25).

While NCD plans cover some areas which impact cancer control, like prevention of common NCDs risk factors and palliative care, other areas of cancer control are specific to cancer and not addressed in NCD plans; such as prevention of infection-related cancer, early detection, cancer management, supportive care, and cancer information systems.

A regional framework for action on cancer prevention and control was endorsed by the regional committee for the EMR in 2017 and was updated in June 2019 (Annex Table 1) (26, 27). It provides a roadmap for countries to develop and implement NCCPs and highlights strategic interventions and indicators in the six areas of governance, prevention, early detection, management, palliative care, surveillance and research. It emphasizes the urgency of scaling up prevention policies and programmes, prioritizing early diagnosis, establishing and strengthening monitoring and evaluation systems, and ensuring sustainable financing.

Government commitment is a crucial first step of cancer control. This requires recognition of the cancer burden through national situational analysis and advocacy.

Countries that do not yet have a NCCP should establish a national cancer control committee as an initial step to develop an NCCP in line with the WHO regional strategy and the WHO planning guide for effective cancer control programmes (28, 29). Establishment of this committee under the ministry of health would give it authority and credibility (30). This should take place after identifying and involving relevant government and non-government stakeholders (e.g. academic institutions, civil society, patient advocacy groups and charities). Thereon, relevant stakeholders should be involved in every step of the planning process. A situational analysis should be carried out to evaluate the burden of cancer and its risk factors and assess available resources. While most countries in the EMR have developed a cancer plan, most of them have not gone through this process of engaging stakeholders and situational analyses.

Informed by the knowledge gained, the committee should set objectives and priorities for cancer control, taking into account the feasibility of interventions and the cultural and political context, and focusing on evidence-based, high impact, low cost services. It is useful at this stage to define a set of values (e.g. equity, accessibility, cultural sensitivity, integration into existing healthcare infrastructure) which will guide further decisions and actions (30). The level and source of financing should also be identified and a timeline for implementation should be set.

Cancer control capacity can progress after the first most urgent and cost-effective priorities (usually tobacco control, early diagnosis and palliative care) are initiated and as more resources become available, or when one-off infrastructure has been established, freeing funds for further actions. This involves a stepwise increase in population coverage, geographic coverage, cancer types included and scope of services available in universal healthcare packages. Achievements along every step should be measured and communicated in order to attract political and financial support. WHO "best buys" in cancer control may be helpful as a template to adopt relevant elements in NCCPs (31).

NCCPs should be comprehensive, covering important components along cancer care continuum; coherent, aligning with broader national or regional health related plans and strategies; and consistent with evidence-based best practices and standards.

Monitoring the indicators included in the regional framework will provide data which enable evaluation of the plan's performance and inform the next agenda priorities.

Challenges

The main limitations identified in cancer control planning are poor governance, leadership and commitment at country

level due to competing priorities, lack of proper costing and budgeting, and lack of monitoring *(23)*. Limited engagement of primary healthcare with no clear path for patient referral, fragmented and weak health systems and lack of resources, including qualified personnel in fields such as paediatric nursing, radiation oncology and palliative care, are also challenges many countries in the region face. Most plans in the EMR lack the element of national targets and goals with a system for monitoring and evaluation.

Many of the current metrics reported for the region are estimates derived from limited data or data of neighbouring countries. Lack of high-quality incidence and mortality data is highlighted by large differences in modelled estimates between GLOBOCAN and the Global Burden of Disease study, which sometimes also differ from nationally reported figures. This poses a challenge in assessing the burden of cancer *(5)*. In some countries, conflict, migration and government instability have also affected the availability of accurate population data and civil registration systems. Data for the occupied Palestinian territories and Somalia are not presented in several international studies.

Poverty and conflict have led to urgent health crises diverting attention from the control of noncommunicable diseases towards competing priorities, while the burden of cancer lurks in the background. Around half of the EMR countries are experiencing acute or long-standing emergencies, which has impacted the availability and stability of services and of programmes for cancer control. These countries not only suffer from lack of treatment and deteriorated infrastructure but also shortage of local healthcare professionals due to a "brain drain". The long-term nature of many of the preventive strategies to produce outcomes, especially in the form of reduced incidence, makes cancer control seem less attainable. Countries hosting refugees are experiencing overstretched health systems. Besides the need for long-term political solutions, international financial and technical support can provide valuable diagnostics, treatment, palliative care and surveillance in those regions *(7, 32)*.

Additionally, several countries in the region have some of the largest numbers of migrant workers in the world, and some have groups which hold no citizenship. These groups may have some entitlement to healthcare but are hit hardest by cancer as there are often limits to the treatment they would receive due to high cost. They are also frequently unaccounted for in cancer registration systems. Therefore, cancer services should be included in UHC benefits packages for all.

Population-level cancer control cannot be realized without plans which engage both health and non-health sectors *(33)*. Limited inclusion of non-health sectors in planning and implementation challenges the effectiveness of these plans.

Priorities and special considerations for the EMR

In the EMR, more than half of cancer patients present with advanced tumours, therefore, down-staging through raising awareness of early signs and symptoms, effective early diagnosis and prompt referral to cancer care facilities is a top priority for countries of all income levels. Strengthening primary healthcare which is the basis of prevention and early diagnosis activities should also be a focus of NCCPs. The WHO regional office for the EMR (WHO EMRO) considers five cancers a priority for early diagnosis efforts in the region because they are common or amenable to early diagnosis and treatment: breast, colorectal, prostate, cervical and oral cancer *(2)*; yet, a third, half and two thirds of EMR countries have no guidelines for early diagnosis of breast, cervical and colorectal cancer, respectively, and 90% have none for childhood cancers *(22)*.

Some type of breast, cervical or colorectal cancer screening exists in 40–70% of EMR countries, but target population coverage is quite low *(22)*. This reflects the lack of well-planned and coordinated programmes as the majority of these screening programmes were initiated, run, and maintained by non- or semi-governmental agencies with poorly defined catchment populations and inadequate monitoring and evaluation. While there is momentum for screening for several cancers, introducing screening without adequate human resources and infrastructure for follow-up diagnostic tests and treatment may render the programme ineffective. Reaching the target population could also be a challenge in the absence of a well-operating primary healthcare system through which the target population is identified and invited for screening. Screening programmes should rely on evidence-based situational analyses. Any planned screening programme should be preceded by a pilot programme through the health services before national scale-up. The feasibility of colorectal and breast cancer screening may be considered in high-income countries with available infrastructure for follow-up investigations and treatment. Screening data should be periodically evaluated in order to provide evidence for future decision-making.

The incidence and mortality from cervical, and oral cavity cancer are higher in low-income countries *(9, 34)*, and efforts should focus on primary prevention through vaccination against HPV *(35)*, reducing tobacco use, and on cervical cancer screening and oral health awareness programmes. Currently, only 50% of NCCPs in the region address HPV vaccination *(23)*.

In terms of palliative care services, the region faces enormous challenges in opioid availability. Only 24% of EMR countries provide oral morphine for primary healthcare in the public sector *(22)*. Palliative care requires urgent scaling-up, especially where the majority of patients are diagnosed in advanced stages. This should be provided mainly by home-based care in countries with strong family support and poor

health infrastructure *(24)*.

About a quarter of cancer in the EMR could potentially be prevented through lifestyle changes *(17)*. Tobacco control needs to be a top priority in the region. Trachea, bronchus and lung cancer have the highest age-standardized mortality rates of all cancers in the region *(5)*. To date, Iran, Egypt and Pakistan have implemented four of the six MPOWER tobacco control measures *(36)*.

Two-thirds of NCCPs in the region did not mention obesity or alcohol consumption and a further 13% mentioned them without a plan *(23)*. Cancers related to obesity and low physical activity (breast, colorectal) are common in most high- and middle-income EMR countries *(17)*. Social and practical barriers to physical activity and unhealthy diets should be addressed in NCCPs.

A multidisciplinary approach to cancer management should focus on developing guidelines for the treatment of the most common and most curable invasive cancers. This approach will have the highest impact in terms of survival, quality of life and cost reduction. Expanding population coverage in line with the realization of UHC should be prioritized before incorporating more advanced services *(7)*.

Effective cancer care requires training of primary care providers to elicit relevant history, recognize early signs and symptoms of cancer and to provide community-based palliative care. It also requires establishing specialist training programmes in dedicated areas of expertise including medical, surgical and radiation oncology, pathology, and palliative care; as well as the training of specialist technicians, nurses and physiotherapists.

More policy-relevant research is needed in the EMR and its recommendations integrated into health policy *(37)*. Strengthening research in the region also entails population-based surveillance of key health metrics, the removal of barriers for researchers to access both clinical and population-level data within ethical guidelines, and training researchers and clinicians in research methods. Inclusion of a research component in an NCCP is relatively cheap, enables ongoing evaluation and builds research capacity in the country *(38)*. Population-based cancer registries are essential tools for setting national priorities and later monitoring effectiveness of interventions. They provide a backbone for high-quality research including links with other databases such as vaccine and screening registries, treatment records and national death indices to estimate survival. Monitoring population-based cancer survival is crucial to evaluate the effectiveness of cancer care, reflecting the availability of early diagnosis and effective treatment. Along with incidence, it can provide estimates of cancer prevalence in a country or region. When applied to population projections, incidence data are useful

to forecast the future burden of cancer. These metrics reflect different aspects of the cancer burden to enable cancer control planning.

Countries which do not yet have an NCCP should benefit from the experience of similar countries and learn from their successes and failures. Additionally, technical support may be sought from several regional, and international organizations (WHO, IAEA, UICC, IARC, INCTR, GCCCP).

Media and religious institutions could facilitate large-scale campaigns to spread awareness of cancer risk factors (including smoking cessation campaigns), early symptoms, and the benefits of early detection; and to address misconceptions and tackle fatalistic attitudes. While these would reach a large number of the population, efforts should also be made to address marginalized groups, and minorities, many of whom come from lower-income EMR countries. Migrant workers may be especially vulnerable to occupational and environmental risk factors like asbestos, air pollution, and sun exposure. These may benefit from targeted prevention programmes.

Opportunities for regional collaboration

Despite differences in income and development levels between countries of the EMR, the geographic proximity, similarities in risk factors, culture and language offer opportunities for collaboration in research, training, exchange of experience and support.

Civil society organizations and patient support groups have shown active engagement and contribution to cancer control agendas at national and regional levels. For example, the King Hussain Cancer Foundation has been a key player in the cancer control agenda in Jordan and contributed to a number of regional training programmes. Many civil society organizations in the region have been actively involved in lobbying for cancer legislation, mobilizing funds for cancer care and research, providing support for refugees and vulnerable groups and working with the media on awareness campaigns. The example and role model demonstrated by some of the civil society organizations in the region could be supported and enhanced.

The travel of experts for training and treatment or the referral of patients to higher resource level countries with larger treatment centres, especially for rare tumours could prove cost-effective. Likewise, collaboration on a regional level could help address research questions involving less-common tumours. National and regional surveys are needed to assess progress and show the gaps in the implementation of cancer control plans. Telemedicine in the areas of pathology and radiology could support the formation of multidisciplinary tumour boards, aiming to optimize patient treatment plans. Countries with small populations could especially benefit from regional collaboration and shared capacity. Sharing

regulatory requirements for medicine and joint negotiation and procurement both across sectors (e.g. private, public, military) and on a regional level could improve efficiency.

An example of such collaboration is the establishment of the Gulf Center for Cancer Registration (GCCR) in 1998 and the Gulf Center for Cancer Control and Prevention in 2011 *(39)*. The latter aims to develop regional cancer control strategies and evidence-based guidelines, disseminate knowledge through conferences and workshops, organize training courses, and coordinate research. This facilitated the formulation of the Gulf Cancer Control Plan (2016–2025) *(40, 41)*. It also won political support to make cancer a notifiable disease, paving the way for developing a high-quality PBCR with national coverage in four of the GCC states (Bahrain, Kuwait, Qatar and Saudi Arabia). The Gulf joint procurement programme was also put in place to harmonize procurement policies, processes, procedures and objectives of the Gulf Health Council. Between-country coordination requires strong governance and a sustainable financing system.

Conclusion and recommendations

Due to existing regional governance structures, looking at health issues from a regional perspective can support countries to address them effectively. The Regional Committee for the Eastern Mediterranean is the WHO governing body for the region and includes representatives from member countries. Its role is to discuss and endorse regional policies, activities and financial plans. The WHO EMRO also provides various forms of support and advocates for political commitment to cancer control.

Opportunities should be sought for collaboration and support between countries of the EMR. Establishment of a regional cancer network with government representatives of member states, academics and clinical experts could facilitate the sharing of experience in the planning and implementation of NCCPs and foster communication through annual meetings. Due to the political barriers in the region, the WHO EMRO is the optimal and realistic host for the secretariat of this network. This will require an increase in human resources and the recruitment of officers and consultants for capacity building and coordination of the different aspects of NCCPs. Joint grants for coordinated research is also needed to enhance the effectiveness of this network.

Strong governance is key to the success of NCCPs. Indicators of governance can be assessed by metrics such as presence of an operational budgeted plan for cancer control, existence of a multisectoral national cancer committee to oversee the cancer control plan and its implementation, and involvement of all stakeholders. Country-level surveys to monitor progress in the implementation of NCCPs can help identify and address gaps. Publishing reliable incidence and mortality data and high-quality cancer research are also essential to support cancer control committees in planning and monitoring. NCCPs are more likely to be successfully implemented if they start with a small number of achievable aims covering evidence-based national priorities which can be implemented using existing resources, then gradually increasing coverage, scope and quality.

With political will and proper planning, better cancer control is achievable at every income level, and investing wisely will save lives and resources. ■

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Annex 1

Framework for action on cancer prevention and control in the WHO Eastern Mediterranean Region
Updated June 2019, based on resolution EM/RC64/R.2

World Health Organization
REGIONAL OFFICE FOR THE Eastern Mediterranean

	Strategic interventions	Indicators
In the area of governance	» Develop a multisectoral strategy and action plan for cancer prevention and control, as part of national noncommunicable disease response » Establish a national multisectoral committee for cancer prevention and control » Ensure a sufficient national budget for cancer prevention and control efforts » Define an essential cancer care package[1] and identify financing mechanisms to reduce out-of-pocket expenditure » Appoint a national cancer control programme manager	» An operational, funded national multisectoral strategy/action plan encompassing all areas of cancer prevention and control
In the area of prevention	» Implement healthy lifestyle interventions in the areas of tobacco control, physical activity, healthy diet and alcohol, in line with the regional framework for action on noncommunicable diseases » Vaccinate against hepatitis B in infancy » Vaccinate girls between the ages of 9 and 14 by administering two doses of human papillomavirus (HPV) vaccine » Eliminate or reduce exposure to occupational and environmental carcinogens, such as asbestos	» Five demand-reduction measures of the WHO FCTC[2] implemented » Four measures to reduce unhealthy diet[3] implemented » At least one national public awareness campaign on diet/physical activity conducted every 5 years » Percentage of infants receiving three doses of Hep-B vaccine (HepB3)[4] » Percentage of girls between the ages of 9 and 14 receiving two doses of HPV vaccine
In the area of early detection	» Develop, implement and update evidence-based, nationally approved guidelines/protocols/standards for the early detection of priority cancers, with a focus on early diagnosis » Raise community awareness of the early symptoms of priority cancers[5] » Build health professionals' capacity to recognize the early signs and symptoms of common cancers for prompt referral of symptomatic patients to diagnostic and treatment services » Ensure availability, affordability and accessibility of diagnostic tests for suspected cases » Periodically assess effectiveness of early diagnosis and screening programmes	» Availability of evidence-based, nationally approved guidelines for early detection of priority cancers[5] » Proportion of cancer patients diagnosed in early stages » Reduction in cancer mortality rates for which early detection programmes have been introduced » Proportion of cancer patients who receive timely diagnosis within one month of symptomatic presentation at primary health care services » Proportion of women between the ages of 30 and 49 years screened for cervical cancer at least once, or more often, and for lower or higher age groups according to national programmes or policies[4]
In the area of management	» Develop, implement and update evidence-based, nationally approved guidelines/protocols/standards for management of priority cancers » Assess human resource requirements and develop plans to scale up to meet local needs » Ensure availability, affordability and accessibility of an essential cancer care package[1] » Strengthen coordination of referral system with targets to reduce delays to diagnosis and treatment	» Availability of evidence-based guidelines/protocols/standards for management of priority cancers » Proportion of patients who complete a course of prescribed treatment » Availability of national human resource strategies and plans
In the area of palliative care	» Include palliative care within national cancer control plans » Develop, implement and update evidence-based, nationally approved guidelines/protocols/standards for palliative care » Introduce palliative care into the curricula of health care professionals » Develop affordable, multidisciplinary integrated palliative care services, including pain relief, psychosocial and spiritual support, in both hospital and community settings » Ensure availability and accessibility of opioids, analgesics and other essential palliative care medicines, addressing legal and regulatory barriers	» Availability of national guidelines/protocols/standards for palliative care » Access to palliative care assessed by morphine-equivalent consumption of strong opioid analgesics (excluding methadone) per death from cancer[4] » Availability of training programmes for health care professionals
In the area of surveillance and research	» Establish and strengthen hospital- and population-based cancer registries that cover a population not less than one million » Develop a system to monitor quality of care and the performance of national cancer control programmes » Develop and implement a cancer research plan relevant to country needs	» Cancer incidence, by type of cancer, per 100 000 population[4] » Availability of progress/gap analysis on implementation of national cancer control plan » Number of peer-reviewed publications related to cancer

[1] Cancer care package includes diagnostic procedures, medicines and technologies, surgery and radiotherapy, and survivorship care.
[2] Tobacco demand reduction measures, WHO NCD Progress Monitor 2017: Increased excise taxes and prices; smoke-free policies; large graphic health warnings/plain packaging; bans on advertising, promotion and sponsorship; mass media campaigns.
[3] Unhealthy diet reduction measures, WHO NCD Progress Monitor 2017: salt/sodium policies; saturated fatty acids and trans-fats policies; marketing to children restrictions; marketing of breast-milk substitutes restrictions.
[4] One of the 25 indicators of the WHO Global Monitoring Framework on NCDs http://www.who.int/nmh/ncd-tools/indicators-definition/en/.
[5] Priority cancers for early detection can be selected based on how amenable they are to early detection, and on their incidence (and projected future incidence) within the country.

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