

The Latin America and the Caribbean Code Against Cancer: an opportunity for empowerment and progress



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In Latin America and the Caribbean (LAC) region, there are ~1.5 million new cancer cases and ~700,000 cancer-related deaths annually.¹ The number of cases in the region will increase due to population growth and ageing, as well as changes in risks factors. This higher disease burden will have a significant impact on the regional healthcare systems. A large proportion of new cases and deaths could be avoided if interventions focused on primary and secondary prevention were included in national health programs. Reducing incidence and detecting precancerous lesions and cancers at early stages will substantially cut down the economic and social costs of cancer in the region.

Under the framework of the World Code Against Cancer,² the International Agency for Research on Cancer (IARC/WHO) and the Pan American Health Organization (PAHO) launched the first edition of the LAC Code Against Cancer in October 2023. The Code, published in Spanish, Portuguese, and English, consists of 17 recommendations that individuals can apply to reduce their risk of developing or dying from cancer.³ As a novel component, the Code is also directed to the health-decision makers and civil society as key contributors for the implementation of prevention measures and public health policies. The LAC Code also provides an online competency-based microlearning program for primary healthcare professionals to be hosted in the PAHO Virtual Campus for Public Health.⁴

The LAC Code was modelled after the European Code Against Cancer 4th edition,⁵ considering the best available scientific evidence and tailored to the context of the region in terms of cancer burden, major risk factors, socioeconomic and cultural conditions, and healthcare competence. In addition, it was tested in the general population of Brazil, Chile, Colombia, Peru, and Puerto Rico.⁶ The Code was developed by ~60 regional experts, guided by the IARC and PAHO, and

supported by key regional civil societies. Related to global risk factors, the LAC Code emphasises the importance of avoiding all forms of tobacco, alcohol consumption, excessive sun exposure, and hormonal replacement therapy.^{7,8} It also advises making homes smoke-free, maintaining a healthy body weight, being physically active, and promoting breastfeeding.⁹ As regard to diet, eating plenty of whole-grains, and high consumption of vegetables and fruits are recommended. Conversely, consumption of processed and red meats, and foods and/or drinks high in sugar, fat or salt should be reduced or avoided.⁹ The LAC Code also recommends protection from carcinogens in the workplace, vaccination against hepatitis B virus and human papillomavirus, and participation in screening for colorectal, breast, and cervical cancers, focusing on interventions suited to the infrastructure of the regional health systems.

As compared to the European Code, and considering that ~10% of the cancer burden in the LAC region is attributed to infections, new recommendations include discussing with healthcare professionals the benefits of screening and treatment of infections due to *Helicobacter pylori*, hepatitis B and C viruses, and human immunodeficiency virus, and practicing safe sex.¹⁰ Other new recommendations include limiting drinking very hot beverages, avoiding outdoor air pollution and indoor air pollution when cooking and heating with coal and wood, and alerting on e-cigarettes as a gateway for non-smokers to initiate tobacco use.^{7,11} Table 1 summarizes the specific recommendations for LAC with the main reasoning behind them. Each of the 17 recommendation of the Code is accompanied by actions for policymakers to establish the infrastructure needed to enable the public to adopt them.³

During the review process, important knowledge gaps were identified and should be addressed in future studies. As examples, limited information is available on the role of oral health in cancer risk, particularly for digestive tract tumours, and the attributable burden of radon and aflatoxins in the region. Regional-specific evidence, ideally from prospective studies, will be highly relevant for the next versions of the LAC Code.

The Lancet Regional Health - Americas 2023;28: 100644

Published Online xxx
<https://doi.org/10.1016/j.lana.2023.100644>

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Recommendation	Rational
Do not use e-cigarettes in non-smokers	<ul style="list-style-type: none"> - The uptake of e-cigarettes by adolescents and young adults is on the rise in Latin America and the Caribbean (LAC) region. - Adolescent e-cigarette use amongst non-smokers is associated with subsequent tobacco smoking.
Eat a healthy diet	
Limit consumption of ultra-processed foods	<ul style="list-style-type: none"> - Ultra-processed foods (UPF) are high in sugar, fat, salt, and contain artificial additives. - The consumption of UPF is increasing rapidly in the LAC region. - UPF are associated with a range of poor health outcomes including type 2 diabetes, cardiovascular disease, and obesity, and therefore related to obesity-associated cancers.
Limit consumption of very hot beverages	<ul style="list-style-type: none"> - Drinking very hot beverages increases the risk of oesophageal cancer. - Several countries in LAC consume large quantities of very hot beverages, such as yerba mate.
Avoid alcohol consumption	<ul style="list-style-type: none"> - Alcohol consumption is responsible for thousands of annual deaths in the LAC region. - Alcohol consumption is causally associated with several types of cancer. - There is no safe level of alcohol consumption.
Avoid indoor cooking and heating with coal and wood	<ul style="list-style-type: none"> - Coal and wood are the primary fuels used for cooking in ~10% of urban and ~50% of rural households in the LAC region. - Indoor coal and wood burning are a cause of lung cancer. - Women and children, typically responsible for household chores, bear the greatest health burden from indoor air pollution.
Avoid outdoor air pollution	<ul style="list-style-type: none"> - Most of the LAC populations reside in places with high air pollution levels due to emissions from industry, power generation, transportation, and domestic burning. - Outdoor air pollution is causally associated with lung cancer.
Learn from health professionals about the benefits of screening and treating <i>Helicobacter pylori</i> infection	<ul style="list-style-type: none"> - Chronic <i>Helicobacter pylori</i> infection is a cause of gastric (stomach) cancer. - Gastric cancer is a leading cause of cancer deaths in the LAC region. - Anti-<i>Helicobacter pylori</i> eradication treatment reduces the risk of gastric cancer and should be considered for high-risk populations.
Viral infections	
Get screened and treated for hepatitis B, hepatitis C, and Human Immunodeficiency Virus (HIV)	<ul style="list-style-type: none"> - Viral hepatitis remains the predominant cause of liver cancer in LAC region. - HIV is directly and indirectly associated with several cancer types. - There are effective treatments for hepatitis B, C, and HIV infections.
Make sure to use condoms consistently and correctly	<ul style="list-style-type: none"> - Use of condoms prevent sexually transmitted infections related to cancer.
New component related to cancer screening	
A faecal blood test every two years followed by endoscopy for patients who have a positive result, or at least one colonoscopy in a person's lifetime between the ages of 50 and 74	<ul style="list-style-type: none"> - Colorectal is the third leading cause of cancer death in the LAC region. - Both faecal blood tests and colonoscopy (or sigmoidoscopy) have been shown to be effective in reducing colorectal cancer incidence and mortality. - Organised cancer screening programs for colorectal with quality assurance processes are lacking in many countries in the region, although most of them have national guidelines.
Clinical breast examination from 40 years of age, every 2-years	<ul style="list-style-type: none"> - Mammography coverage in the LAC region is suboptimal, with rates of <60%. - A clinical breast examination performed by a trained healthcare professional can recognise many different types of abnormalities and warning signs.
Human papillomavirus (HPV) test from 30 years of age, at least twice in their lifetime, once before age 35 and again before age 45	<ul style="list-style-type: none"> - Cervical cancer is a leading cause of death among women in LAC. - The HPV test looks for high-risk types of HPV that are more likely to cause pre-cancers and cancers of the cervix.
Self-sampling as part of cervical cancer screening	<ul style="list-style-type: none"> - Self-sampling for HPV testing empowers women by allowing them to collect their own specimen in private. - Self-sampling may help in reaching under-screened women and increase screening coverage.

Table 1: Specific recommendations for Latin America and the Caribbean, not included in the European Code Against Cancer 4th edition or included with different emphasis.

The LAC Code aims to enhance awareness, motivation, and actions of individuals, policymakers, and health professionals across the region. The Code provides bases for adopting healthier lifestyles, creating cleaner environments, and establishing interventions to prevent cancer in the growing and diverse LAC populations. During recent decades, the region has developed new initiatives to control cancer. However, several important challenges persist, including limited access to healthcare, unavailable oncology services for rural and

indigenous populations, insufficient cancer screening and tailored detection programs, limited trained personnel, low awareness about cancer prevention factors, deficient population-based cancer registries, and insufficient investment in basic (experimental), clinical and epidemiological research.¹² Adoption of some recommendations of the LAC Code could start as small-scale demonstrative implementation research projects. There is an exceptional opportunity for the countries in the region to learn from and support each other in

reducing their cancer burden. Moving the recommendations from agreement to implementation will require time, effort, and resources. Country-specific comprehensive and coordinated plans developed by policy-makers, health professionals, and communities should be established soon. Specific evaluation measures of short- and long-term impact of the LAC Code at all levels should be clearly defined. Key for this evaluation will be to strengthen efforts related to cancer registration, particularly incidence, and monitoring the prevalence and patterns of key exposures. We believe that continued and targeted prevention efforts against cancer are essential to creating a more just and equitable society for everyone in the LAC region.

Contributors

Conceptualisation: MCC and CE; Writing—original draft: MCC and CE; Writing—review & editing: All authors. The final version of the manuscript was reviewed and agreed to by all authors.

Declaration of interests

Where authors are identified as personnel of the International Agency for Research on Cancer/World Health Organization, and the U.S. National Cancer Institute, the authors alone are responsible for the views expressed in this article; these views do not necessarily represent the decisions, policy, or views of these institutions. CF received support from the American Association for the Study of Liver Diseases for attending meetings and conferences.

Acknowledgements

Funding: This Comment was supported in part by the Intramural Research Program of the U.S. National Cancer Institute. MCS received support from grants P30CA014089 and U54CA233465 from the U.S. National Cancer Institute. CF received support from the Intramural Program of the U.S. National Cancer Institute, The Chilean Fund for Scientific and Technological Development (FONDECYT), and the Chilean Fund for Research Centers in Priority Areas, FONDAP.

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