

2.1 Participating countries

IARC, in collaboration with the Pan American Health Organization/World Health Organization (PAHO/WHO), approached the health authorities of 33 countries in CELAC to identify and nominate experts responsible for cancer screening implementation, to participate in a Train the Trainers programme organized by the CanScreen5 project.

During 2020–2023, 27 CELAC countries took part in the Train the Trainers programme. The training programme covered the following topics: principles of cancer screening, planning and implementing a cancer screening programme, and assuring the quality of such programmes. The blended model of the Train the Trainers programme included 4 self-paced learning modules in Spanish and English (made publicly available as a self-paced

online training programme [8]), 5–7 live online sessions, 3 country-specific assignments, and a 3-day face-to-face workshop.

The 27 countries that submitted data were the following: Antigua and Barbuda, Argentina, the Bahamas, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Uruguay. No information about the remaining 6 countries in CELAC (Barbados, Belize, Bolivia, Haiti, Trinidad and Tobago, and the Bolivarian Republic of Venezuela) was collected for this report.

One of the country-specific assignments included collecting information about barriers to the cancer screening pathway from the health

system perspective. A questionnaire survey for staff members from the management and leadership of the cancer screening programmes was developed with Research Electronic Data Capture (REDCap) software hosted at IARC. REDCap is a secure web-based platform that is designed to support data capture for research studies and provides an intuitive interface for validated data capture, audit trails for tracking data manipulation, and export procedures [9, 10].

2.2 Questionnaire about barriers

The questionnaire used to identify barriers to the cancer screening pathway, and the related social inequalities in the CELAC context, was adapted from Priaulx et al. (2018) [11]. Questions were added about interventions that are in place to overcome those barriers. These

interventions were selected on the basis of a framework adapted from that of Baron et al. (2008) [12] (described in Section 2.4). The questionnaire, which was available in Spanish and English, aimed to collect information across the different steps in the cancer screening pathway, from the identification and invitation of the eligible population to treatment, as well as the development and updating of protocols (Fig. 3).

The specific questions about barriers included several options (Annex 1), which the survey participants had to select from and prioritize (up to the 5 most relevant). The participants were advised to involve different stakeholders in the screening process, to have a consensus on which barriers were the most relevant. However, in some countries this exercise was carried out by a small group, so the results may not be fully representative of the situation in the countries but may rather reflect the perspective of the health authorities. When the most relevant barriers to screening were different for each cancer site, the participants completed a form for each cancer site. The forms received from the first 4 countries in each language (Spanish and English) were used to pre-test the questionnaire, and some questions were reworded to improve understanding.

This report focuses on the 3 most relevant barriers at each step in the cancer screening pathway identified by participants from the 27 countries, as well as the evidence-based

interventions that are in place to overcome the barriers to cancer screening. For those countries that submitted a different form about the barriers for each cancer site (Antigua and Barbuda, Argentina, and Guatemala), only one has been included: that for cervical cancer screening. The reported interventions refer to any of the 3 cancer sites. All of the questions about barriers included an “Other” option, but this was not considered in the classification of dimensions of barriers.

2.3 Framework to assess barriers across the cancer screening pathway

The barriers listed at each step were organized in a framework adapted from the Tanahashi conceptual model [13], in which the effectiveness of health services is a cross-cutting feature that underpins several of the dimensions described below (Fig. 4).

All of these dimensions are applicable to screening and to further management of screen-detected pre-cancers and cancers.

Availability of services

Non-availability of resources (infrastructure, financial resources, and/or human resources) limits the maximum capacity of the cancer screening-related services, and this consequently limits the services available to the eligible population.

Access to services

Even when services are available, if they are not reachable by the target population this can create an access barrier. One can distinguish the following dimensions of the barriers that may prevent services from reaching the target population in a timely manner:

- **accessibility**, which refers to whether the service is reachable by the target population in terms of distance, scheduling, and language, among others; and
- **affordability**, which is related to the population being able to afford the service.

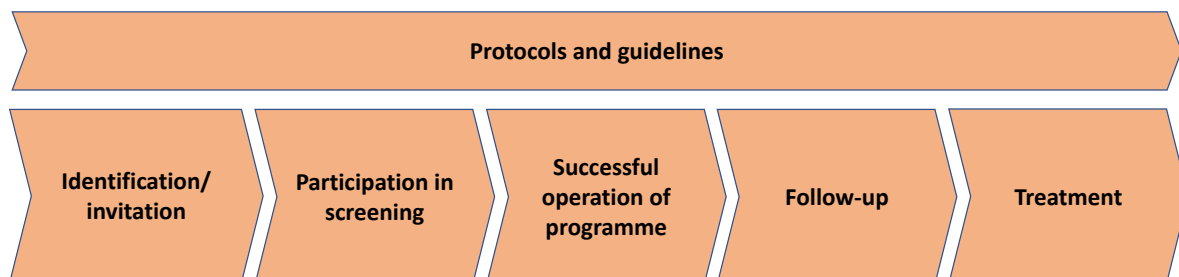
Acceptability of services

When the screening-related services are accessible, they still need to be acceptable to the population; otherwise, people may not come for screening and may even seek alternative care. These barriers relate to the perception of the care and the tests, the quality of care, and the provider. If the service is accepted by the potential user, this is another step forward in the process of service provision.

User-provider interaction

When services are available, accessible, affordable, and acceptable, the next potential barriers are associated with establishing contact between the service provider and the

Fig. 3. Steps of the cancer screening pathway covered in the questionnaire about barriers.



user. These barriers relate to lack of awareness of available screening services or insufficient understanding of the value of the service. Therefore, at this step improving awareness and health literacy are essential to ensure that the services are used.

Effectiveness of services

After the user has contacted and used the services, the next potential barriers to the provision of services are associated with the effectiveness of the services in achieving the desired objectives. The barriers to the provision of effective services were divided into the following dimensions.

- **Governance:** This dimension includes health system governance, organizational support, coordination of delivery of health services, and appropriate administrative processes to implement what has been developed in the dimension of protocols and guidelines, which are essential for effective services.
- **Protocols and guidelines:** This dimension encompasses the generation and dissemination of guidelines, protocols, training, and any other processes pertaining to capacity-building, which includes preparing materials.
- **Information system:** This dimension refers to the flow of

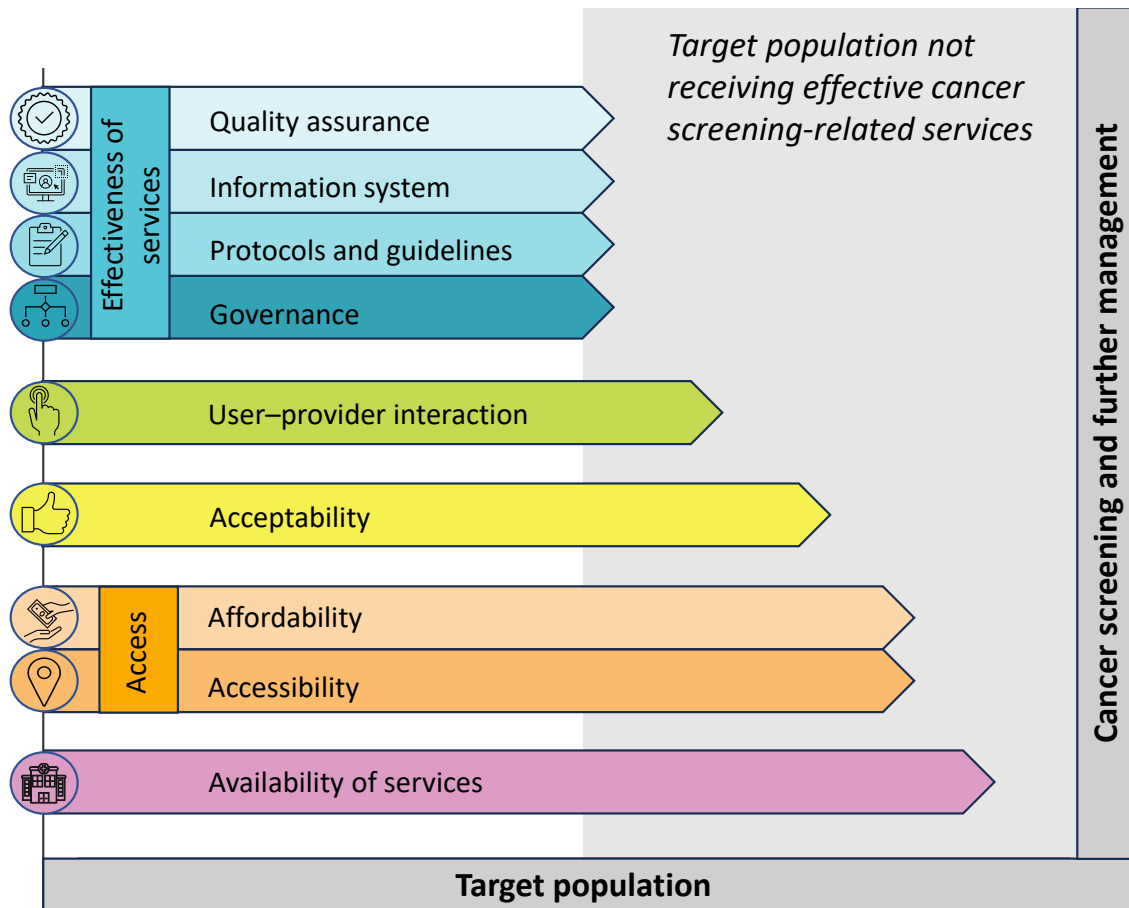
information, data processing, information tracking, information technology systems, and so on.

- **Quality assurance:** This dimension refers to data control, patient monitoring, and evaluation of the screening programme.

2.4 Interventions to overcome barriers to the cancer screening pathway

Several interventions have been proposed in the literature to increase participation in breast cancer, cervical cancer, and colorectal cancer screening programmes. The classification of Baron et al. (2008) [12] was adapted by adding interventions identified from systematic reviews

Fig. 4. Framework to evaluate barriers to the cancer screening pathway. Adapted from Tanahashi [13], and adapted from [26], copyright 1978.



on interventions to increase access and on provider education, further searches on specific interventions, hand-searching, and inputs from experts across continents and disciplines. Interventions to overcome the barriers to cancer screening were classified into the following four levels (Fig. 5).

User-directed interventions to increase demand

At this level, interventions focus on increasing awareness among the

eligible population of the relevance of cancer screening. This level includes mainly educational interventions, through mass media and small media, group education, and one-on-one education; it also covers individual invitation, reminders, and incentives [12, 14, 15].

User-directed interventions to increase access

This level covers reduction of out-of-pocket costs, and interventions that address structural barriers.

For example, interventions to mitigate distance as a problem include self-collection of samples at home for screening, mobile screening units, alternative screening centres closer to the community, and provision of transportation [16–19].

Provider-directed interventions

Interventions included at this level are provider education, assessment and feedback, reminders, and incentives [20–22].

Policy and system-level interventions

This refers to any intervention at a macro level that enables participation in screening. This level covers policies addressing social inequalities in cancer screening, facilitating health-care seeking and delivery, universal health coverage, and the existence and linkage of health information systems [23, 24].

The questionnaire about barriers included questions about interventions at the four levels (user-directed interventions to increase demand, user-directed interventions to increase access, provider-directed interventions, and policy and system-level interventions; Annex 1). Information about invitation to cancer screening was extracted from the countries' validated CanScreen5 qualitative data collection forms [3].

Fig. 5. Framework of evidence-based interventions to overcome barriers to effective delivery of cancer screening services, by the target of the intervention. Adapted from Baron et al. (2008) [12], copyright 2008, with permission from Elsevier.

