INTRODUCTION

Cancer is a leading cause of death and disability globally, impacting more than 14 million people each year. The largest proportion of this disease burden is in low- and middle-income countries where 57% of cancer cases and 65% of cancer deaths occur (1). In 2012, there were 4.3 million premature deaths from cancer, and premature deaths are expected to increase 44% from 2012 to 2030 (2,3). To address this growing burden and achieve targets for premature mortality reduction from noncommunicable diseases (NCDs) set out in the World Health Organization (WHO) Global Action Plan for the Prevention and Control of NCDs 2013–2020 and the United Nations Sustainable Development Goals, effective programmes in comprehensive cancer control are needed.

The WHO NCD Country Capacity Survey (CCS) gathers detailed information on the progress of countries in addressing and responding to NCDs, including an expanded set of questions on comprehensive cancer control (4). The 2015 CCS questionnaire was completed between May and August 2015 through an online platform by the NCD focal point or designated colleagues within the ministry of health or national institute or agency responsible for NCDs. Of 194 Member States, 177 responded to the survey (response rate 91%). The questions were developed in a manner intended to obtain objective information about adequacy of capacity, and countries were requested to provide supporting material.
POLICY, STRATEGY OR ACTION PLAN FOR CANCER

National cancer control policies, strategies or plans contain evidence-based programmes to reduce the incidence and mortality of cancer and improve the quality of life of cancer patients and the general population. To be effective, these plans must be operationalized through systematic and equitable implementation and appropriate funding. Overall, 87% of countries reported having an existing policy, strategy or action plan for cancer, whereas 68% of all countries reported these as being operational (Figure 1). In the Eastern Mediterranean Region, 80% of countries had a policy, strategy or action plan present and only 45% have operationalized that plan. High-income countries were the most likely to have an operational cancer plan.

CANCER REGISTRIES

Cancer registries, a core component of cancer health information systems, have a major role in providing data to prioritize programmes in national cancer control plans as well as to monitor the progress of implementation. For the 160 countries with available data from 2010–2015, the percentage of countries with any type of cancer registry increased from 81% in 2010 to 86% in 2015. The existence of a population-based cancer registry saw an even greater improvement, from 47% to 63% during this 5-year period, and the improvements in the availability of population-based cancer registries increased across all regions from 2010 (Figure 2). The most noticeable increase in population-based cancer registries was in the African Region, with more than twice the number of countries in 2015, compared with 2010.
EARLY DIAGNOSIS

Early diagnosis of cancer improves outcomes by providing care at the earliest possible stage when treatment is most effective and generally less costly and less complex. Diagnosing cancer early requires public and professional awareness (Figure 3), prompt clinical suspicion and timely referral (Figure 4), providing diagnostic investigations including pathologic diagnosis (Figure 7) and linking to effective and accessible treatment (Figure 8).

To detect cancer at the primary care level, countries were more likely to have programmes or guidelines for identifying symptoms of cervical cancer (66%) when compared to breast (64%), prostate (40%) or colon (39%) cancers. For the detection of breast cancer, the Region of the Americas had the highest proportion of countries (74%) and the Western Pacific Region had the lowest proportion of countries with programmes or guidelines (52%) (Figure 3). Only the European Region had a majority of countries that reported colon cancer programmes or guidelines at the primary care level. Upper-middle- and high-income countries were more likely to have programmes or guidelines for early diagnosis compared to low- and lower-middle-income countries.

FIGURE 3. Percentage of countries with programmes or guidelines to strengthen early detection of first symptoms at the primary health care level for breast and colon cancers, by WHO region and World Bank income group

AFR, African Region; AMR, Region of the Americas; EMR, Eastern Mediterranean Region; EUR, European Region; SEAR, South-East Asia Region; WPR, Western Pacific Region.
Source: WHO 2016 (4).

REFERRAL SYSTEMS

Clearly defined referral systems are needed to facilitate timely diagnosis of cancer without delays or fragmented services. In 2015, the percentage of countries that reported having defined referral mechanisms from primary care to secondary and tertiary care were 67% for breast and cervical cancers, 49% for prostate cancer and 48% for colorectal cancer. In total, 41% of countries had referral mechanisms for all four of the surveyed cancers. Availability of referral mechanisms for breast cancer was highest in the Region of the Americas (82%) and lowest in the South-East Asia Region (36%) (Figure 4).

FIGURE 4. Percentage of countries with clearly defined referral system from primary care to secondary and tertiary care for breast and colon cancers, by WHO region and World Bank income group

AFR, African Region; AMR, Region of the Americas; EMR, Eastern Mediterranean Region; EUR, European Region; SEAR, South-East Asia Region; WPR, Western Pacific Region.
Source: WHO 2016 (4).
CANCER SCREENING

Cancer screening is more effective, less likely to cause harm and more equitable when it is an organized rather than opportunistic screening programme. Overall, 79% of countries globally reported having any type of cervical cancer screening programmes ranging from 91% in the Region of the Americas to 25% in the Eastern Mediterranean Region (Figure 5). Of the 139 countries reporting cervical cancer screening services available, 57% had organized, population-based programmes and 40% had opportunistic programmes. In the European Region (62%) and the Western Pacific Region (56%), the greatest proportions of programmes were organized, population based. High- and upper-middle-income countries were more likely to have organized screening programmes compared to low- and lower-middle-income countries.

An additional factor that determines screening programme effectiveness is the participation rate, which is the percentage of individuals in a target population who receive the screening test. Programmes with higher participation rates have higher overall impact, and the general target for a screening participation rate is greater than 70% (5). Globally, in 2015, only 12% of countries reported cervical cancer screening programmes with participation rates greater than 70% (Figure 6). The European Region had the highest proportion of countries reporting participation rates greater than 70% (27%), followed by the Region of the Americas (18%). In the African Region, the majority (40%) of countries reported having less than 10% screening coverage. While 41% of cervical cancer screening programmes in high-income countries had participation rates greater than 50%, only 4% of low-income countries did.
**PATHOLOGY**

Effective and appropriate cancer treatment requires an accurate, timely diagnosis provided by pathology and laboratory services. Pathology services were generally available (in 50% or more health-care facilities) in the public health sector in 75% of countries (Figure 7). In the African Region, 37% of countries reported generally available pathology services in the public sector. There was a strong income gradient: 98% of high-income countries reported pathology services generally available in the public sector compared to 35% in low-income countries.

**TREATMENT**

Approximately two thirds of countries worldwide reported having generally available cancer treatment services that include cancer surgery, subsidized chemotherapy and cancer centres or departments at the tertiary level (Figure 8). In the European Region, over 90% of countries reported having these cancer treatment services generally available. The availability of cancer centres, cancer surgery and subsidized chemotherapy was lowest in the African Region. There was a strong income gradient with more than 90% of high-income countries reporting treatment services available compared to less than 30% of low-income countries. Regarding the availability of radiotherapy, 25% of countries reported having no public radiotherapy centres.
SUMMARY

Results from the CCS 2015 survey demonstrate the variation and significant gaps in the current state of comprehensive cancer control. Although the majority of countries have developed national policies to address cancer, efforts are still needed to ensure that these policies are translated into fully operational interventions. Improved health information systems and population-based cancer registries are critical to inform decision-making, monitor trends in cancer control and improve quality and access. Another important priority identified in this survey is strengthening early diagnosis by developing programmes to identify symptoms at the primary care level and improving referral pathways to provide integrated, people-centred care. Significant deficits in cancer diagnosis and treatment remain in the public sector, particularly in low-income countries, where less than 30% of countries have generally accessible services. To achieve the target of reducing premature mortality from cancer and other NCDs, these gaps must be filled with evidence-based and cost-effective programmes that facilitate early diagnosis and access to treatment and palliative care for all.

The results of this survey rely on the accuracy of information verified by national authorities; it does not offer any information about the scope, quality or accessibility of any services reported. A repeat of the WHO NCD CCS in 2017 will measure progress in these key aspects of country capacity for cancer care.

References


