

# Availability and readiness of services for cancer care at health facilities in Ethiopia: Implication for action

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## Abstract

**Background:** Non-communicable diseases (NCDs) are the leading causes of death globally. Available data demonstrate that nearly 80% of NCD deaths occur in low- and middle-income countries. Of these deaths, an estimated 1.5 million, or 4% were due to cancer. In Ethiopia, data on the preparedness of health facilities to cope with the rising epidemic of cancer are insufficient. Therefore, this survey was aimed to assess service availability and readiness for cancer health care in Ethiopia.

**Methods:** The data used in this study is part of the 2014 Ethiopian service provision assessment survey which was conducted from 10 March to 25 July, 2014. There were a total of 873 health facilities included in this particular study. The facility inventory questionnaire collected information on whether the providers in the facility manage patients with cancer. Information about the readiness of facilities to provide good-quality client services on cancer, including the availability of guidelines and trained staff were also collected.

**Results:** Among all health facilities, 23% of health facilities offer services for cancer. Of the facilities that offer service for cancer, 8 % of them had guidelines for diagnosis and management of cancer at the service site during the survey and only 4 % of the facilities had staff reported that he/she or someone else in the facility had received in-service training in cancer diseases during the 24 months preceding the survey.

**Conclusions and recommendation:** The findings indicate that there is a wide gap in service provision for cancer care and must be filled if basic standards are to be met for cancer care by the health care system. The health system strengthening including provision of evidence-based national guidelines, protocols or standards for managing cancer, training of providers and availing essential medicines are urgently needed for cancer service provision in Ethiopia. [*Ethiop. J. Health Dev.* 2017;31(Special Issue):391-396]

**Key words;** Availability, cancer, Ethiopia, health facilities, readiness, service

## Introduction

Economic development and aging populations worldwide have led to a surge in non-communicable diseases, posing a shared, grave threat to health system sustainability (1). Non-communicable diseases (NCDs) are the leading causes of death globally, killing more people each year than all other causes combined. Available data demonstrate that nearly 80% of NCD deaths occur in low- and middle-income countries. Changes in the population structure and lifestyle result in the growing burden of chronic non-communicable diseases like cancer, which characterize the epidemiological transition. The transition takes place at different paces in different parts of the world. The developed world has taken over a century to complete the transition, while the rapidly developing countries of Asia and Latin America are undergoing a swift transition. In contrast, many sub-Saharan African countries are said to be experiencing a delayed transition(2). Cancer is the second largest contributor to the non-communicable disease burden and its impact continues to rise (1). The burden of chronic diseases is increasing in low- and middle-income countries, while it remains stable in high-income countries. Almost 50 % of the adult disease burden in low- and middle income countries is now attributable to chronic diseases, and about 30 % of all deaths in these countries occur at ages 15 to 59, compared with 15 % in high-income countries(3). An analysis by the Harvard School of Public Health and the World Economic Forum estimated that there were 13.3 million new cases of cancer in 2010, with the number

projected to rise to 21.5 million in 2030(1). For the prevention and control of non-communicable disease including cancer, the 2010 global non-communicable diseases capacity assessment survey report indicated that primary prevention and health promotion, detection of risk factor and disease management were most prevalent activities in the health care systems in the Western Pacific Region, South-East Asia Region and European Region as well as the Region of the Americas, with over 80% of countries providing each in their primary care system. Countries in the African Region and Eastern Mediterranean Region generally reported the lowest prevalence for all components and the global capacity assessment survey conducted in 2013, 85% of countries reported offering risk-factor and disease management in their primary healthcare systems (4, 5). The term cancer is used generically for more than 100 different diseases including malignant tumors of different sites (such as breast, cervix, prostate, stomach, colon/rectum, lung, mouth, leukaemia, sarcoma of bone, Hodgkin disease, and non-Hodgkin lymphoma). Common to all forms of the disease is the failure of the mechanisms that regulate normal cell growth, proliferation and cell death. Ultimately, there is progression of the resulting tumor from mild to severe abnormality, with invasion of neighboring tissues and, eventually, spread to other areas of the body. Cancer is and will be an increasingly important factor in the global burden of disease in the decades to come. The estimated number of new cases each year is expected to rise from 10 million in 2000 to 15 million by 2020. Some 60% of all these new cases

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will occur in the less developed parts of the world (6). Improved cancer control will, to a substantial degree, relate to prevention strategies and early detection programs, including information campaigns and population-based screening programs. Success of the early detection programs will rely on effective and optimal use of treatment possibilities (6).

Cancer diagnosis is the first step to cancer management. This calls for a combination of careful clinical assessment and diagnostic investigations including endoscopy, imaging, histopathology, cytology and laboratory studies. Once a diagnosis is confirmed, it is necessary to ascertain cancer staging, where the main goals are to aid in the choice of therapy, prognostication, and to standardize the design of research treatment protocols. The primary objectives of cancer treatment are cure, prolongation of life, and improvement of the quality of life. A national cancer control programme should therefore establish guidelines for integrating treatment resources with programmes for early detection, and provide therapeutic standards for the most important cancers in the country. Care of cancer patients typically starts with recognition of an abnormality, followed by consultation at a health care facility with appropriate services for diagnosis and treatment. Treatment may involve surgery, radiation therapy, chemotherapy, hormonal therapy, or some combination of these. An initial priority, especially in developing countries, should be the development of national diagnostic and treatment guidelines to establish a minimum standard of care, and promote the rational use of existing resources and greater equity in access to treatment services. Optimal treatment of people diagnosed with certain types of cancer detected early, for example, cancers of the uterine cervix and corpus, breast, testis, and melanoma, will result in 5-year survival rates of 75% or more. By contrast, survival rates in patients with cancer of the pancreas, liver, stomach, and lung are generally less than 15%. Some treatments require sophisticated technology that is available only in locations with substantial resources. Since the cost of establishing and maintaining such facilities is high, it is desirable that they should initially be concentrated in relatively few places in a country to avoid draining resources that could be devoted to other aspects of the national cancer control programme. Facilities can be expanded when additional resources are available. The majority of cancer patients in developing countries are diagnosed at advanced stages of the disease, because of the lack of awareness of the need for rapid action if a cancer symptom or sign is detected, the lack of early detection programmes, and the limited resources for diagnosis and treatment (6).

Cancer care is now responsible for 5–7 % of healthcare costs in high-income countries, reaching approximately \$290 billion per year in 2010 worldwide spending on cancer is equivalent to the GDP of Hong Kong, the 35th largest economy in the world. For many health economies, cancer is one of the three largest areas of medical spending(7, 8). Today there is an expectation in many health economies that the costs of cancer will

rise dramatically. Much of the success in slowing the number of predicted cancer deaths in the developed world has resulted from prevention and screening efforts over the last 30 years. Smoking cessation and tobacco control, breast cancer screening, and colorectal cancer screening have all saved lives. In the US, it is estimated that over one million cancer deaths were averted, through a combination of prevention (thought to be entirely responsible for the decline in lung cancer death rates), early detection, and improvements in treatment, as deaths increased less quickly in the 1990s(9). The set of contextual circumstances arising from the reforms, combined with the lack of resources to provide any ‘headspace’ for cancer were seen as hampering efforts to develop services and improve performance in Ethiopia . Where the incidence of cancer justifies it, and the necessary resources can be made available, providing screening services for cancers is recommended. This is feasible mainly in medium and high-resource level countries. Screening for other cancer sites must be regarded as experimental and cannot be recommended at present as public health policy (10). The ministry of health Ethiopia targeted to launch HPV vaccination demonstration program, and achieve at least 80 percent coverage of girls within the target population, disseminate the National Cancer-Control Plan, Open 58 “Screen-and-Treat” sites and reach at least 80 percent coverage of the appropriate target populations with screening and treatment for pre-invasive cervical-cancer cases (11).

## Methods

**Study setting:** In Ethiopia, the health sector has recently introduced a three-tier health care delivery system: level one is a Woreda/District health system comprised of a primary hospital, health centres and their satellite Health Posts connected to each other by a referral system(12). A total of 23,144 functional and formal sector health facilities are available in Ethiopia which included: 214 hospitals, 3,317 health centres, 15, 525 health posts, and 4,088 private clinics. Information on cancer service was collected from a representative sample of higher level health facilities (hospitals, health centres and private clinics) across the country.

**Data Sources:** The data used in this study were part of the 2014 Ethiopian service provision assessment Survey (SPA). The sample for the survey was a stratified random sample designed to provide representative results for Ethiopia, for different facility types and different management authorities, and for each of the 11 administrative regions of the country. The sample size determination has been achieved by controlling the survey precision at region level and by facility type at national level. The data are nationally and sub-nationally representative and internationally comparable. As described in table 1, there were a total of 873 health facilities included in this analysis.

**Measurement:** Data were collected using a facility inventory questionnaire (13, 14) which was used to obtain information on how the facilities are prepared to provide services for cancer. Cancer services were deemed to be available when the providers in the

facility diagnose, prescribe treatment for, or manage patients with cancer. The facility inventory questionnaire collected information on the availability of specific items, components of logistics support systems, and facility infrastructure, including the service delivery environment. After obtaining consent from the authorities of each health facility, the most knowledgeable provider of services to cancer was interviewed by the data collectors. The two key areas related to the provision of cancer services at the assessed health facilities comprised of the following: Availability of services and service readiness which addresses the readiness of facilities to provide good-quality client services for cancer, including the availability of guidelines, trained staff, equipment, and essential medicines. The indicators presented in this table 2 comprise the staff, training and equipment domains to assess readiness of health facility to provide services for cancer diseases within the health facility assessment methodology proposed by WHO and USAID (2012)

**Data management and Analysis:** The process of inspecting, cleaning, and exporting data was done using CSPro software package. Descriptive analysis was performed using CSPro tabulation. The analyses considered only those items readily available and observed by the interviewers themselves during the survey.

## Results

**Overview of health facilities IB:** Table 1 presents the percent distribution by background characteristics of the facilities that assessed provision of cancer services. The result included findings on cancer for a total of 873 health facilities (214 Hospitals, randomly selected 292 health centres, and 367 clinics) all over the country. Over half (51%) of all the health facilities in this analyses were public, and 45 % were private for-profit health facilities. More than six in ten (61.6%) of facilities visited were from urban area. Hospitals constituted 24.6%, health centres making the largest proportion at 33.4% of all facilities, lower clinics 20.4% while medium clinics 15.1% of the total health facilities visited (Table1).

Table 1: Total number of health facilities assessed by type of facilities

Facility type	Weighed	Unweighed	%	Managing Authority			
				Public	Other governmental	Private for profit	NGO
Referral hospital	2	32	0	31	0	0	1
General hospital	7	130	1	71	1	51	7
Primary hospital	3	52	0	44	1	4	3
Health center	182	292	16	290	0	0	2
Higher clinic	13	57	1	0	0	55	2
Medium clinic	37	132	3	0	4	121	7
Lower clinic	119	178	10	1	3	165	9
National	363	873	100	437	9	396	31

**Availability of services for cancer:** Services were deemed to be available when the providers in the facility diagnose, prescribe treatment for, or manage patients with cancer. Among all health facilities that offer services for non-communicable diseases, 23 % of the facilities reported that providers in the facility diagnose, prescribe treatment for, or manage patients with cancer diseases. Of them 20 % of the facilities reported that providers in the facility only diagnose patients with cancer diseases. Treatment services for cancer are non-existent (0%) throughout all the facility types except primary hospitals in which 2% of facilities reported to give treatment services for cancer. The services for cancer were more likely available in hospitals and higher clinics (ranging from 60% to 69%) than other facility types (in lower clinics only 3%).

**Readiness to provide quality cancer diseases services:** Among the facilities that offer service for cancer, 7 % had guidelines for diagnosis and management of cancer at the service site during the survey. This proportion ranges from 18% for referral hospital to 0 % for lower clinics (Table 2). Among all facilities that offer services for cancer, only 4 % had someone in the facility who had received in-service training in cancer diseases during the 24 months preceding the survey. However, in primary hospitals and lower clinics none of the staff had received in-service training in cancer diseases during the 24 months preceding the survey (Table 2).

Table 2: **Services provided for cancer diseases and availability of guidelines and trained staff among the facilities offering services for cancer diseases, Ethiopia SPA 2014**

Variables	Facilities offering services for cancer diseases <sup>1</sup> (%)	Facilities offering only diagnostic services for cancer diseases (%)	Facilities offering only treatment services for cancer diseases (%)	Facilities surveyed (%)	Had Guidelines (%)	Had Trained staff <sup>2</sup> (%)	Number of offering services for cancer (%)
<b>Facility type</b>							
Referral Hospital	69	44	0	2	18	14	1
General Hospital	66	40	0	7	12	13	5
Primary Hospital	65	54	2	3	12	0	2
Health Centre	28	26	0	182	5	3	51
Higher Clinic	60	48	0	13	11	6	8
Medium Clinic	32	29	0	37	11	5	12
Lower Clinic	3	3	0	119	0	0	4
<b>Managing authority</b>							
Government	29	26	1	190	6	3	55
Private for profit	15	13	0	163	10	6	25
NGO	19	16	0	8	8	0	1
<b>Region</b>							
Tigray	25	20	0	22	15	11	5
Afar	4	4	0	5	33	0	0
Amhara	24	22	0	87	12	0	21
Oromia	17	16	0	116	2	7	20
Somali	30	22	0	8	0	0	2
Benishangul Gumuz	14	9	0	4	0	11	0
<b>SNNP</b>							
Gambella	23	21	1	80	3	3	19
Harari	2	2	0	6	0	0	0
<b>Addis Ababa</b>							
Harari	63	51	0	2	5	5	1
Addis Ababa	36	29	1	31	11	4	11
<b>Dire Dawa</b>							
Dire Dawa	62	56	0	3	10	0	2
<b>Urban/rural</b>							
Urban	28	23	0	149	10	3	41
Rural	19	18	0	214	4	5	41
<b>Total</b>	<b>23</b>	<b>20</b>	<b>0</b>	<b>363</b>	<b>7</b>	<b>4</b>	<b>82</b>

<sup>1</sup> Providers in the facility diagnose, prescribe treatment for, or manage patients with cancer diseases.

<sup>2</sup> The respondent reported that he/she or someone else in the facility had received in service training in cancer diseases during the 24 months preceding the survey. The training must have involved structured sessions; it does not include individual instruction that a provider might have received during routine supervision.

## Discussion

According to WHO(15), cancer diagnosis and treatment service is fundamental to the optimum management of cancer patients, and provision of these services is central to national cancer control strategies. Although it requires long term planning and appropriate assessment of health care resources, without recourse to sophisticated technologies, effective treatment services for many cancers can be comprehensively provided at moderate cost. Studies indicated that around 85% of the world's population lives in developing countries, but are served by only approximately 30% of the world's treatment facilities for cancer care. Conversely, the developed countries, with 15% of the world's population, have 70% of these facilities. Approximately 30 countries (15 countries in Africa as well as several in Asia) do not have even one radiation therapy machine(16). However, availability alone does not determine access to the service. Geographical or spatial accessibility and affordability

by patients and their families to cover the direct and indirect cost of the treatments are also barriers to access. Another component of access is awareness not only the patients must be aware of the existence of treatment and its benefits, but their treating physicians must be aware of the availability and indications for cancer care(17). Despite the high burden of mortality and morbidity from cancer in Ethiopia, the responses to the disease in Ethiopia have not been comprehensive enough as it should be. The result presented in this study indicates insufficient availabilities of cancer services, guidelines for diagnosis and management of cancer and trained staff. However, as compared to other countries, the findings indicated that those facilities offering cancer diagnosis and/or management services in Ethiopia were higher than reports from surveys of other African countries, i.e. 8% in Tanzania where cervical cancer screening is available in only 8% of facilities (18). But it is much more lower than facilities in Zambia where half (53%) of facilities

offered breast cancer screening services (19). A number of perceived challenges facing cancer services were repeatedly found throughout countries (20-23). These included: rising demand for services and a lack of capacity to respond to this rising demand, the loss of national and local leadership and infrastructure, fragmentation of commissioning across the patient pathway; variation in the roles and responsibilities of new organizations and the need to rebuild relationships and regain expertise across the new architecture (20). The findings represent a move away from a model of care that traditionally centered at Black lion Hospital. The evidence suggests that this does not work, and that we need to explore innovative ways of delivering services to each and meet the distinct needs of the Ethiopian population, including through collaboration across individuals, groups, services and organizations. We must continue to ask ourselves: “how can we do better to address all the population. In addition a national framework is necessary to ensure consistent and cohesive care is provided to the relatively small numbers of patients diagnosed with cancer who are widely spread across the country.

#### **Conclusion:**

The finding depicts a wide gap and must be filled if basic standards are to be met for cancer care by the health care system. As we have seen, many health systems will struggle to provide quality cancer care if the dynamics we have described continue to put more demand on a system which is already strained. Failing to address cancer care demand could lead to a variety of undesirable system-level poor outcomes. The health system strengthening including provision of evidence-based national guidelines, protocols or standards for managing cancer, training of providers and availing essential medicines are urgently needed for cancer service provision in Ethiopia.

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#### **Statement of authors' contributions to manuscript**

All authors contributed equal to this work.

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#### **Competing Interest**

Authors declare that they have no competing interest.

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