



## Estimating Cancer Incidence to Improve Cancer Control Programs and Coverage in Ethiopia

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### Summary

Cancer is the second leading cause of death worldwide owing to a growing aging population and to an expansion of key risk factors, such as smoking, obesity and unhealthy diet. Low- and middle-income countries where health systems are often severely resource-constrained are disproportionately impacted by these trends.<sup>1</sup>

Noncommunicable diseases (NCDs), including cancer, are among the Sustainable Development Goals health-related targets. In recent years, the Global Burden of Disease cancer collaboration has urged stakeholders to gather local data on cancer epidemiology in order to develop NCD and cancer action plans.<sup>1</sup> This is particularly important in Ethiopia where, despite improvements to the quality of registry data, local data on cancer epidemiology are lacking.

### Background

Cancer has become the second leading cause of death in the adult population of Ethiopia.<sup>2,3</sup> Recognizing this trend, Ethiopia introduced a national cancer control plan<sup>4</sup> to expand a range of preventive interventions, screening tests for early detection, and diagnosis and treatment, with provision of chemotherapy, surgery, radiotherapy, and palliative care. Intervention selection depends on several factors, including disease burden, cost, and effectiveness. Therefore, the availability of timely local epidemiologic data is necessary to prioritize scale-up of interventions in Ethiopia.<sup>5</sup> This is particularly important in light of the demographic changes, the surge in the prevalence of risk factors such as obesity and physical inactivity, and the changes in reproductive patterns related to urbanization that could increase the cancer burden in Ethiopia.

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#### Disease Control Priorities-Ethiopia (DCP-E)

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## Estimating Cancer Incidence

In a 2018 publication,<sup>6</sup> Memirie and colleagues used population-based registry data to estimate the incidence of cancer in Ethiopia in 2015. They gathered primary data from 8,500 patients in Addis Ababa using a population-based cancer registry housed in Tikur Anbessa Specialized Hospital (TASH). The Addis Ababa cancer registry collects data on the population of Addis Ababa. In Addis Ababa, cancer care is provided in three public hospitals including TASH and 12 private facilities. TASH provides the bulk of cancer care, both for Addis Ababa residents and nationally. In most cases, a cancer diagnosis was confirmed through pathologic examination of a biopsy specimen; otherwise it was confirmed through clinical, laboratory and imaging modalities.

Memirie and colleagues<sup>6</sup> calculated incidence per specific cancer by 5-year age category and sex. They estimated the crude incidence rate (CIR), which is the rate at which new cases occur in a population during a specific time period; and the age-standardized incidence rate (ASIR), which is a summary of the individual age-specific rates using an external population called a standard population. The ASIR is the incidence that would be observed if the population had the age structure of the standard population and corresponds to the CIR in the standard population.

## Results

Over 2012–2015, 5,920 and 2,619 cancer cases were identified in women and men, respectively; 275 were pediatric cases. Of 8,539 total cases, 89% were microscopically verified (cytology/histology examination), and 11% were verified by clinical and other laboratory investigations.

For 2015, the authors estimated around 22,000 (95% CI: 17,000–26,000) and 43,000 (37,000–48,000) incident cancer cases in men and women, respectively, with a male-to-female ratio of approximately 1:2.

The 10 most common cancers in Ethiopia were found to be: cancers of the breast and cervix, colorectal cancer, Non-Hodgkin Lymphoma, leukemia; and cancers of the prostate, thyroid, lung, stomach, and liver. Breast cancer was the most common cancer, accounting for 23% of all cases. Most of these cancers have either known preventable risk factors or available screening programs for early detection and treatment that have paramount impact on clinical outcomes.

## Next Steps

Cancer represents a growing public health concern. The findings of Memirie and colleagues<sup>6</sup> indicate that Ethiopia should expand cancer registry sites including in rural areas to better capture the real rates of cancer in the country. Improving quality and coverage of cancer registration is critical to shaping more effective cancer control programs.

The fight against cancer requires a dual approach: increased investment in assessing epidemiology and application of existing cancer control knowledge across all segments of the Ethiopian population.

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