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BERGEN CENTRE FOR ETHICS AND PRIORITY SETTING IN HEALTH

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Cost-Effectiveness of Running a Pediatric Oncology Unit in Ethiopia

Executive Summary

Childhood cancer treatment could be cost-effective and affordable in Ethiopia, in contrast to the popular assumptions that "cancer is not a problem in low-income countries (LICs)," "it is not curable", and "it is costly and not cost-effective". Such assumptions hinder the prioritization of childhood cancer intervention. Furthermore, the investment could contribute to reducing the financial hardship of paying for health care and could improve equity.

Background

A child's diagnosis with cancer can mean a good prognosis of cure or almost certain death, depending on where in the world the child lives. The overall survival of children with cancer is eight out of ten in high-income countries, while only two to three of ten survive in low-income countries (LICs). Such a drastic difference in survival rate is mainly explained by the poor availability of childhood cancer services in LICs, primarily due to the large resource constraints, the presence of competing high-burden public health problems, and insufficient attention and commitment.

In this work, the authors generated cost, and cost-effectiveness evidence, of running a specialized pediatric oncology unit in Ethiopia to inform the revision of the Ethiopia Essential Health Service Package (EHSP), which classified most of the childhood cancer interventions as low or medium priority services.

Research overview and findings

In 2019, costing and cost-effectiveness studies were carried out from the health care provider perspective at Tikur Anbessa Specialized Hospital in Ethiopia.

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Key findings

Strategy	Cost (USD)	Incremental cost	Effectiveness (DALYs averted)*	Incremental effectiveness	ICER (USD/DALYs averted)	WTP for Ethiopia (2019), USD/DALYs averted
No pediatric oncology care	19.07		0.06			477
Pediatric oncology care (unit)	894.95	875.89	2.49	2.43	360.76	

*The DALYs averted were computed in comparison to a theoretical worst-case situation in which a child dies immediately after cancer diagnosis.

Table 1. ICER of running a pediatric oncology unit compared to no pediatric oncology care at TASH in 2019.

The annual cost of running a specialized pediatric oncology unit per treated child was US$ 577 (ranging from 470 to 1,085), which could be affordable considering the small number of patients in need of care, around 4,000–6,000 per year. The incremental dollar spent per disability-adjusted-life-years (DALY) averted was US$ 361 and it was cost-effective in 90% of Monte Carlo simulations, taking a cautious willingness-to-pay threshold for Ethiopia in 2019 (50% of the GDP per capita, US$ 477).

Furthermore, investing in pediatric oncology treatment could contribute to reducing the financial burden of affected households in paying for cancer care and improving the equity distribution of health gains.

Conclusions

The provision of pediatric cancer services using a specialized oncology unit is most likely affordable and cost-effective in Ethiopia.

Policy recommendation

- We recommend reassessing the priority-level decision regarding childhood cancer treatment in the current EHSP, at least for easily treatable cancer types in centers with minimal to moderate capability, to consider the expansion of specialized pediatric oncology units.