

## CHILDHOOD CANCER MEDICINE ACCESS IN FOUR EAST AFRICAN COUNTRIES

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### Background and Aims

Reliable access to essential childhood cancer medicines (CCMs) is key to improved childhood cancer outcomes in low- and middle-income countries (LMICs). We conducted an analysis of CCM access in four East African countries – Kenya, Rwanda, Tanzania and Uganda – to determine the availability and cost of essential cancer medicines and impact of medicine absence on treatment interruption for five common pediatric malignancies.

### Methods

We analyzed costs and stockout days for 34 essential drugs, based on 12 months of prospective price and inventory data from eight institutions across the study jurisdictions. SIOP adapted treatment regimens were employed to assess the impact of stockouts on treatment interruptions. A mixed-effects logistic regression model examined associations between price, procurement efficiency [as median price ratio (MPR)], site and drug availability.

### Results

Stockouts for many cytotoxic and supportive care medicines were observed across sites, with highest mean unavailability at sites in Kenya (49%), Rwanda (39%), and Tanzania (32%). Medicines vulnerable to stockouts across  $\geq 4$  sites included: methotrexate, bleomycin, etoposide, ifosfamide, oral morphine, and allopurinol. Although there was a statistically significant difference in MPR across sites (range 0.399 -1.28,  $p < 0.01$ ), average MPR at each site was below the internationally accepted threshold for efficient procurement (MPR  $< 1.5$ ). No significant association between MPR and unavailability was found. Several medicines considered essential for treatment of childhood cancer – including pegasparagase, thioguanine, procarbazine and irinotecan – were not stocked across  $\geq 4$  sites.

Impacts of stockouts on treatment were noted across the majority of sites, with greatest potential for treatment interruptions in Hodgkin lymphoma, retinoblastoma and acute lymphoblastic leukemia.

### **Conclusions**

Our study provides detailed information on drug cost and availability in East Africa with implications for CCM access in the region. These data can inform national and regional policymaking to optimize the availability and affordability of cancer drugs in efforts to improve childhood cancer outcomes in the region.