Abstracts

Findings showed discrepancy in the anatomic distribution of pLGG in HICs and LMICs. RESULTS: To aid cancer control planning efforts and guide the alignment of recommendations with diverse institutional needs. The complexity of CNS tumours discussed also increased. CONCLUSIONS: Healthcare professionals attending the WUSM Inter

ABSTRACT CITATION ID: NOAE064.725

LMIC-08. NEUROSURGERY UTILIZATION RATE FOR PEDIATRIC LOW-GRADE GLIOMA: A SIMULATION-BASED ANALYSIS

Scott Bough1, Nickhil Bhakta2, Nancy S. Bolous2, Daniel Moreira2,3,
1University of Washington Medical Center, Department of Neurological Surgery, Seattle, WA, USA, 2St Jude Children’s Research Hospital, Department of Global Pediatric Medicine, Memphis, TN, USA

BACKGROUND: The outcomes of pediatric low-grade glioma (pLGG) are markedly influenced by accessibility to neurosurgical services. Even when clinically recommended, neurosurgical interventions might not be feasible when there is scarcity in qualified medical professionals and preparedness of medical facilities, which is the case in many low- and middle-income countries (LMICs). To aid cancer control planning efforts and guide policy makers and clinicians to prioritize allocation of resources, accurate neurosurgical utilization rate (NUR) estimations are crucial. This study developed a model to estimate the NUR, to facilitate the approximation of neurosurgery needs for pLGG. METHODS: A decision tree model was developed to assess the NUR in HICs and LMICs. Patients were classified into five groups based on the anatomic site of the tumor. For each type of cancer, patients had three surgical options, gross total resection, subtotal resection, and biopsy. Anatomic distribution and likelihood to perform surgical resection were retrieved from the literature for both HICs and LMICs. RESULTS: Findings showed discrepancy in the anatomic distribution of pLGG in HICs and LMICs. Proportion of patients with cerebral hemisphere, cerebellum,

OPHG/diencephalon, brainstem, and spine tumors and their likelihood to undergo surgical intervention were 34% | 28%, 32% | 27%, 17% | 4%, 12% | 3% and 3% | 4% in HICs, and 26% | 22%, 39% | 32%, 26% | 5%, 6% | 12% and 3% | 2% in LMICs, respectively. Overall, NUR in pLGG patients was 66% in HICs and 63% in LMICs. CONCLUSION: Despite the limited resources in LMICs, the overall proportion of patients recommended to undergo a surgical intervention is comparable to HICs. For this need to be met, long-term planning need to take place at the policymaking level. It is possible to estimate the NUR for all pediatric CNS tumors following the same approach to more comprehensively estimate the neurosurgical needs of this patient population globally.