

DISEASE PATTERN PREDICTORS AND OUTCOME OF CHILDREN ADMITTED INTO PAEDIATRIC INTENSIVE CARE UNIT AT MUHIMBILI NATIONAL HOSPITAL, DAR ES SALAAM

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ABSTRACT

Background: Morbidity and mortality in PICU remains a common challenge in many hospitals particularly in resources limited setting like Tanzania. Muhimbili National Hospital (MNH) which is the teaching and highest referral level for Tanzania receives a number of critically ill children admitted into its PICU, but who do not show a clear pattern of disease and outcome.

Objective: The general objective of this study was to determine the disease pattern, predictors and outcome of children admitted into Paediatric Intensive Care Unit (PICU) at Muhimbili National Hospital. **Methodology:** This was a prospective cohort study involving children admitted into PICU between March and June 2020. In-depth monitoring and follow-up were carried out to conceptualize all key information for the study population and data was entered in computer. Data analysis was done using Strata 13.0. Causes of admission and death of all study children in PICU during the study period were summarized using figures and tables. Bivariate and multivariate logistic regression analyses for the odds ratio were used to identify predictors of mortality at 95% confidence interval.

Result: A total of 155 children aged one month to 14 years admitted in PICU between March and June 2020 were enrolled in the study. The majority 124 (80%) were under-five years of age. Most diseases presented as co morbidities. Each child (except two) admitted in PICU presented with several diseases. There was no clear disease pattern. Some children were diagnosed.

with 2, 3 or >3 diagnoses. Severe pneumonia 58(37.4%), sepsis 42 (27.1%), severe malaria 15 (9.7%) and meningitis 12 (7.7%) presented more frequently as co-morbidities. Young age below 12 months of age 124 (80%) was the greatest risk for admission into PICU. An average

length of stay In PICU was 3 days with IQR between 1 and 5 days. Death occurred in 66 of patients during the study period; a mortality rate of 42.6%. Respiratory failure (56%) and cardiac arrest (41%) were the two most immediate causes of death. Low level of consciousness Glasgow Coma Scale of less than 8 at admission and prolonged requirement of mechanical ventilation were significant predictors for children mortality in PICU.

Conclusion; There was no clear disease pattern as most diseases had presented as co-morbidities. The majority of children in PICU were admitted with two, three or more diagnoses. The diseases which presented as co morbidities in order of frequency were severe pneumonia, sepsis, severe malaria and meningitis. Younger children less than 12 months of age had the highest risk for admission into PICU. Mortality was 42.6%. Low level of consciousness (Glasgow score less than 8) and prolonged requirement of mechanical ventilation were highly significant predictors for mortality in PICU.

Recommendation: More comprehensive studies with larger and more representative samples are needed to delineate the disease pattern, predictors and outcome of children admitted into PICU for policy advice. Muhimbili national hospital should establish a continuous paediatric critical

care training Programme for health care providers who are working and those who will work in Paediatric Intensive Care Units and regional hospitals throughout the country where the severely ill children are referred from. Priority should be directed to improving regional hospitals with well-equipped paediatric intensive care units and well-trained staff in order to reduce the burden related to late referrals from many miles to PICU at MNH.