

Factors Related to ICU Admissions Of Childhood Cancer Patients in Tertiary Preferred Hospital in the Private Sector of India

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Background & Purpose

Modern day treatment of childhood cancer is punctuated by necessary need for intensive care. This adds to morbidity, cost and anxiety. In India and other developing countries, data on pediatric oncology can be difficult to analyze due to emerging electronic records and inadequate cancer registries. There is no published data on ICU admission patterns of childhood cancer patients in India and we aimed to address this gap.

Methods

All children ≤23 years of age newly diagnosed with cancer at Max hospital, Saket, Delhi (tertiary referral hospital in the private sector) are registered onto a registry. Those registered between March 2013 to May 2018 were included. 313 records from the 5 years of data were reviewed. ICU admissions were recorded and demographic and disease-related factors associated with ICU admission were investigated.

Results & Key Findings

Total Children Registered: 258

Demographics:

- 61% Indian
- 66% male
- Median age: 7 years

Total ICU Episodes: 204

ICU Episode Information:

- 74% needed only 1 ICU admission
- Median duration of ICU stay: 3 days
- 17 ICU deaths (11% of patients admitted to ICU and 8% of ICU episodes)

ICU Admission Associations

Age group, gender and nationality were not significantly associated with ICU admission but cancer type was (p=0.008).

ICU Admission Rates

Reasons for Admission:

- 53% Operative/Procedural
- 47% Sick/Supportive

On multivariate analysis, distribution by age and gender did not vary significantly in these categories.

Cancer types associated with operative/procedural reason were CNS tumors(61%), neuroblastomas(16%), soft tissue sarcomas(12%) while those with sick/supportive reason were leukemias(40%), lymphomas(15%), and CNS tumors(14%).

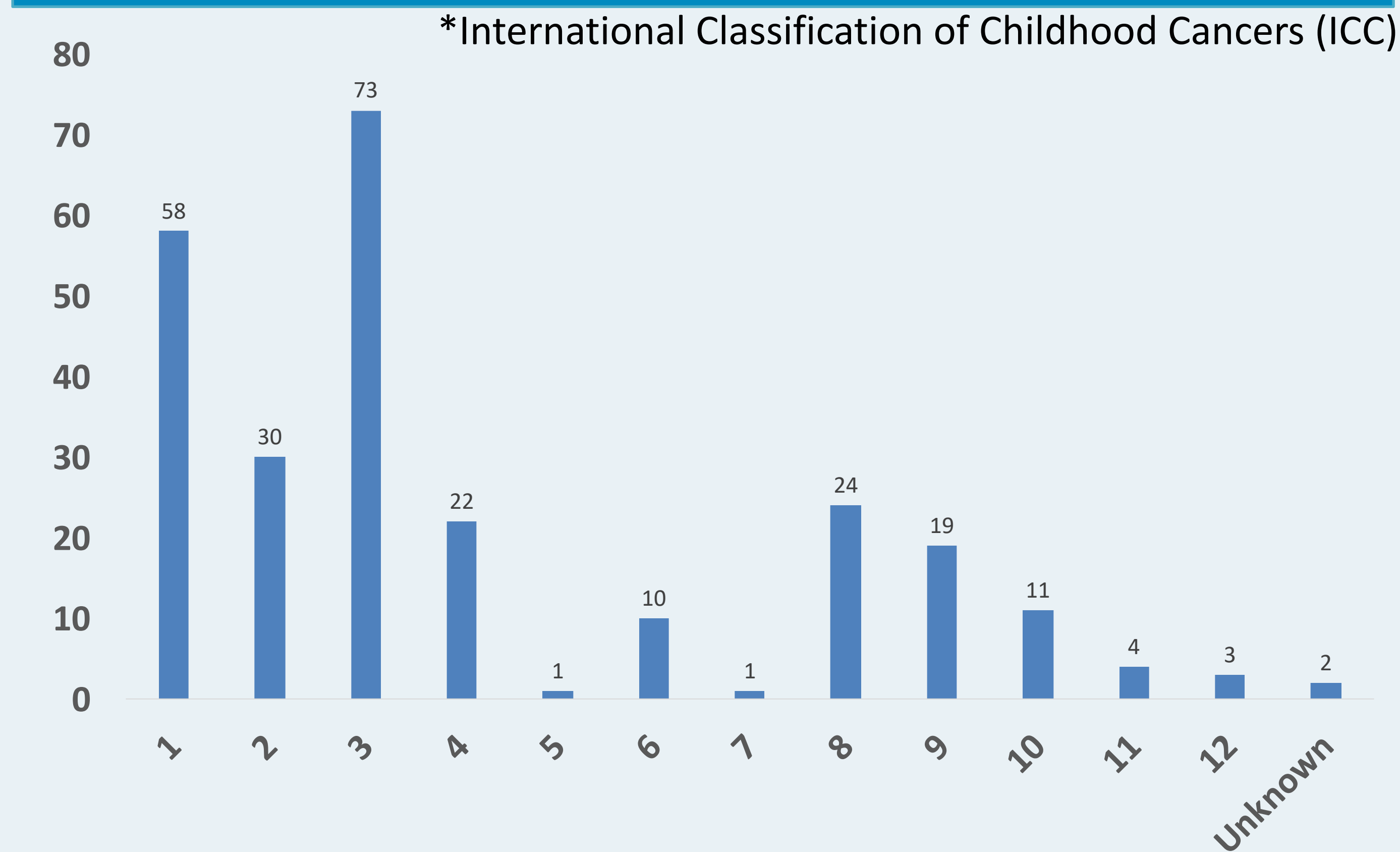
Admission by Nationality:

There were higher ICU admission rates for international patients, p=0.007

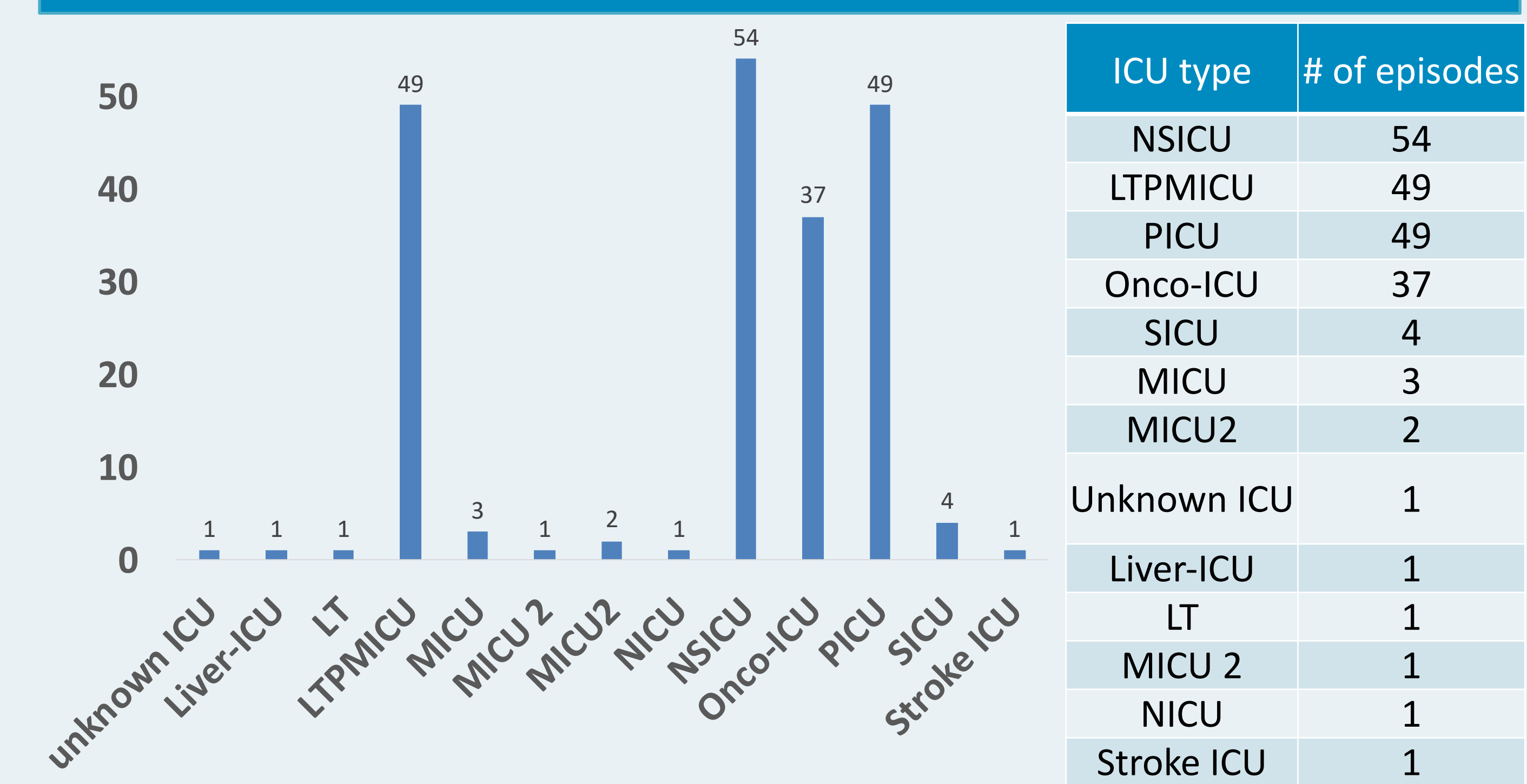
Admission by Cancer Type:

ICU Admission rates were highest for CNS tumors (33%), leukemias (22%), and neuroblastomas (12%)

Cancer Types by ICC Across Total Cohort



ICU Episodes Per ICU Type



Conclusions

Admissions rates for children with cancer to ICU are higher and the mortality rates lower than those reported in the literature. An absence of a high dependency unit in this hospital leading to a greater use of ICU may be a possible explanation. While age group, gender, and nationality were not significantly associated with ICU admission, cancer type was. There were also higher ICU admission rates for international patients. The patterns identified through this analysis can be used to guide planning and precautions for future patients. They may also incentivize development of a high dependency unit in this hospital. Further exploration on factors associated with ICU mortality in this cohort are of interest for future research.

References

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