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" Apollo Children's Hospital PEWS Initiative: Enhancing Pediatric Patient Safety through Evidence-Based Practice''

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BACKGROUND:
Pediatric Early Warning System (PEWS) is widely implemented in healthcare to detect early signs of clinical deterioration in hospitalized children. The timely identification of at-risk patients and the subsequent escalation of care are essential in preventing pre-Medical Emergency Team (pre-MET) complications, unplanned Pediatric Intensive Care Unit (PICU) admissions, and adverse outcomes. Despite its proven utility, adherence to PEWS protocols in clinical settings remains variable, particularly in patients with chronic health conditions or complex medical histories. This study evaluates the effectiveness of PEWS-based patient care escalation in reducing pre-MET complications in pediatric wards of Apollo Children's Hospital over a two-year period.

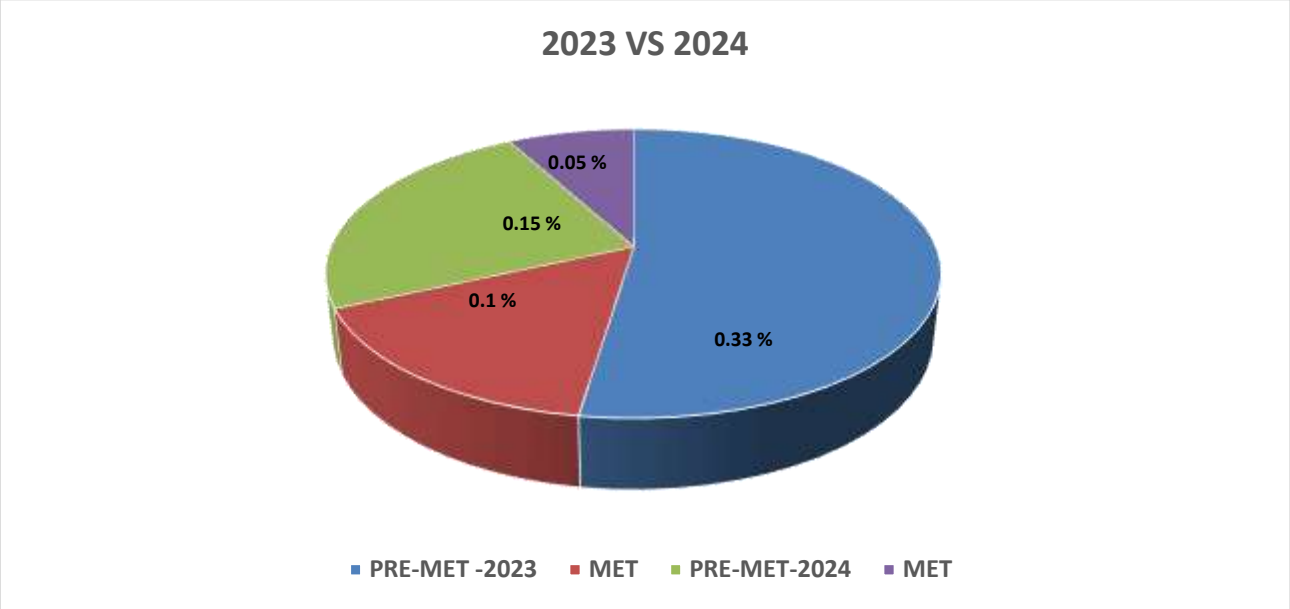
METHODS:
A retrospective study was conducted at Apollo Children's Hospital over two years.
This comparative observational study analyzed the impact of a proactive care escalation protocol guided by PEWS scores across 2023 and 2024. The protocol mandated immediate escalation of care when a child's PEWS score was ≥3, ensuring physician reviews and heightened monitoring. Data from patient records were retrospectively reviewed, focusing on adherence to PEWS-based escalation protocols, frequency of pre-MET events, and outcomes. Statistical analyses were performed to compare the reduction in pre-MET cases and assess the correlation between adherence to PEWS protocols and improved patient outcomes.

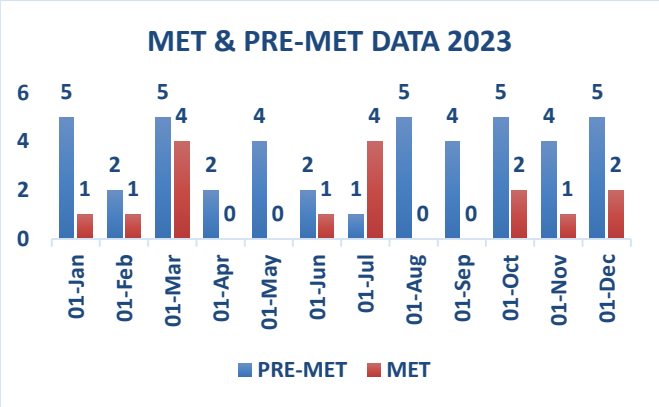
YEAR	No Admissions in wards	pre-MET events	MET activations	PEWS Escalation
2023	14,867	50	16	NA
2024	14,049	22	8	154 (Patients escalated using PEWS score ≥3)

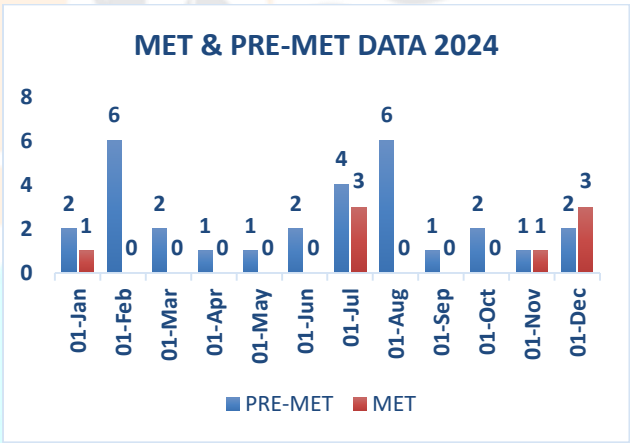
RESULTS:
This study assesses the effectiveness of a proactive Pediatric Early Warning System (PEWS) escalation protocol in reducing pre-Medical Emergency Team (pre-MET) and MET activations at Apollo Children's Hospital. In 2023, before the formal escalation protocol was implemented, 50 pre-MET and 16 MET cases were recorded. Following the introduction of mandatory escalation for PEWS scores ≥3 in 2024, out of 14049 pediatric admissions, 154 patients triggered PEWS escalation. That year, only 22 pre-MET and 8 MET cases occurred—representing a 56% reduction in pre-MET and a 50% reduction in MET activations. The findings indicate that timely identification and escalation based on PEWS scores significantly improve early

intervention, reduce clinical deterioration, and enhance overall patient outcomes. Strengthened communication, structured monitoring, and staff adherence were critical to the success of this intervention.

Children admitted to the pediatric ward, recovery room, and emergency department benefited significantly from this approach. In addition to the reduction in pre-MET cases, the hospital observed improvements in patient recovery rates and reduced lengths of stay for at-risk children. The structured use of PEWS charts and the integration of proactive escalation protocols fostered better communication among healthcare teams and strengthened situational awareness regarding patient conditions.







DISCUSSION:

The findings highlight the effectiveness of PEWS-based patient care escalation in minimizing pre-MET complications and improving pediatric patient outcomes. Key to the success of the intervention was strict adherence to predefined escalation protocols, which ensured that children with early signs of clinical instability received timely medical attention. The reduction in pre-MET cases underscores the importance of continuous monitoring and accurate scoring to enable early detection of clinical deterioration.

The study also emphasizes the critical role of healthcare team training and awareness in promoting adherence to PEWS protocols. Staff education on the importance of early warning scores and the implementation of a clear escalation framework were instrumental in driving change. Further, the use of standardized PEWS charts improved the consistency of score documentation, reducing errors and ensuring appropriate escalation actions.

However, the study acknowledges certain limitations. As a single-center observational study, the findings may not be generalizable to all pediatric settings. Additionally, variations in patient populations, staffing ratios, and resource availability could influence the replicability of these results in other hospitals. Future research should focus on multi-center studies and evaluate the long-term impact of PEWS-based care escalation on patient safety and hospital outcomes.

CONCLUSION:

This study demonstrates that adherence to PEWS-based patient care escalation significantly reduces pre-MET complications, improving pediatric patient safety and clinical outcomes. The 56% reduction in pre-MET cases over two years at Apollo Children's Hospital highlights the importance of structured early warning systems and timely interventions. Further integration of PEWS protocols across healthcare settings, supported by staff training and electronic monitoring systems, has the potential to optimize care delivery for at-risk pediatric patients.

KEY NOTES:

PEWS - Pediatric Early Warning Score
MET- Medical Emergency Team
PRE-MET- Pre- Medical Emergency Team
PICU - Pediatric Intensive Care Unit