Title

Broselow Tape vs Provider Weight Estimation in Pediatric ED Patients

Authors

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et al.

Table 2. Resident reports of and adherence to recommendations from medical school.

Guidance or Adherence to Guidance	EM PGY-1s	EM PGY-2s
	n (%)	n (%)
Received Guidance from School on Number of Programs to Apply To		
Yes	158 (77.8)	122 (76.3)
No	45 (22.2)	38 (23.8)
Received Guidance from School on Number of Interviews to Complete		
Yes	143 (70.4)	120 (75.0)
No	60 (29.6)	40 (25.0)
Adhered to Guidance on Number of Programs to Apply To		
Yes	115 (58.1)	90 (57.7)
No	83 (41.9)	66 (42.3)
Adhered to Guidance on Number of Interviews to Complete		
Yes	101 (51.5)	96 (61.5)
No	95 (48.5)	60 (38.5)

Notes: EM = Emergency Medicine; PGY = Post-graduate Year

41 Broselow Tape vs Provider Weight Estimation in Pediatric ED Patients

Jaryd Zummer, Sameer Desai, Rachel Shercliffe, Madison Reed

Background: The Broselow pediatric emergency Tape (BT) is a color-coded system that uses height to predict a child's weight and determine appropriate equipment size and medication dosages for emergency treatment. More recently, the accuracy of BT weight estimation has been put into question, especially in overweight or obese patients, and in ethnically diverse populations outside of the U.S.

Objectives: Our study aims to determine how BT compares with healthcare providers' estimate of weight based on visual examination alone. We evaluated both provider and patient factors relating to weight assessment. We hypothesized that BT would perform better than providers at predicting weight in pediatric populations.

Methods: This was a prospective cohort study of 200 patients between the ages of 3 weeks and 10 years old seen at a tertiary care pediatric ED between October 2022 and March 2023. A convenience sample of 200 providers recorded their patient weight estimates while initially blinded to the chart. BT height and color measurements were recorded by the primary investigators as well as measured patient weight and demographic information.

Results: When compared with BT, providers were more accurate at predicting patient weight (mean diff 0.06kg, p=0.803 vs mean diff 1.43kg, p<0.001). Both BT and providers were less accurate for patients older than 2 years of age, and those with increasing Body Mass Index (BMI). No significant differences were seen with changing provider factors such as type or specialty, years of experience, and parenthood status.

Conclusions: BT was not as accurate at predicting patient weight as providers' visual estimates. This adds to a body of evidence challenging BT use in subsets of patients and highlighting that alternative methods for weight estimation may be needed in emergent pediatric cases.

Table 1. Comparisons of measured, Broselow and provider predicted weights.

	Measured	Broselow	Difference	P-value
Weight, mean kg (SD)	15.2667 (7.76003)	13.84 (6.566)	1.4267 (2.4388)	<0.001
	Measured	Provider predicted	Difference	P-value
Weight, mean kg (SD)	15.2667 (7.7003)	15.2064 (7.7592)	0.0603 (3.41074)	0.803

Table 2. Secondary outcomes-differences from measured weight based on patient characteristics.

Age	Broselow Tape	Provider
≤ 2 years old mean difference, kg (SD)	0.98397 (1.50486)	-0.44983 (2.32576)
> 2 years old mean difference, kg (SD)	2.0381 (3.2358)	0.76476 (4.41938)
p-value	0.006	0.023
BMI		
Healthy (n=75) mean difference, kg (SD)	0.24 (1.3897)	0.3739 (3.4647)
Overweight (n = 22) mean difference, kg (SD)	3.2545 (1.1291)	0.6218 (3.7929)
Obese (n = 21) mean difference kg (SD)	6.2048 (2.5176)	1.6757 (5.6610)
Total (n = 118*) Mean difference, kg (SD)	1.8636 (2.8231)	0.6518 (3.9863)
p-value	0.001	0.420

CDC criteria for BMI calculation includes only patients ≥2 years old

42 Multimodal Acute Pain Management for Fourth Year Medical Students

Jerome Balbin, Amanda Hall, Michelle Kikel

Background: The provision of adequate, safe, and timely analgesia is a basic tenet of ED pain management. There appears to be a gap in medical student education when it comes to applying multimodal pain management. In this study, we focus on the medical student perspectives as well as the impact of the implementation of a novel pain curriculum and didactic series on 4th year medical students rotating in emergency medicine.

Objectives: To assess 4th year medical students' perspectives on knowledge and comfort in utilizing various modalities for pain management.

Methods: This is an experimental survey-based study. Students participated in a novel curriculum dedicated to Acute Pain Management during their emergency medicine clerkship. Students responded to a pain curriculum pre-survey at the start of their rotation. Subsequently each student was sent a follow up survey following their rotation to determine effects of the educational intervention. Both qualitative and quantitative data was obtained.

Results: There were a total of 51 student rotators between August 2023-October 2023. 49 students completed the pre-test survey and 44 completed the post-test survey. There is a noted significant improvement in both their knowledge base and comfort level with acute pain