

Role of a Pediatric Asthma Protocol in the Emergency Department



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Annual Census 75,000

Duke University Hospital Emergency Department is a 78 bed Level One Emergency Department and Trauma Center located on the campus of Duke University in Durham, North Carolina.

PURPOSE

Asthma exacerbations represent a potentially life-threatening situation for pediatric patients with asthma and require early recognition and treatment. One of the potential barriers to early recognition of symptoms is the lack of a consistent disease-severity score utilized between all treatment team members which may lead to a delay in steroid administration. A nursing-driven protocol was established to identify pediatric patients with asthma exacerbations, assign a disease state severity score (Modified Pulmonary Index Score), and expedite the administration of steroid medications. The purpose of this single-center retrospective study was to compare the time to steroid medication administration as well as registration to disposition time pre and post asthma protocol implementation.

PARTICIPANTS / SUBJECTS

Patients were compared pre-asthma protocol in April through June 2011 and post-asthma protocol in April through June 2012. Patients ages 2 to 18 were included in the evaluation if they had a stated history of asthma, a triage respiratory complaint, and received steroid therapy. Patients were excluded if they left without being seen or left before their treatment was completed.

MPIS SCORING SYSTEM

	0	1	2	3	
SpO2	> 95%	93-95%	90-92%	< 90%	
Accessory Muscle Use	None	Mild	Moderate	Severe	
I:E Ratio	2:1	1:1	1:2	1:3	
Wheezing	None	End-expiratory	Inspiratory & Expiratory: good air movement	Inspiratory & Expiratory: decreased air movement	
H	< 3 years	< 120	121-140	141-160	> 160
R	≥ 3 years	< 100	101-120	121-140	> 140
R	< 6 years	≤ 30	31- 45	46- 60	> 60
R	≥ 6 years	≤ 20	21- 35	36- 50	> 50

METHODS

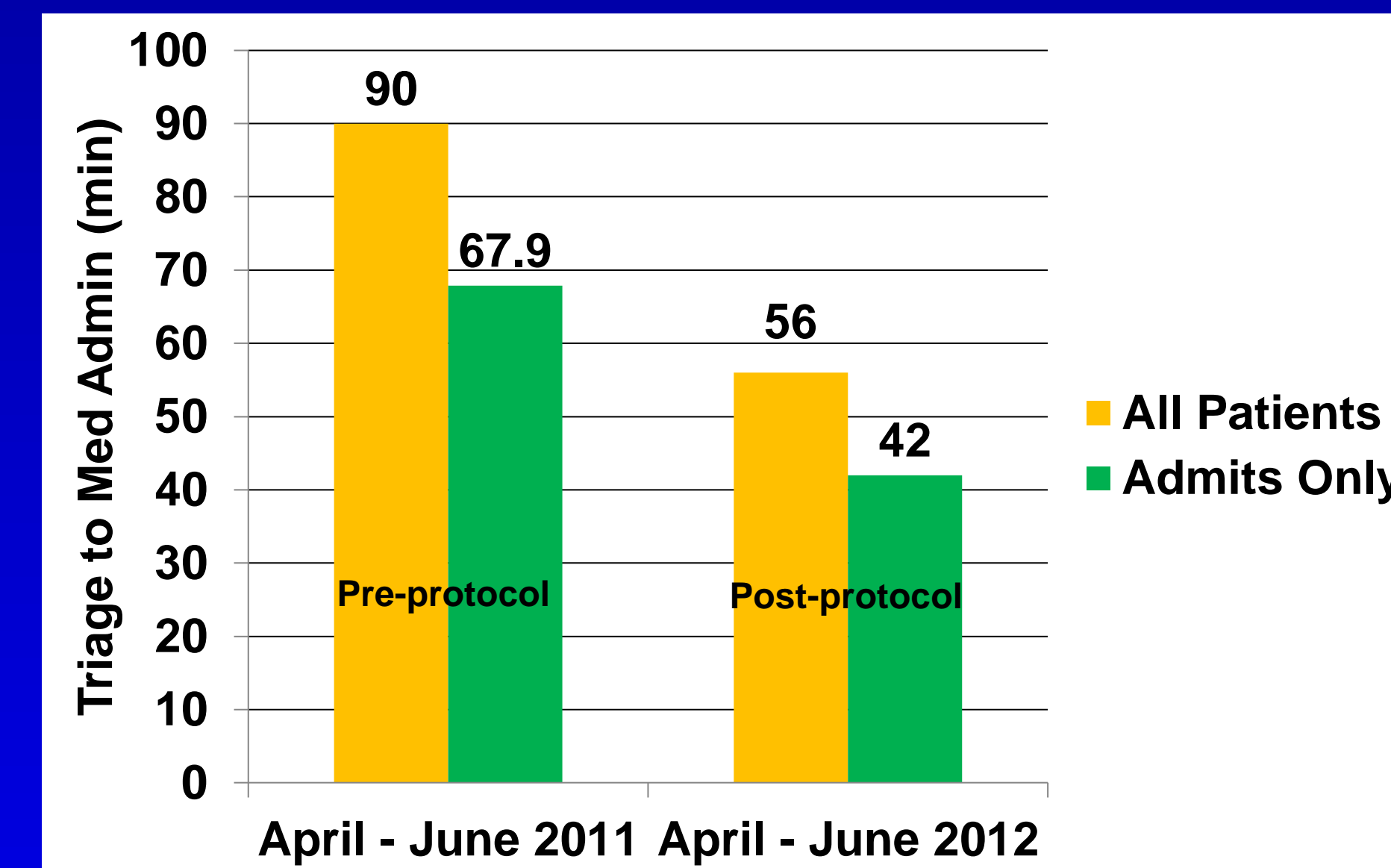
Data collection included registration, triage, steroid administration, disposition times and status. Compliance with the asthma protocol was evaluated in the 2012 data set by noting documentation of the MPIS score and initiation of the asthma protocol.



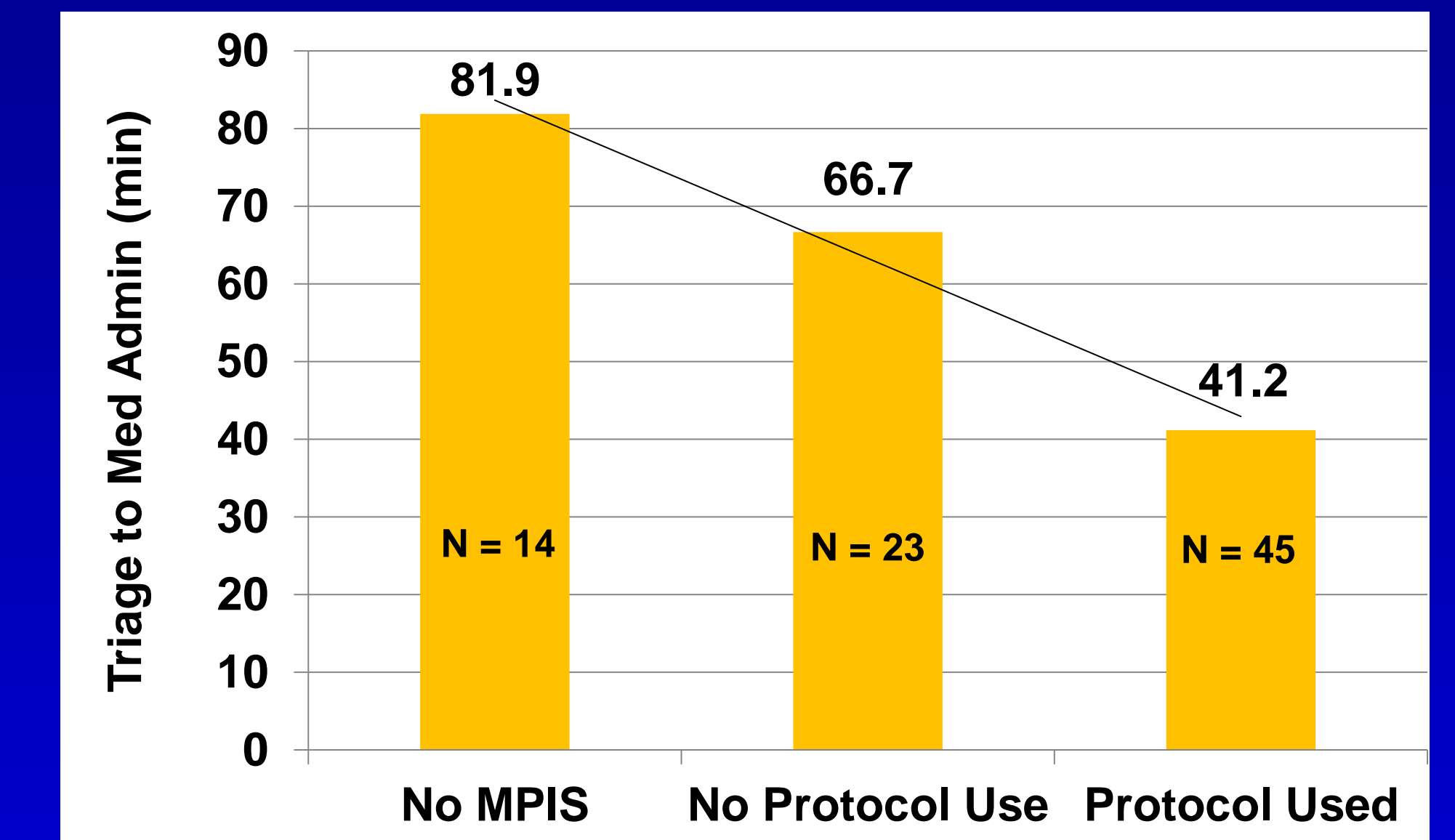
RESULTS

A total of 70 patients (pre-protocol) and 82 patients (post-protocol) were included in the analysis.

TRIAGE TO MEDICATION ADMINISTRATION



TRIAGE TO MEDICATION ADMINISTRATION IN 2012



CONCLUSIONS

- A Pediatric Asthma Protocol did impact time to steroid administration and time from registration to disposition
 - Triage to steroid administration decreased by 34 minutes (37.8%) in all patients
 - Registration to disposition decreased by 43.1 minutes (19%) in all patients
- Decrease in times could be due not only to the protocol but to a greater nursing awareness of the severity of pediatric asthma symptoms and the need for prompt evaluation and intervention through:
 - Introduction of the MPIS score
 - Education accompanying the protocol initiation
- Early treatment is a key intervention in pediatric asthma exacerbations. Time to steroid administration and faster times to disposition can be obtained through the implementation of the pediatric asthma protocol.

REGISTRATION TO DISPOSITION

