

Introduction

Asthma is an inflammatory disease of the airways that affects over 8% of children in the United States and has a mortality rate of 2.5 per million in 0-17-year-old age group. Emergency room visits in 2016 for asthma related reasons were 74.3 per 10,000 in this same age group. Currently our Emergency Department does not follow a standardized approach in suspected asthma exacerbations, and the work up and treatment varies between providers.

We hypothesize that the implementation of a standardized scoring and treatment system will lead to decreased lab and imaging utilization, and length of stay in this population. We also believe there will be a decrease in recidivism.

Methods

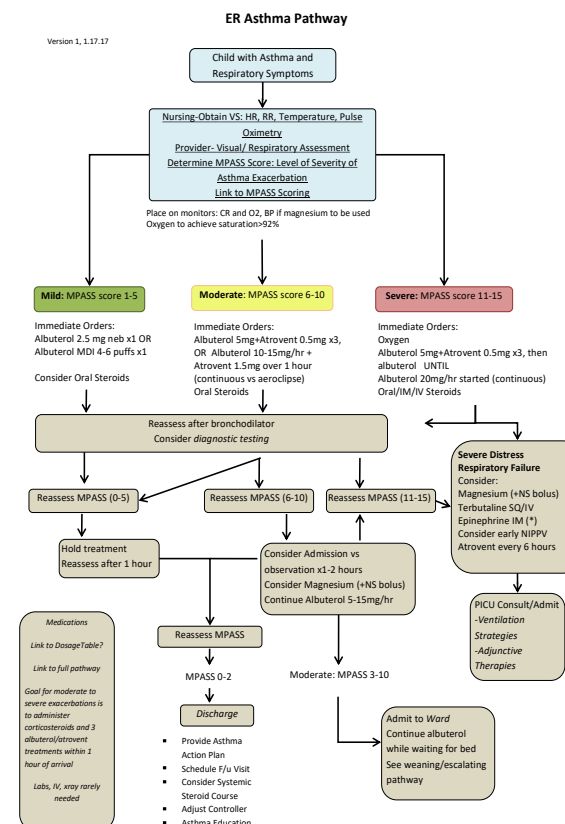
The Modified Pediatric Asthma Severity Score (MPASS) currently used at Children's Hospital of Oakland will be implemented in our department. Scoring will be done by nurses and respiratory therapist at initial presentation. Scores will correlate to a predetermined treatment algorithm that will be initiated by the assigned patient nurse. Physicians, residents, and mid-level providers will be informed of the beginning treatment and be used as a revalidation of initial score. Data will be retrospectively collected for the previous 12 calendar months for length of stay, lab testing, and radiology ordered in patients diagnosed with asthma related visits. We will then compare that data after our collection period to determine if there was any statistical significance of change.

Materials

The MPASS will be used to assign an objective score to a child in an asthma exacerbation. Each of the 5 areas below has a score range of 0 to 3. After the total severity score is obtained the child is risk stratified into a mild, moderate, or severe category.

	0	1	2	3
Oxygenation	> 98% on RA	95% - 97% in RA	90% - 94% on RA	< 90% on RA
Auscultation	No wheezing Normal breath sounds	End expiratory wheezes	Inspiratory and expiratory wheezes	Wheezing audible w/o stethoscope or silent chest
Retractions	No retractions	Intercostal retractions and/or diaphragmatic (belly) breathing	2 of the following: • Intercostal • Suprasternal • Diaphragmatic (belly) breathing • Nasal flaring (infant)	3 of the following: • Subcostal • Intercostal • Substernal • Supraclavicular • Nasal flaring of Headbobbing (infant)
Dyspnea	Absent dyspnea; speaks in complete sentences; alert; playful	Normal activity and speech. Some dyspnea, irritable, coughing after play	Decreased activity 5-8 word sentences. Moderate dyspnea; not sleeping or eating; coughing after play	Not speaking. Severe dyspnea; grunting; lethargic; stops playing
Resp Rate				
Infant (birth - yr)	< 60	60-80	81-99	≥ 100
Toddler (>1-3 yrs)	< 40	40-60	61-79	≥ 80
Preschool (>3-6 yrs)	< 30	30-40	41-59	≥ 60
School Age (>6-12 yrs)	< 20	20-26	27-30	≥ 31
Adolescent (>12-18 yrs)	< 18	18-23	24-27	≥ 28
Severity Scores	0	1-5 MILD	6-10 MODERATE	11-15 SEVERE

The asthma pathway defines treatment categories for the severity of asthma exacerbation obtained by the MPASS. After initial treatment, the patient is reassessed and re-stratified into the appropriate category with a repeat MPASS score that will help determine disposition.



Results/ Conclusion

Results and conclusion currently pending completion of study; currently on hold due to COVID19

Acknowledgements

CDC National Center for Health Statistics, National Health Interview Survey (NHIS). National Surveillance of Asthma: United States, 2001-2017

Moorman JE, Akinbami LJ, Bailey CM, et al. National Surveillance of Asthma: United States, 2001 -2010. National Center for Health Statistics. Vital Health Stat 3 (35). 2012. Asthma Period Prevalence (1980-1996) and Current Asthma Prevalence (2001-2010): United States Percentages were adjusted by age using the 2000 U.S. Census standard population Asthma Attack Prevalence (2001-2010): United States

NHIS Asthma Data Tables:
<https://www.cdc.gov/asthma/nhis/default.htm>
Current Asthma and Asthma Attack Prevalence (2011-2017): United States

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