American College of Emergency Physicians®
ADVANCING EMERGENCY CARE

ACEP 61

Title: Avoidance of Chest X-ray in pediatric patients with Asthma, Bronchiolitis or Croup
Description: Percentage of ED visits for pediatric patients with Asthma, Bronchiolitis or Croup for whom a Chest X-ray was ordered/performed.
Measurement Period: January 1, 2024, through December 31, 2024
Measure Steward: American College of Emergency Physicians (ACEP)
Measure Developer: American College of Emergency Physicians (ACEP)
Measure Scoring: Proportion (Inverse Measure)
Measure Type: Process

Initial Population	All patients less than 18 years of age coming to the Emergency Department with a diagnosis of Asthma, Bronchiolitis or Croup
Denominator	Equals Initial Population
Denominator Exclusions	History of Cystic Fibrosis, Airway Malformations, Immunodeficiency Syndromes, Pneumonia
Numerator	All patients less than 18 years of age with a diagnosis of Asthma, Bronchiolitis or Croup and for whom a chest x-ray was ordered/performed.
Numerator Exclusions	Not Applicable
Denominator Exceptions	None

Stratification: None
Risk Adjustment: None
Improvement Notation: Lower score indicates better quality

Rationale

Bronchiolitis is a self-limiting viral infection causing lower respiratory tract illness, most common in infants under 12 months of age. Advanced imaging is not indicated for routine evaluation or monitoring of bronchiolitis. (1)
Clinical practice guidelines of the American Academy of Pediatrics (AAP), published in 2006 and revised in 2014, recommend against routine radiography in the evaluation of infants with bronchiolitis.(2)
Unnecessary imaging for bronchiolitis contributes to health care costs, radiation exposure, and antibiotic overuse and consequently was identified in 2013 as a national “Choosing Wisely” priority.

1. Watts KD and Goodman DM, Wheezing in Infants: Bronchiolitis, Nelson Textbook of Pediatrics, eds Kliegman RM, Stanton BF, Schor NF, St. Geme JW III, and Behrman RE, 19th edition 2011, pp 1456-1459
2. Ralston SL, Lieberthal AS, Meissner HC, et al; American Academy of Pediatrics. Clinical practice guideline: the diagnosis, management, and prevention of bronchiolitis. Pediatrics. 2014;134(5):e1474-e1502. doi:10.1542/peds.2014-2742

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Clinical Recommendation Statement

National guidelines articulate a reliance on physical examination and patient history for diagnosis of asthma and bronchiolitis in the pediatric population. Multiple studies have established limited clinical utility of chest radiographs for patients with asthma or bronchiolitis. Omission of the use of chest radiography will reduce costs, but not compromise diagnostic accuracy and care.

Definition

None

Guidance

None

References

1. Sai-Wai Ho, MD Ka-Yi Huang, MD, Ying-Hock Teng, MD, PHD, Min-Sho Ku, MD, PHD, and Jeng-Yuan Chiou, PHD. doi.org/10.1016/j.jemermed.2014.12.032
2. Libby Haskell, MN; JAMA Pediatr. doi:10.1001/jamapediatrics.2021.0295, April 12, 2021
3. Brett Burstein, MDCM, PhD, MPH, Amy C. Plint, MD,MSc, Jesse Papenburg, MDCM, MScUse of Radiography in Patients Diagnosed as Having Acute Bronchiolitis in US Emergency Departments, 2007-2015

Disclaimer

These performance measures are not clinical guidelines and do not establish a standard of medical care and have not been tested for all potential applications.

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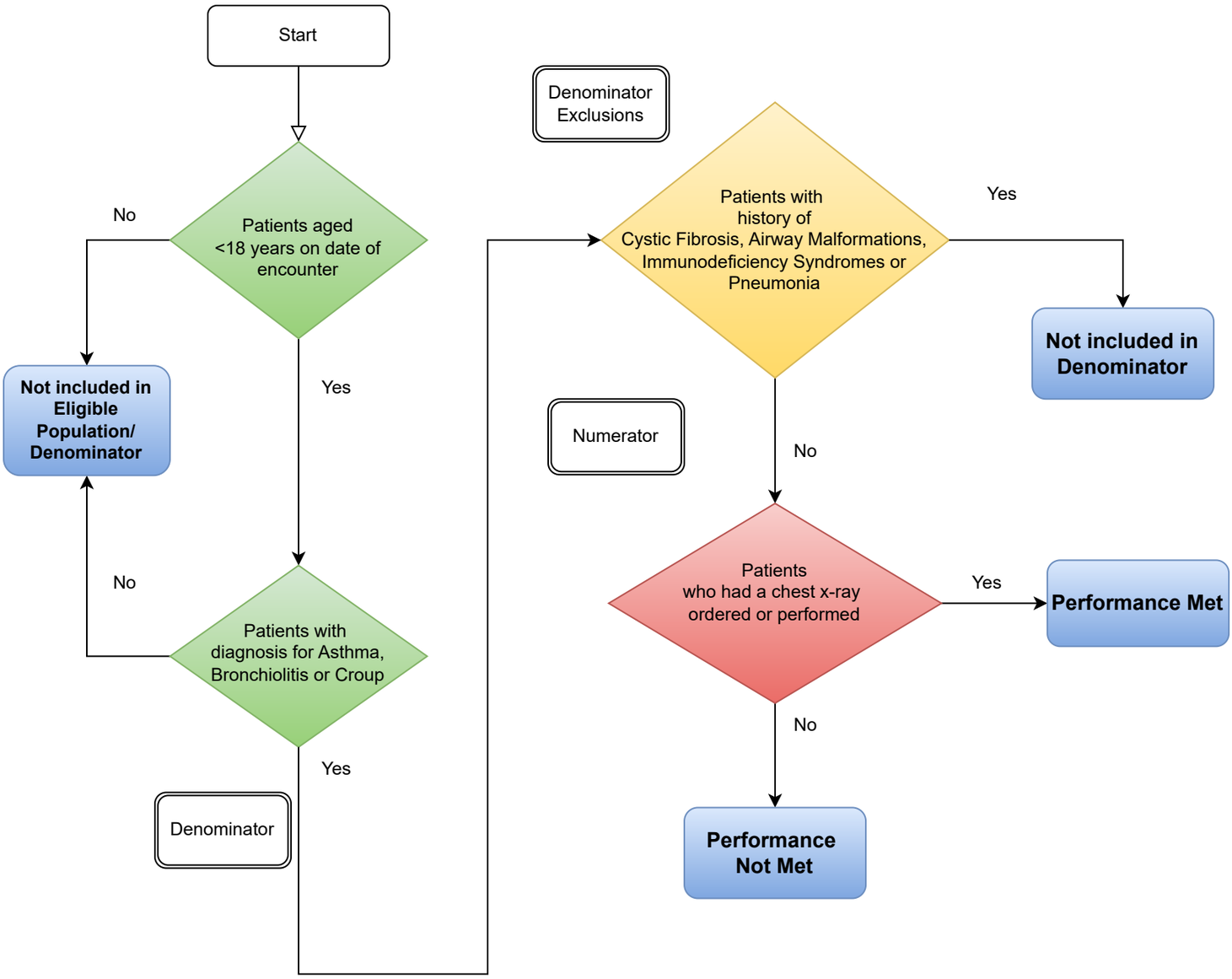
Start
Patients aged <18 years on date of encounter
No
Not included in Eligible Population/ Denominator
Yes
Patients with diagnosis for Asthma, Bronchiolitis or Croup
No
Yes
Denominator
Denominator Exclusions
Patients with history of Cystic Fibrosis, Airway Malformations, Immunodeficiency Syndromes or Pneumonia
Yes
Not included in Denominator
Numerator
No
Patients who had a chest x-ray ordered or performed
Yes
Performance Met
No
Performance Not Met