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Use of Chest X-ray in the Evaluation of Acute Cough in the Pediatric Emergency Department of an Inner-City Hospital

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PUBLISHED ABSTRACT

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ABSTRACT

Background: Cough has been identified as one of the most common complaints at physician visits and accounts for an estimated 29.5 million annual outpatient visits [1]. Acute cough is defined as cough of less than 2 weeks in duration [2]. Current clinical practice guidelines have recommended against routine use of chest x-rays in evaluation of common causes of cough in the emergency department (ED) except in cases with significant respiratory distress or hypoxemia [3–5]. Despite these guidelines, there is still an increased use of chest x-ray in evaluation of children in the pediatric ED. We aimed to determine the prevalence of children presenting with acute cough in the pediatric ED, the proportion of these patients evaluated with chest x-ray, and to review their chest x-ray findings.

Methods: The study was a retrospective cross-sectional study involving patients aged 1 month – 21 years presenting to the pediatric ED of BronxCare Health System with acute cough from January 2019 to December 2019. Data was extracted from the hospital's Electronic Health Record. Frequency tables were used to describe sociodemographic and clinical characteristics, and chest x-ray findings.

Results: Of the 30,014 patients who presented to the pediatric ED during the study period, 3560 (11.9%) had acute cough, of whom 949 (26.7%) had a chest x-ray done. Most of the patients with acute cough (75.6%) had no respiratory distress. Majority of them (68.4%) had fever for 1–14 days, and the most frequent cough duration was 2 days (28.7%). The most common chest x-ray finding was peri-bronchial cuffing (52.6%), while 33% of the chest x-rays were normal (***Table 1***). Most of the patients (70.4%) were discharged home.

Conclusion: A significant proportion of children presenting with acute cough to the pediatric ED routinely have a chest x-ray done as part of their management, findings of which are mostly insignificant and contribute little to their care. We therefore recommend judicious use of chest x-ray and adherence to existing guidelines in cases of acute cough presenting to the pediatric ED.

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KEYWORDS:
Chest x-ray; Acute cough; Pediatrics; Emergency department

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CHEST X-RAY FINDINGS	FREQUENCY (N = 949)	PERCENTAGE (%)
Normal	315	33.2
Peribronchial/perihilar cuffing	499	52.6
Infiltrate/Opacities/Consolidation	123	13.0
Foreign body	3	0.3
Atelectasis	5	0.5
Pneumomediastinum	2	0.2
Questionable subglottic airway narrowing	1	0.1
Basilar calcified granuloma	1	0.1

Table 1 Chest x-ray findings in children presenting to the emergency department with acute cough.

COMPETING INTERESTS

The authors have no competing interests to declare.

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