

Implementation of GINA guidelines in asthma management: a single-center pre- and post-intervention study

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Background: Evidence-based asthma care in the emergency department (ED) requires objective severity assessment, appropriate reliever/controller prescribing, and timely follow-up. This study evaluated whether implementing Global Initiative for Asthma (GINA) guideline-focused education improved asthma management in a single tertiary ED.

Setting: ED, Cleveland Clinic Abu Dhabi, United Arab Emirates.

Methods: We conducted a single-center pre- and post-intervention study over six months. Adults older than 14 years presenting with asthma exacerbation were included; pediatric patients and patients with non-asthma causes of dyspnea were excluded. The baseline period ran from 24 February to 24 April, followed by an intervention period from 25 April to 24 June involving expert-led GINA teaching and team discussions on evidence-based asthma care. Post-intervention outcomes were assessed from 25 June to 24 August. Aggregate metrics included peak expiratory flow (PEF) measurement at triage and after treatment, steroid administration, discharge medication choice, pulmonology follow-up within 48-72 hours, hospital admission, and recurrent exacerbation history. Descriptive statistics and percentage changes were used for analysis.

Results: Implementation was associated with marked improvement across key asthma care indicators. PEF measurement increased by 500%, indicating better objective assessment during ED care. Short-acting beta-agonist-only discharge decreased by 50%, while inhaled corticosteroid/formoterol discharge increased by 150%, reflecting a shift toward guideline-aligned controller-based therapy. Pulmonology follow-up within 48-72 hours improved by 77.78%. Hospital admissions decreased by 33.33%, and the proportion with a history of at least one asthma exacerbation decreased by 16.67%.

Conclusion: A focused GINA guideline implementation program in a single ED was associated with improved asthma assessment, safer discharge prescribing, stronger follow-up adherence, and reduced admissions. Although limited by aggregate data, short follow-up, and the absence of a control group, these findings support structured guideline education as a practical quality improvement approach for emergency asthma care.

Keywords: Asthma, GINA, emergency.

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List of Abbreviations

ACEM	Asian Conference on Emergency Medicine
ED	emergency department
GINA	Global Initiative for Asthma
ICS	inhaled corticosteroid
PEF	peak expiratory flow
SABA	short-acting beta-agonist

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Consent for publication: Not applicable.

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