Why are more children ending up in ICU for asthma?

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Asthma exacerbations remain a significant burden, particularly for younger patients, often necessitating hospitalisation and intensive care. Understanding trends in these severe events provides insight into the effectiveness of current management strategies and potential gaps in care. A recent study examined a decade of ICU admissions for asthma, revealing a concerning shift in pediatric populations.1

KEY TAKEAWAYS

- The Pivot: ICU admissions for asthma in children increased between 2013 and 2022, while remaining stable in adults.
- The Data: Pediatric ICU admissions for asthma rose by 1.5% annually (95% CI, 0.4-2.6; P=.008).
- The Action: Clinicians should re-evaluate current asthma management protocols for children, focusing on early intervention and adherence to prevent severe exacerbations.

Intensive care unit admissions serve as a critical marker of asthma severity, identifying patients at the highest risk for morbidity and mortality. Examining these trends over time offers invaluable insights into population-level shifts in exacerbation severity and the efficacy of management strategies.1

John McCoy, a researcher at the University of Toronto, and colleagues conducted a 10-year population-based study, published in Annals of the American Thoracic Society, to track trends in ICU admissions for asthma.1 The study included all patients admitted to an ICU with a primary diagnosis of asthma exacerbation between 2013 and 2022. They specifically analysed age-stratified trends, comparing pediatric (under 18 years) and adult (18 years and older) populations.1

The Shifting Burden of Severe Asthma

The study found a clear divergence in trends between age groups. Pediatric ICU admissions for asthma increased annually by 1.5% (95% CI, 0.4-2.6; P=.008) over the 10-year period. This rise was consistent across all pediatric age subgroups, indicating a systemic issue rather than an isolated anomaly. In contrast, adult ICU admissions for asthma remained stable, showing no significant change (annual percentage change, 0.1%; 95% CI, -0.6-0.9; P=.75).1

These numbers suggest that while adult asthma management may be holding steady in preventing the most severe outcomes, pediatric care is failing to do so. The reasons for this increase in children are not immediately clear from the data, but they warrant urgent investigation. Factors could include changes in environmental triggers, variations in adherence to controller medications, or shifts in access to timely primary care for acute exacerbations. For a deeper dive into specific triggers, our previous coverage on Alternaria allergy in youth highlighted its link to persistent asthma risk.1

The study did not examine the specific causes behind the observed trends. It also did not differentiate between types of asthma, such as eosinophilic or allergic asthma, which might have distinct management pathways. For instance, the

real-world effectiveness of biologics like dupilumab in severe asthma, as discussed in recent cohort data, could influence these trends, but such details were outside the scope of this population-based analysis. The lack of granular data on medication use or adherence in the study population limits the ability to pinpoint specific interventions that might be failing or succeeding.1

Still, the overall increase in pediatric ICU admissions for asthma is a stark warning. It suggests that current strategies for managing asthma in children are either insufficient or are not being implemented effectively enough to prevent severe exacerbations requiring critical care. This is an area of high importance for clinicians, particularly those in general practice and emergency medicine, who frequently manage acute asthma. A comprehensive reference like the Oxford Handbook of Respiratory Medicine can be invaluable for quick, evidence-based decisions in such scenarios.

The study also did not account for potential changes in diagnostic criteria or admission thresholds for ICUs over the decade, which could theoretically influence reported trends. But, given the stability in adult admissions, a fundamental shift in diagnostic practice seems less likely to explain the pediatric-specific increase. The consistent rise across all pediatric age groups further strengthens the argument that this is a genuine increase in severe pediatric asthma events. This contrasts with some of the discussions around triple therapy in asthma, where real-world evidence supports earlier use, but adherence remains a challenge.1

The trial was not designed to identify specific risk factors or interventions that contributed to the observed trends. It provides a high-level view of a concerning public health issue. Future research needs to drill down into the clinical characteristics of these pediatric patients, their treatment regimens, and the environmental factors at play. Understanding why some patients on biologics still suffer attacks, for example, could offer insights into preventing ICU admissions.1

CLINICAL IMPLICATIONS

The persistent rise in pediatric ICU admissions for asthma demands immediate attention from primary care physicians and specialists alike. It indicates that current asthma action plans and preventative strategies are not consistently preventing severe exacerbations in children, leading to a higher burden on critical care resources.

For clinicians, this means a renewed focus on patient education, adherence to controller medications, and early recognition of worsening asthma in pediatric patients. We must question whether environmental factors are playing a larger role, or if there are systemic failures in accessing timely and effective care for children with asthma.

The pharmaceutical industry, while developing advanced biologics, needs to consider how these therapies are integrated into broader pediatric asthma management. If severe exacerbations are still increasing, the benefits of these newer agents may not be reaching the right patients, or perhaps not early enough.

This trend highlights a critical unmet need in pediatric asthma care. We need more than just new drugs; we need better implementation of existing guidelines and a deeper understanding of the real-world challenges families face in managing this chronic condition.

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REFERENCES

1. 1. McCoy J, To T, Zhu J. Trends in intensive care unit admissions in patients with asthma: A 10-year population-based study. Ann Am Thorac Soc. 2026;42573522.

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