

[Allergy Asthma Proc.](#) 2015 Jul-Aug;36(4):300-5. doi: 10.2500/aap.2015.36.3854. Epub 2015 Apr 27.

The impact of expired and empty quick-relief asthma inhalers: The Asthma and Allergy Foundation of America's Asthma Inhaler Design Survey.

Storms WW¹, Tringale M, Ferro TJ.

Author information

Abstract

BACKGROUND: Despite the available treatments, **asthma** remains a serious illness, with a considerable socioeconomic burden associated with a high number of unscheduled visits to the emergency department (ED). Poor adherence and inadequate inhaler technique are contributing factors to poor **asthma** management and control.

OBJECTIVE: The **Asthma** Inhaler Design Survey assessed the behaviors, attitudes, needs, and preferences of patients with **asthma** and their caregivers with regard to quick-relief inhaler usage and device design.

METHODS: The **Asthma** and Allergy Foundation of America invited 19,157 adult patients and parents of children with **asthma** to take part in an online survey that focused on previous **asthma** diagnosis, symptom severity, and quick-relief and controller medication use. Opinions were also collected.

RESULTS: Data from 590 respondents (366 adults; 224 children) were included in the final analysis. Relief inhalers were needed and found to be past the expiration date by 284 of 561 (50.6%) and relief inhalers were found to be empty by 270 of 560 (48.2%). Of the empty inhaler group, 28 of 270 (10.4%) had to visit the ED for treatment, 18 of 270 (6.7%) missed work or school for an unscheduled physician office visit, and 54 of 270 (20%) went without treatment. Although 78.5% indicated that they had at least two quick-relief inhalers nearby, these were not always easily accessible. Few respondents (194/578 [33.6%]) indicated that they and/or their child were very confident that they were using their inhaler properly, even though the majority had received some instruction. When asked what they would do to improve satisfaction with their quick-relief inhalers, 173 of 558 (31%) responded that they would add a **dose counter**.

CONCLUSION: Unnecessary health care utilization and avoidable loss of time at work or school were associated with the lack of full availability of properly functioning quick-relief inhalers when needed. Adding a **dose counter** was the most frequently cited response for improving satisfaction with quick-relief inhalers. Confidence about proper inhaler use was low, despite previous instruction.

PMID: 25916212 DOI: [10.2500/aap.2015.36.3854](https://doi.org/10.2500/aap.2015.36.3854)

[Indexed for MEDLINE]