those without consisted of 7 VOCs (sensitivity: 79%; specificity: 100%). The nitric oxide fraction and lung function were not predictive for exacerbations.

CONCLUSIONS. VOC profiling from exhaled breath is able to predict exacerbations of childhood asthma.

REVIEWER COMMENTS. This longitudinal study is the first to analyze the ability of VOCs in exhaled breath to predict asthma exacerbations. The result indicates that a combination of 6 or 7 VOCs was able to predict exacerbations of childhood asthma both between and within patients with high sensitivity and specificity. The advantage of VOC analysis in exhaled breath is that sample collection is noninvasive and inflammatory markers are measured simultaneously. However, there was no mention of asthma severity classification. Therefore, it was not possible to explore the role of VOCs in different degrees of asthma severity. Biochemical origin and pathophysiological function of identified compounds in VOCs need to be clarified. In addition, validation studies in a larger population are needed to confirm the optimal combination of VOCs.
Childhood Asthma Hospitalizations in the United States, 2000-2009

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