

# Asthma Tracker

## Asthma Symptom Tracker for improved and personalized Asthma Care

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The Asthma Symptom Tracker (AST) is a web-based application designed to support: (1) Patients with regular self-assessment and monitoring of chronic asthma control outside clinical encounters to prompt early response to deteriorations of asthma control, and (2) Care providers with longitudinal and objective data to assess the effectiveness of asthma therapy and prompt adjustments.

### About Asthma

Asthma is the most common chronic illness in children with a lifetime prevalence of 13.8% in the US. In 2009, an estimated 7.1 million children under age 18 had asthma, 4.1 million had an asthma "attack" during that year, and many others had "hidden" or undiagnosed asthma.

### Background

Chronic asthma control in children remain suboptimal. Poor control leads to frequent asthma exacerbations and increased risks for Emergency Department (ED) and hospital admissions. To reduce the risk of severe asthma exacerbations, ongoing monitoring of patient asthma symptoms and timely adjustment of asthma therapy to maintain and achieve optimal asthma control is essential. Yet, monitoring asthma symptoms outside clinical encounters is challenging due to the healthcare system focus on intermittent acute rather than preventive care. Care providers also lack resources and tools to monitor patients outside clinical encounters.

### Study Goal

The AST will change the way asthma care is delivered - from an approach centered on intermittent acute care and physician visits, to one that uses continuous monitoring of patients' chronic asthma symptoms to facilitate medical decision-making and prevent severe exacerbations. This web-based tool will also allow identification of patient specific patterns of change (cyclical improvements and deteriorations) in asthma control status over time. Dr. Nkoy plans to correlate this information with cyclical spikes in environmental asthma triggers and define a novel way to individualize asthma care where treatment decisions are tailored to patients' specific needs and individual environmental susceptibility.

