



The Power of Two: Case study on combining guidance from the Bree Collaborative's recommendations for addressing pediatric asthma and wildfire smoke to reduce respiratory ED visits during poor air quality events

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### **Background and Setting**

Confluence health is an integrated health care delivery system, serving four counties in North Central Washington. (Confluence Health, 2025) The system includes Central Washington hospital and multiple outpatient health clinics and services. (Confluence Health, 2025)

Confluence has participated in many work groups conducted by the Bree Collaborative to develop guidelines for best practices for multiple health care topics. In 2024, Dr. Bindu Nayak, an endocrinologist at Confluence, began participating in the Bree Health Equity Action Collaborative with the aim of improving pediatric asthma care within their system.

### **Key activities/key components**

Confluence implemented an improvement project to use Bree recommendations to support providers in increasing the number of pediatric patients with asthma care plans. They shared information with their primary care clinics on the use of asthma action plans for children with asthma. They had good uptake of the care plan improvement project at the Wenatchee Pediatrics Clinic.

They also implemented a project to address the impacts of extreme heat and wildfire smoke, using Bree recommendations and paper forms for a wildfire smoke action plan that was created by Dr. Mary Crocker, pediatric pulmonologist with Seattle Children's and UW. The two pediatricians who fill out asthma action plans at the Wenatchee Pediatric clinic were also giving wildfire smoke action plans on paper.

Confluence is able to track which children had an asthma action plan in place, in the electronic health record, since it is a fillable form that is captured in the patients record. They compared patients at the Wenatchee Pediatric Clinic who had an asthma action plan to those that did not.

Between September 1<sup>st</sup> and September 14<sup>th</sup> Confluence observed ED and OP visit rates for pediatric asthma patients at their clinics during a period of moderately poor air quality due to wildfire smoke.

### **Equity**

Participation in the Bree Health Equity Action Collaborative supported Confluence's efforts to forward their implementation work and provided them with an action plan. One of the goals of the goals of this project was to reduce disparities between Hispanic and non-Hispanic pediatric patients in addition to reducing the need for ER visits for all children with Asthma.

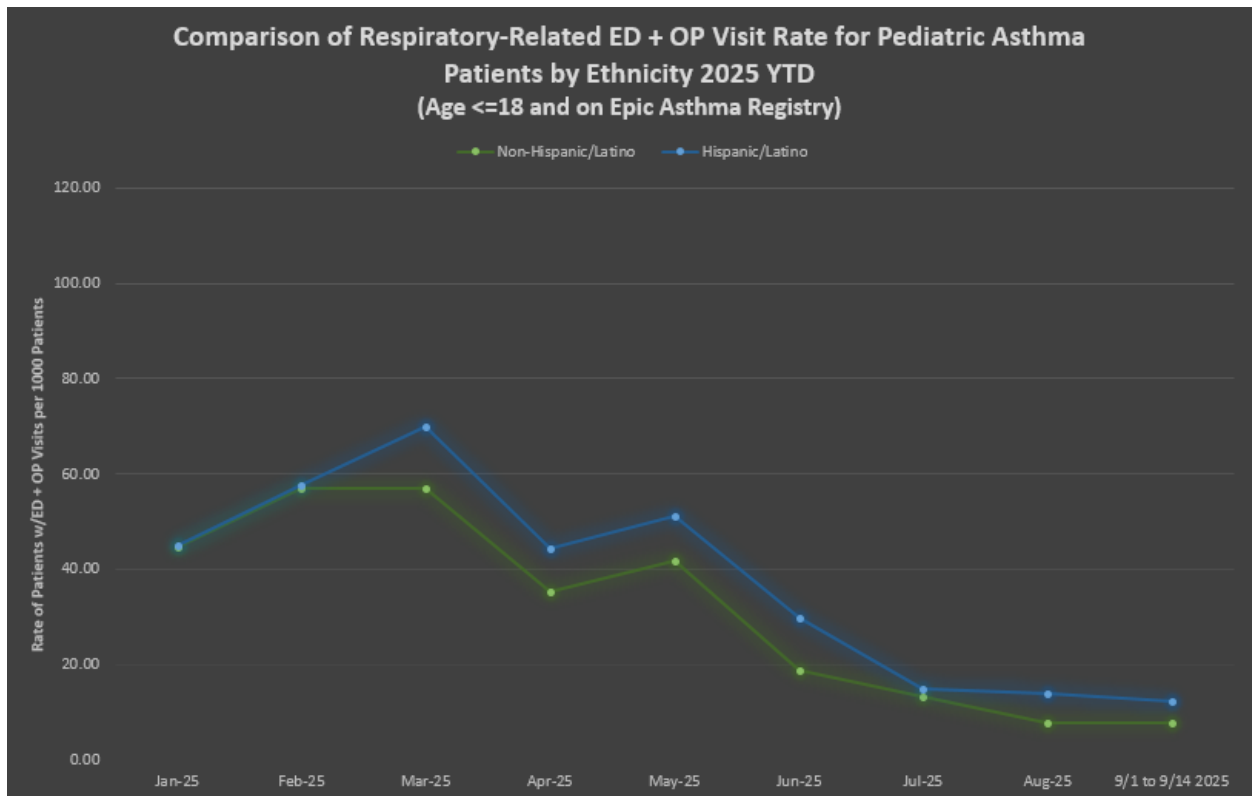


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### Findings

Confluence has been able to reduce disparities between Hispanic and non-Hispanic patients for emergency and outpatient visits related to respiratory issues.

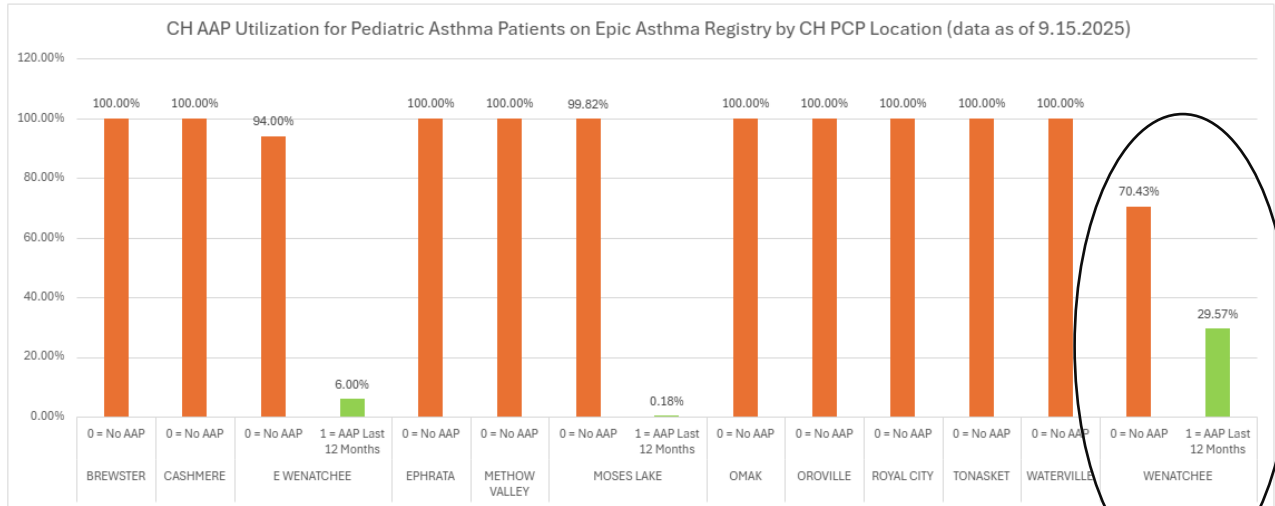
Since they began implementing their asthma care plan improvement project, they have also observed a reduction in the rate of respiratory and emergency related visits.



Uptake for the asthma action plan project was greatest in the East Wenatchee and Wenatchee Clinics, with Wenatchee experiencing a 29.5% increase in patients with a documented Asthma care plan.

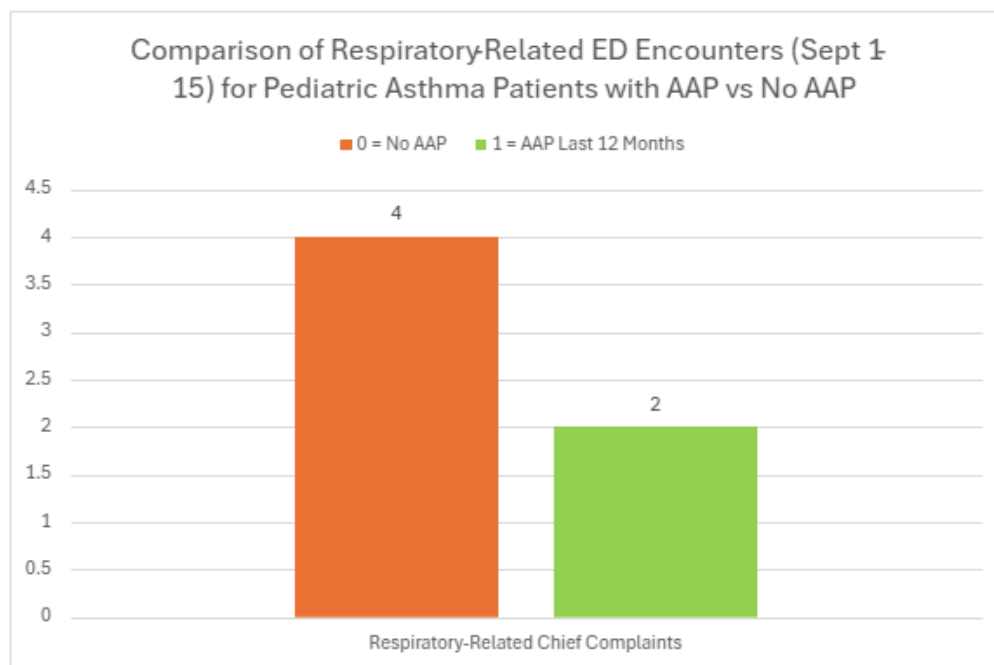


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The episode of increased wildfire smoke and poor air quality, which started on Sunday, August 30, 2025, and continued through September 15<sup>th</sup>, 2025, provided an opportunity to observe any changes to emergency department service, comparing those with and without a documented care plan.

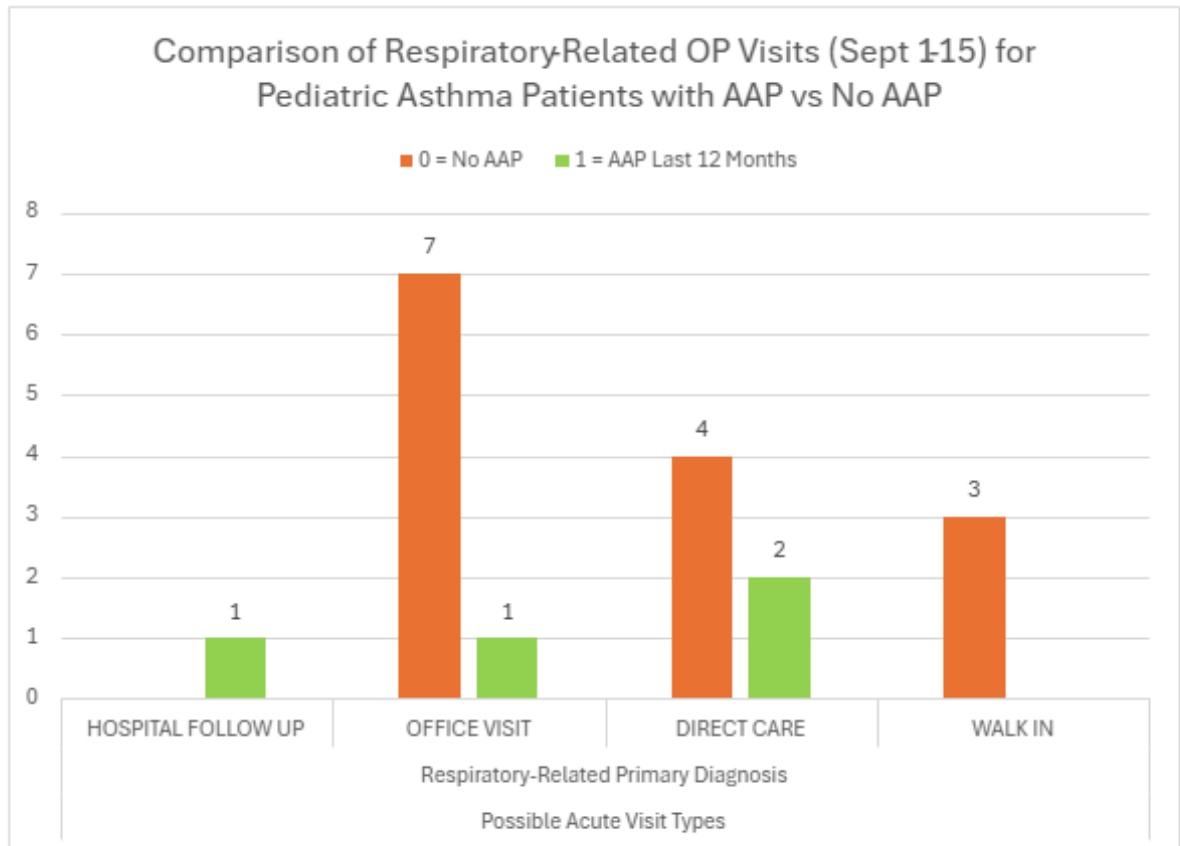
During this time, Confluence saw 50% fewer respiratory related emergency department visits among children with asthma who had an asthma action plan compared to children with asthma who did not.





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They also observed a 71% decrease in outpatient visits among children with asthma for those who had an asthma action plan in place compared to children with asthma who did not.

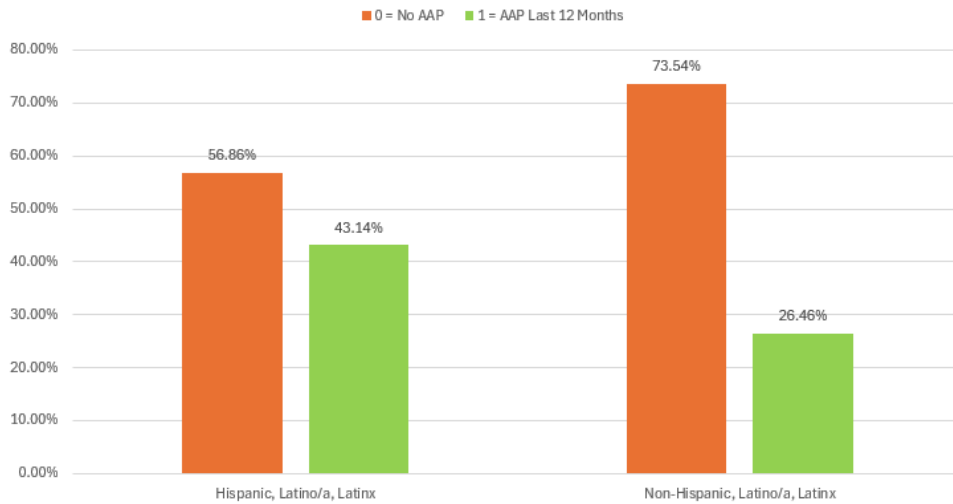


In support of one of their goals, they observed a large reduction for both Hispanic and non-Hispanic patients.



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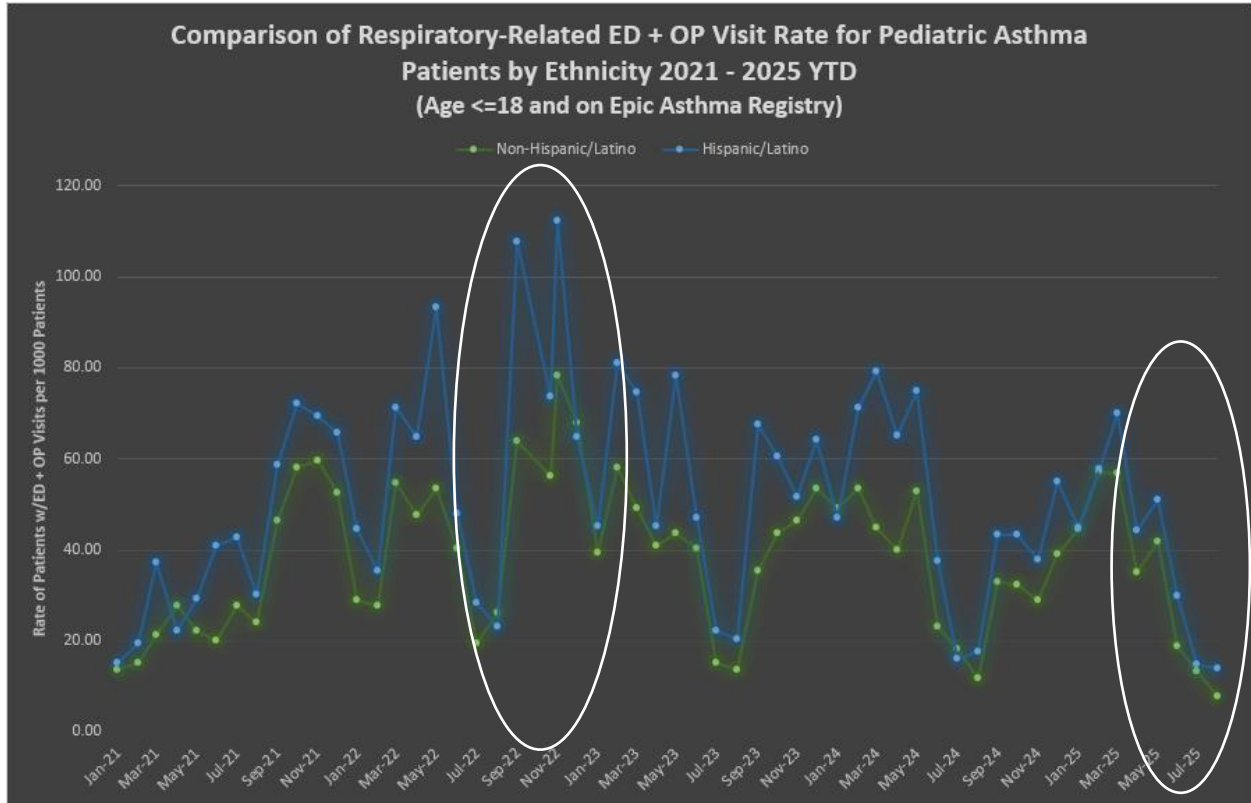
Wen Peds AAP Utilization for Pediatric Asthma Patients on Epic Asthma Registry by Ethnicity (data as of 9.15.2025)



Among both Hispanic and non-Hispanic children, a substantial decrease in emergency and outpatient visits for respiratory concerns was observed at Confluence Health for the 2025 smoke event in comparison to the 2022 wildfire smoke episode prior to implementing either the asthma action plan project or the wildfire smoke action plan project.



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### Limitations

This study had several limitations. Notably, it had small numbers which limit the ability to provide a robust statistical analysis. The study included two providers from a single clinic, affecting the generalizability.

### Conclusions and Next steps

These are encouraging trends, for both overall reduction in rates of emergency department visits and for the reduction in disparities associated with the implementation of an asthma action plan and wildfire smoke action plan, and the observed association is larger than expected.