

Making the economic case for intensive asthma home visiting

April 2023

Vermont is often held as one of the healthiest states in the nation; however, Vermont is among the top ten states for asthma rates in the United States. The Rutland Regional Medical Center, with the support of the Vermont Asthma Program, built on its strong community relationships to implement the Intensive Asthma Care Program. Between 2015 and 2019 the program received 184 referrals from asthma families, local clinics and providers, and through emergency department and hospitalization discharge protocols. Of this total, 103 asthma patients completed intake into the program. This analysis is focused on the 77 pediatric patients in this sample.

Home visiting for trigger identification and elimination with AS-ME

Home Visiting for trigger identification and elimination with Asthma Self-Management Education (AS-ME) is conducted by a certified asthma educator to deliver the program and to supervise/support a community health worker to conduct the home visits. Three visits are conducted, with home trigger identification, supplies and support in trigger elimination, together with asthma control education, skill checks and health coaching throughout to ensure best health outcomes.

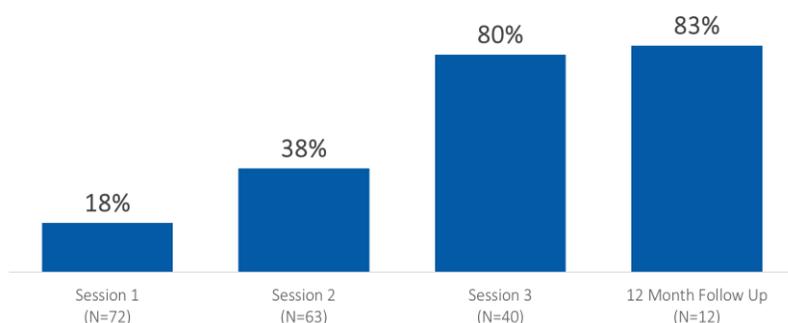
Multiple activities are performed during each of the three home visiting sessions

- 1 Baseline asthma control assessment, environmental assessment, asthma education (basics, medication), and asthma action plan
- 2 Follow-up asthma control assessment, assess learning from first visit, skills reinforcement, asthma education (triggers, management), and deliver supplies for environmental assessment findings
- 3 Follow-up asthma control assessment, assess learning and use of supplies provided, assess proper device use, asthma control assessment, referrals (802Quits, etc.)

We have **completely changed our cleaning routines** and gone to natural ingredients and cleaners. This program made us more confident and informed in managing, treating, understanding and helping asthma flare ups. **Our daughter's health has improved tremendously, and our stress levels have decreased.**

-- Parent of Pediatric Patient

Participants who finished more sessions were more likely to achieve controlled asthma



The sample of individuals with a 12-month follow-up show a high percentage of asthma control. The absolute change of controlled asthma status was 59% (18% to 83%).



Reduces Unwanted and Costly Events



Average days of activity limitation in the past year

Baseline: 5.5 days
12-month follow-up: 1 day



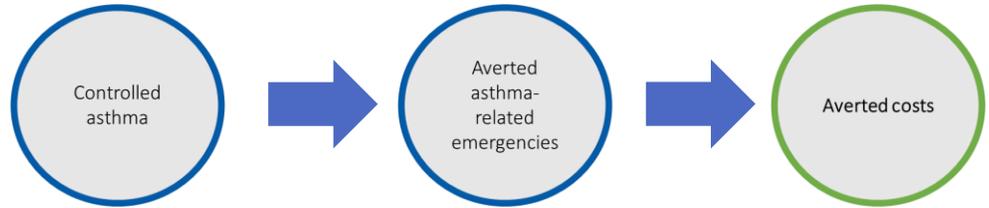
Average missed days of school in the past year

Baseline: 5.9 days
12-month follow-up: 1.5 days

Research/evidence-based assumption:

With controlled asthma there will be reduced or no reliance on emergency department (ED) or in-patient (IP) visits for asthma.

Assumptions/model for cost study



Total Averted Charges



Total averted charges, ED and IP, were included. Urgent care visit costs are important to consider but not available for this study.

Average averted charges for participants who completed three sessions.



Total average per participant averted costs were \$654 (for those who completed three sessions). Average per participant program investment was \$499.

✓ **Urgent Care visit costs** were not available. The numbers reported in this study therefore may be an underestimate of costs.

✓ There are **quality-of-life** benefits related to controlled asthma, such as fewer missed days of school. These are not included in the current business case analysis.

✓ Asthma prevalence and morbidity are disproportionately burdensome to some groups of people, including those below the federal poverty line and for racial minorities.

✓ The **timespan** of reported asthma control and associated cost estimate of averted charges differed by participant but on average was 56 days (not an entire year).

✓ Some **follow-up data** was collected but not enough to include in this analysis. The importance of follow-up data collection should be a consideration in future studies for additional savings potentially resulting from sustained asthma control. These cost savings result from averted emergency events due to sustained asthma control from one to 12 months.