

# Asthma: School-Based Self-Management Interventions for Children and Adolescents with Asthma

## Summary Evidence Tables - Economic Systematic Review

This table outlines information from the studies included in the Community Guide economic review of School-Based Self-Management Interventions for Children and Adolescents with Asthma. It details study design and economic analysis, population and intervention characteristics, and economic outcomes considered in this review. Complete references for each study can be found in the Included Studies section of the [review summary](https://www.thecommunityguide.org/finding/asthma-school-based-self-management-interventions-children-and-adolescents-asthma). [https://www.thecommunityguide.org/finding/asthma-school-based-self-management-interventions-children-and-adolescents-asthma]

### Abbreviations Used in This Document:

- Study design:
  - RCT: randomized controlled trial
- Measurement terms:
  - DiD: difference in difference
  - Pct pt: percentage point
- Other terms:
  - ED: emergency department
  - NA, not applicable
  - NR: not reported
  - SES: socioeconomic status
  - OLS: Ordinary least squares

### Notes:

**Quality** of economic estimates – Studies are assessed to be of good, fair, or limited quality. This valuation is based on two domains: [Quality of Capture](https://www.thecommunityguide.org/about/glossary#quality-based-on-capture) [https://www.thecommunityguide.org/about/glossary#quality-based-on-capture], and [Quality of Measurement](https://www.thecommunityguide.org/about/glossary#quality-based-on-measure) [https://www.thecommunityguide.org/about/glossary#quality-based-on-measure].

**Race/ethnicity** of the study population: The Community Guide only summarizes race/ethnicity for studies conducted in the United States.

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
<p><b>Author (Year):</b> Atherly et al. (2009)</p> <p><b>Design:</b> Model from RCT</p> <p><b>Economic Method:</b> Intervention and healthcare cost</p> <p><b>Funding Source:</b> None</p> <p><b>Monetary Conversions:</b> Index year assumed 2003 in U.S. dollars</p>	<p><b>Location:</b> Kansas City, Kansas Stafford-Fredericksburg, Virginia, USA</p> <p><b>Setting:</b> Middle and high schools</p> <p><b>Eligibility:</b> Screening and selection not described. Students from 8 middle and 2 high schools.</p> <p><b>Sample Size:</b> Intervention 225 Control 233</p> <p><b>Characteristics:</b> Mean Age: 13.9 y Females: 46.6% Urban: 100% Percent with symptoms at baseline: 30.8% Days with symptoms per 2 weeks for those with symptoms: 3.05</p> <p><b>Time Horizon:</b> School year: 2003-2004 Intervention: length NR</p>	<p><b>Intervention Name:</b> Power Breathing</p> <p><b>Intervention:</b> Three educational 90-minute sessions about asthma, control strategies, and psychological concerns. Causes such as irritants are discussed along with avoidance. Control strategies include management plan with peak flow monitoring, discussion of medication classes, and appropriate use. Coping strategies address concerns, fears, barriers, and communication with caregivers and providers. Also asks students to highlight personal aspirations and goals. Staffed with school nurses, teachers, program facilitator.</p> <p><b>Intervention components:</b> Asthma knowledge, asthma control and avoidance of irritants, medication and proper use.</p> <p><b>Comparison:</b> Usual care</p>	<p>Measured at 3-month follow-up with intervention length not reported.</p> <p><b>Symptom days over 2 weeks</b> OLS with baseline symptoms-intervention interaction showed reduction by more than half of baseline days of symptoms for those in intervention group.</p> <p>Study states number of school days missed was reduced, but no estimate was provided. Study states quality of life and asthma knowledge improved but estimate was not reported.</p> <p><b>Data Source:</b> Self-report surveys</p> <p><b>Measure Type:</b> DiD</p>	<p><b>Intervention cost:</b> Total cost: \$6,500 \$30.37 per student per year</p> <p><b>Components Included:</b> Labor costs, program materials, facility cost.</p> <p><b>Source and Valuation:</b> Trial records of resources and time use</p> <p><b>Quality: Good</b></p>	<p><b>Healthcare cost:</b> No difference in healthcare cost</p> <p><b>Components Included in Healthcare Cost:</b> ED, inpatient, outpatient, medication, peak flow meters</p> <p><b>Source and Valuation:</b> Self-report surveys</p> <p><b>Measure Type:</b> DiD</p> <p><b>Quality: Good</b></p> <p><b>Change in Mean Productivity:</b> Parent time not monetized</p> <p><b>Quality: NA</b></p>	<p>Return on investment: -1</p> <p>Cost per asthma-free day: \$3.90</p> <p><b>Quality: Good</b></p> <p><b>Limitations:</b> Short follow-up</p> <p>Only benefits considered are healthcare costs averted.</p>

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
<p><b>Author (Year):</b> Butz et al. (2005)</p> <p><b>Design:</b> RCT</p> <p><b>Economic Method:</b> Intervention cost</p> <p><b>Funding Source:</b> National Institute of Nursing Research</p> <p><b>Monetary Conversions:</b> Index year assumed 2004 in U.S. dollars</p>	<p><b>Location:</b> Seven counties in Maryland, USA</p> <p><b>Setting:</b> Elementary schools, local libraries, school for parent education; after school hours</p> <p><b>Eligibility:</b> Children ages 6-12 years who are living with asthma diagnosis (symptoms for at least 12 months), currently taking medications, and waking at night (for at least one month), and who do not have pulmonary co-morbidities. Children were recruited through letters to parents.</p> <p><b>Sample Size:</b> Intervention: 112 Control: 89</p> <p><b>Characteristics:</b> Mean Age: 8.02 y Females: 33.8% White: 58.5% African American: 34.6% Hispanic: 3.1% Other: 3.8%</p>	<p><b>Intervention:</b> After school educational intervention targeting rural students and parents or caregivers delivered by asthma educators.</p> <p>Intervention staffed with community health workers (asthma educators) and a research nurse.</p> <p><u>Parent education</u> One, 1-hour session that included early warnings of exacerbation, levels of severity, avoidance or rural environment exposures such as from farming activities, types of medications, asthma action plan, cue cards for provider communication, and demonstration of correct use of peak flow meter and metered inhaler with spacer. Participants also received a quarterly newsletter, and a list of allergy test and smoking cessation resources.</p> <p><u>Student sessions</u> Two, 2-hour, interactive sessions taught by asthma educator. Content</p>	<p>Recorded end of 10-month study</p> <p>No significant difference in counts of ED, inpatient, or specialty visits</p> <p>Caregiver asthma knowledge improved, self-efficacy and quality of life not significantly different. Child self-efficacy improved.</p> <p><b>Source:</b> Self-report questionnaire</p> <p><b>Measure Type:</b> DiD</p>	<p><b>Intervention cost per student per year:</b> \$95</p> <p><b>Components included in intervention cost:</b> Labor of research nurse and community health worker; travel costs</p> <p><b>Source and Valuation:</b> Trial records of time and wages.</p> <p><b>Quality:</b> Fair</p>	<p><b>Healthcare cost</b> Not monetized</p>	<p>No summary economic measures</p> <p><b>Limitations:</b> Healthcare utilization not monetized. However, the study notes there was no difference in counts of healthcare utilization.</p> <p>No estimates provided for effects on school days missed or parent time.</p>

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
	<p>Parents less than high school education: 9.3% Annual household income less than \$10,000: 10% Mothers employed: 80% Rural: 100%</p> <p><b>Time Horizon:</b> Study over 1 academic year 10 months. Recruited August 2001 to August 2003.</p>	<p>included anatomy of asthma, types of medications (e.g. reliever and controller), warning signs, correct use of peak flow meters and metered inhaler, rural and home environmental exposures, description of asthma action plan, demonstration of correct device use. Materials (written at a 2-3 grade level) included coloring book, peak flow meter, and spacer device.</p> <p><b>Comparison:</b> Usual care with quarterly newsletters</p>				
<p><b>Author (Year):</b> Horner et al. (2016)</p> <p><b>Design:</b> RCT</p> <p><b>Economic Method:</b> Intervention cost</p> <p><b>Funding Source:</b> National Institute of Nursing Research, National Heart, Lung, and Blood Institute</p>	<p><b>Location:</b> Five school districts in Texas, USA</p> <p><b>Setting:</b> Elementary schools; asthma day camp</p> <p><b>Eligibility:</b> Students in grades 2-5 with diagnosed asthma in rural areas. Must have had asthma symptoms for at least 12 months and no significant comorbidity. Invited</p>	<p><b>Intervention:</b> Two study arms in intervention: (1) in school, and (2) asthma day camp.</p> <p>In school arm was delivered by teachers over five week period (16 sessions, each 15-minutes long and held during lunch break). Day camp arm was delivered by a program coordinator on one day; a registered nurse was added per regulations.</p>	<p>Effects measured over 12 months</p> <p>Outpatient visits reduced for in school students more than day camp or control group students. ED reduced significantly for day camp students. Inpatient stays decreased for in school and day camp but not significantly. Asthma severity</p>	<p><b>Cost per student per year:</b></p> <p>In school: \$130.50</p> <p>Day Camp: \$142.75</p> <p>Control: \$128.50</p> <p><b>Components Included in Intervention Cost:</b> Teachers' and coordinator's time. Teaching</p>	<p><b>Healthcare cost</b> Not monetized</p>	<p>No summary economic measures</p> <p><b>Limitations:</b> Healthcare utilization not monetized.</p> <p>No estimates provided for effects on school days missed or parent time.</p>

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
<p><b>Monetary Conversions:</b> Index year assumed 2014 in U.S. dollars</p>	<p>to participate through letter signed by school nurse. Project coordinator contacted family to schedule home visit to obtain assent.</p> <p>Two high and nine low SES schools randomly assigned to three arms.</p> <p><b>Sample Size:</b> In school: 84 Day camp: 89 Control: 84</p> <p><b>Characteristics:</b> Mean Age In school: 8.83 y Day camp: 8.82 y Female In school: 44.6% Day camp: 38.5% Race and Ethnicity In school: White: 22.9% Hispanic: 55.2% African American: 21.9% Day camp: White: 23.9% Hispanic: 60.9% African American: 15.2% Rural: 100%</p> <p><b>Time Horizon:</b></p>	<p>An asthma 7-step curriculum was developed for students in rural areas. Program includes lung function; asthma symptoms and triggers; and skills to manage symptoms, including peak flow score interpretation, communication with providers, medication and inhaler use, evaluation and management of symptoms, and safe physical activity and sports. In school format relied on handouts and vignettes to improve problem-solving and decisions. Day camp used same handouts but stressed group work and game-like learning activities.</p> <p>Materials were workbooks, supplies, peak flow meter, asthma action plan.</p> <p><b>Comparison:</b> Attention control and general health education.</p>	<p>declined for in school students. No change reported in medication adherence. Improved management by parents for day camp but effect was not significant.</p> <p><b>Source:</b> Self-reported by parents</p> <p><b>Measure Type:</b> DiD</p>	<p>and activity materials, and peak flow meters. Added nurse and food at day camp.</p> <p><b>Data Source:</b> Trial records</p> <p><b>Quality:</b> Good</p>		

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
	Intervention length: 5 weeks Day camp: 1 day Study dates not reported.					
<p><b>Author (Year):</b> Joseph et al. (2007)</p> <p><b>Design:</b> RCT</p> <p><b>Economic Method:</b> Intervention cost</p> <p><b>Funding Source:</b> None</p> <p><b>Monetary Conversions:</b> Index year assumed 2005 in US dollars</p>	<p><b>Location:</b> Detroit, Michigan, USA</p> <p><b>Setting:</b> High schools</p> <p><b>Eligibility:</b> Participants drawn from screening survey of students in grades 9-11 in six public high schools. Students were eligible for intervention if they had an asthma diagnosis along with symptoms, asthma medication use, or asthma care in the previous 30 days, OR if they had no diagnosis but experienced symptoms of mild asthma.</p> <p><b>Sample Size:</b> Intervention: 162 Control: 152</p> <p><b>Characteristics:</b> Mean Age: 15.3 y; Female: 63.4%;</p>	<p><b>Intervention Name:</b> Puff City</p> <p><b>Intervention:</b> Staffed by referral coordinator, with mean contact time of 31 minutes.</p> <p>The tailored, web-based Puff City application was delivered on school computers. Students completed four sessions over 180 days. Data was transferred to study center daily. The program addressed three behaviors: medication adherence, rescue inhaler carrying behavior, smoking cessation. Consecutive computer sessions were tailored based on baseline data collected from student input. Parents and caregivers received a letter describing availability of referral coordinator to help get physician visits or medications. Referral coordinator used risk</p>	<p>Effects measured at 12 months</p> <p><b>School days missed during previous 30 days:</b> 0.4 for intervention and 1.2 for control</p> <p><b>Symptom free days in last 2 weeks:</b> 2.1 for intervention and 2.8 for control</p> <p><b>Adherence (used controller medication on 5 or more days within the previous 7 days):</b> Maintained or improved adherence in 20.4% for intervention and 12.6% for control. Adherence worsened in 17.1% for intervention and 23.8% for control.</p> <p><b>Rescue inhaler carrying behavior (carrying rescue</b></p>	<p><b>Intervention cost:</b> \$6.66 per student</p> <p><b>Components Included in Intervention Cost:</b> Salary of referral coordinator</p> <p><b>Data Source:</b> Coordinator’s contact log and salary data.</p> <p><b>Quality:</b> Fair</p>	<p><b>Healthcare cost:</b> NR</p>	<p>No economic summary measures</p> <p><b>Limitations:</b> Healthcare utilization not monetized</p>

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
	<p>African American: 98.6%                      Mean of 52% of students in the 6 schools qualified for subsidized lunch                      Medicaid: 49%                      Urban: 100%</p> <p><b>Time Horizon:</b>                      Sessions to be completed over 180 days. Participants were followed for 12 months. Study dates were not reported.</p>	<p>assessment report from key questions in survey to proactively contact students.</p> <p><b>Comparison:</b>                      Usual care -- students were directed to generic asthma education websites and given referrals to providers.</p>	<p><b>inhaler during 5 of the previous 7 days):</b>                      Maintained or improved rescue inhaler carrying behavior in 38.8% for intervention and 32.2% for control. Rescue inhaler carrying behavior worsened in 12.5% for intervention and 24.5% for control.</p> <p><b>Healthcare utilization past 12 months:</b>                      ED visits: 0.5 for intervention and 0.8 for control                      Inpatient: 0.2 for intervention and 0.6 for control</p> <p><b>12-month Quality of Life Score:</b>                      5.3 for intervention and 5.0 for control</p> <p><b>Data Source:</b>                      Post only, self-reports from survey</p>			
<p><b>Author (Year):</b>                      Liptzin et al. (2016)</p> <p><b>Design:</b></p>	<p><b>Location:</b>                      Denver, Colorado, USA</p> <p><b>Setting:</b></p>	<p>Step-up Asthma</p> <p>School nurse is link from school to rest of team. Program delivered by</p>	<p>Knowledge about inhaler technique increased 2.76 points</p>	<p><b>Intervention Cost:</b>                      NR</p>	<p><b>Total healthcare cost savings:</b>                      \$46,000</p>	<p>No summary economic outcomes</p> <p><b>Limitations:</b></p>

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
<p>Pre to post</p> <p><b>Method:</b> Healthcare cost</p> <p><b>Funding Source:</b> Colorado Department of Public Health and Department of Environment</p> <p><b>Monetary Conversions:</b> Index year assumed 2011 in US dollars</p>	<p>Elementary and middle schools</p> <p><b>Eligibility:</b> Schools selected for low SES based on school lunch eligibility, minority representation, and asthma prevalence. Students recruited through referrals, flyers, back to school nights, and nurse letters to parents, and during registration.</p> <p><b>Sample Size:</b> Intervention: 252</p> <p><b>Characteristics</b> Mean Age: NR Female: 42% African American: 32% Hispanic or Latino: 53% White: 5.5% Other: 9.5% Medicaid 59%, Children’s Health Insurance: 5% Private insurance: 26% Uninsured: 6% Urban: 100% Asthma Score (where 5 is</p>	<p>three trained lay asthma counselors, each covering five schools with 75 to 100 children assigned to each counselor. Medical advisory panel of pediatricians and asthma specialists provided oversight.</p> <p>Asthma education and care coordination based on Inner City Asthma Model. Seven main components: case identification; asthma risk assessment; asthma control tests with feedback to students, parents, and providers; care coordination involving student, school nurse, family, and provider; self-management skills; asthma education curriculum; asthma education for school and ancillary staff; safety net provision of controller medication.</p> <p>Minimum of four sessions for care coordination provided in addition to the education sessions. Communications occurred with family and physicians, as needed.</p>	<p>Open Airways for School score that measures self-management skills and recognizing asthma triggers increased 7.11 points, which is favorable.</p> <p>Kickin' Asthma score that measures severity, healthcare utilization and symptoms decreased 2.97 points, which is favorable</p> <p>Asthma exacerbations requiring steroid bursts reduced from 0.22 to 0.01 (geometric mean)</p> <p>ED or urgent visits reduced from 0.45 to 0.1 School days missed reduced 1.25 to 0.9</p> <p><b>Source:</b> Approximated from Figure in study. Based in self-report questionnaire.</p> <p><b>Measure Type:</b> Pre to post</p>		<p><b>Change in healthcare cost per student per year:</b> Reduced \$182.54</p> <p><b>Components Included in Healthcare Cost:</b> ED</p> <p><b>Source and Valuation:</b> Self-reported 46 ED visits averted at \$1000 per visit.</p> <p><b>Measure Type:</b> Pre to post</p> <p><b>Quality of Capture:</b> Fair</p> <p><b>Quality of Measurement:</b> Fair</p> <p><b>Change in Mean Productivity:</b> NR</p>	<p>Healthcare cost based on ED visits only</p> <p>No control group</p> <p>Benefits from asthma-free days not monetized</p>

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
	<p>uncontrolled asthma): 5: 35% 4: 8% 3: 56%</p> <p><b>Time Horizon:</b> Intervention is 12 months. Piloted 2010-2011 and followed up 2011-2012.</p>	<p>Physicians of enrolled students received a letter informing them about the program and requesting a school asthma action plan. Students received assistance locating a provider and accessing medications. Lack of asthma control prompted additional steps to improve control.</p> <p>Six group education and self-management sessions for grades 3-5 and four group education sessions for grades 6-8. Students received tool kits with peak flow meters, inhaler holding chamber, and instructions.</p> <p><b>Comparison:</b> None</p>				
<p><b>Author (Year):</b> Mosnaim et al. (2011)</p> <p><b>Design:</b> RCT</p> <p><b>Economic Method:</b> Intervention cost</p>	<p><b>Location:</b> Chicago, Illinois, USA</p> <p><b>Setting:</b> Mixed elementary and middle schools</p> <p><b>Eligibility:</b> Participants were from 26 Chicago area schools in which 70% or more</p>	<p>Fight Asthma Now (FAN)</p> <p>Program delivered by four FAN educators from Respiratory Health Association of Metropolitan Chicago plus Americorp volunteers who were college-educated with no prior healthcare or asthma training.</p>	<p>Asthma knowledge and spacer knowledge regression adjusted differences for intervention versus control.</p> <p>Asthma Knowledge: Youth 2.14 points higher (baseline 11)</p>	<p><b>Intervention cost:</b> \$38.93 per child over four sessions</p> <p><b>Components Included in Intervention Cost:</b></p>	<p><b>Change in healthcare cost:</b> NR</p> <p><b>Change in Mean Productivity:</b> NR</p>	<p>No economic summary measures</p> <p><b>Limitations:</b> No averted healthcare cost</p> <p>No averted asthma days</p>

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
<p><b>Funding Source:</b> Abbott Laboratories</p> <p><b>Monetary Conversions:</b> Index year assumed 2009 in U.S. dollars.</p>	<p>of the students were eligible for subsidized school lunch. Participants were selected from those who had ever received an asthma diagnosis from a physician.</p> <p><b>Sample Size:</b> FAN Youth Intervention: 271 Control: 69 FAN Teen Intervention: 141 Control: 51</p> <p><b>Characteristics:</b> <b>Youth</b> Median Age: 10 y Female: 41.5% African American: 65.5% Hispanic: 11.6% Other: 22.3% Urban: 100% <b>Teen</b> Median Age: 13 y Female: 48.2% African American: 62.7% Hispanic: 7.1% Other: 7.1% Urban: 100%</p> <p><b>Time Horizon:</b> Recruitment during September 2007 and August 2008.</p>	<p>Volunteers underwent Certified Asthma Educator-led 1-day training with three hours about asthma knowledge and four hours about delivery of the FAN curriculum and how to administer knowledge and spacer tests. Training supervised by FAN trainer who accompanied educators to each school and provided feedback.</p> <p>Program included four 45-minute education sessions in school on consecutive days.</p> <p>Content included: asthma knowledge, triggers and avoidance, self-monitoring with peak flow meters and asthma action plan, appropriate medication use, warnings of exacerbations, tobacco use, and social and peer pressures, and self-management.</p> <p><b>Comparison:</b> Usual care</p>	<p>Teen 0.85 points higher? (baseline 11)</p> <p>Spacer Knowledge: Youth 3.77 points higher (baseline 0)</p> <p>Teen 3.94 points higher (baseline 0)</p> <p><b>Data Source:</b> Written test for asthma knowledge and observations for spacer knowledge</p> <p><b>Measure Type:</b> DiD</p>	<p>Supplies, materials, staff time</p> <p><b>Data Source:</b> NR. Presumed to be study records.</p> <p><b>Quality:</b> Good</p>		

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
	Intervention length and follow-up not reported.					
<p><b>Author (Year):</b> Otim et al. (2015)</p> <p><b>Design:</b> Post Only</p> <p><b>Economic Method:</b> Intervention cost</p> <p><b>Funding Source:</b> Poche Center of Indigenous Health, Sydney Medical School, University of Sydney</p> <p><b>Monetary Conversions:</b> Index year assumed 2013 in Australian dollars</p>	<p><b>Location:</b> Sydney, Australia</p> <p><b>Setting:</b> Five high schools</p> <p><b>Eligibility:</b> NR</p> <p><b>Sample Size:</b> 825 students</p> <p><b>Baseline Characteristics:</b> Schools had 10-20% aboriginal and Torres Strait Islander students. Mean Age: 11.5 Urban: 100%</p> <p><b>Time Horizon:</b> Study examined intervention cost for one year. Dates not provided.</p>	<p>Adolescent Asthma Action (Triple A)</p> <p>Peer-led school-based program to improve asthma self-management and prevent smoking uptake. Program delivered by 20 university student educators per school, 20 school peer educators per school, one university project officer, one Aboriginal Education Officer, and 20 student educators (age 15-16) per school. Four facilitators trained 20 university students during 5-hour workshop. School teachers managed classes while student educators (age 15-16) taught their juniors (age 11-12).</p> <p>Materials addressed asthma and its management and smoking prevention; included games and activities.</p> <p><b>Comparison:</b></p>	<p>No effectiveness outcomes reported</p> <p>Multiple papers cited for Triple A effectiveness in Australian trials.</p>	<p><b>Intervention cost:</b> \$50 per targeted student per year \$8,212 per school \$41,060 total for five high schools</p> <p>Excluding volunteer labor and venue cost dropped cost to \$14 per targeted student.</p> <p><b>Components Included in Intervention Cost:</b> Salaries: \$20,563 (\$11,869 was volunteer) Cost of facility rent: \$11,660</p> <p><b>Data Source:</b> Activities from study and unit price from literature</p>	<p><b>Healthcare Cost:</b> NR</p> <p><b>Productivity:</b> NR</p>	<p>No summary outcomes</p> <p><b>Limitations:</b> Change in healthcare cost not estimated</p> <p>No effectiveness estimates</p>

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
		None		<b>Quality:</b> Good		
<p><b>Author (Year):</b> Salisbury et al. (2002)</p> <p><b>Design:</b> RCT</p> <p><b>Economic Method:</b> Intervention cost and healthcare cost</p> <p><b>Funding Source:</b> National Health Service (NHS) Research and Development Programme on Asthma Management and South West NHS Research and Development Directorate</p> <p><b>Monetary Conversions:</b> Index year assumed 1999 in UK pounds</p>	<p><b>Location:</b> Southwest England, UK</p> <p><b>Setting:</b> Secondary school (middle and high); two schools from low SES and two schools from high SES</p> <p><b>Eligibility:</b> Participants recruited based on screening questionnaire administered at school in years 7 to 11 referenced against computerized prescribing records from local general practices. Eligible students had at least one affirmative response in screening questions and an asthma prescription within past two years.</p> <p><b>Sample Size:</b> School clinic: 157 General practice clinic: 151 Control: 142</p>	<p><b>Intervention:</b> Staffed by nurse with school nursing experience and specialist training.</p> <p>School asthma clinic held weekly. Nurse delivered in-school intervention and offered care similar to asthma care in general practice but with discussions targeted to needs and interests of students. Changes to medications followed national guidelines. Normal follow-up at one month and then at six months after baseline. Those who needed to change their treatment or had poor control additionally followed up at three months.</p> <p><b>Comparison:</b> Usual care by nurse or physician in asthma clinic or general practice external to the school.</p>	<p>Measured at 6-month pre and 6-month post.</p> <p>Significantly more in school-clinic students had asthma review (90.8%, baseline 25.5%) than practice-clinic (51%, baseline 17.5%) or control (58.1%, baseline 21.3%) students.</p> <p>No significant difference in quality of life or symptoms (post Steen score were school-clinic 17, practice-clinic 17, control 18). Knowledge of asthma significantly higher in school-clinic students (2.64) versus practice-clinic (2.26), or control (2.39) students.</p> <p>Inhaler technique higher with median scores for school-clinic (4) versus</p>	<p><b>Intervention cost per student over six months:</b> £21.65</p> <p><b>Components included in intervention cost:</b> Nurse and administration labor cost, materials, and postage</p> <p><b>Source and Valuation:</b> Records from trial and area wages and prices</p> <p><b>Quality:</b> Good</p>	<p><b>Program plus healthcare cost per student per year:</b> In-school: £56.60 In clinic: £38.08 Control: £35.72</p> <p><b>Components Included in Healthcare Cost:</b> Asthma related ED, inpatient, outpatient, medication</p> <p><b>Source and Valuation:</b> Parent/student questionnaire checked against general practice records</p> <p><b>Measure Type:</b> Post only</p> <p><b>Quality:</b> Good</p> <p><b>Change in Mean Productivity:</b> NR</p>	<p>No summary economic outcomes</p>

Study Information	Study and Population Characteristics	Trial Name Intervention & Comparison	Effectiveness Findings	Intervention Costs	Healthcare Cost Averted Productivity Loss Averted	Economic Summary Measure
	<p><b>Characteristics:</b>                      Median age: 13 y                      Females in-school: 48.7%                      Females in practice clinic: 53%</p> <p><b>Time Horizon:</b>                      1999-2000 academic year</p> <p>Intervention length: six months</p>		<p>practice-clinic (3), and control (3).</p> <p>The percent of students with at least one school day lost was similar in the school-clinic 30.6%, practice-clinic 32.6%, control 30.2%.</p> <p><b>Data source:</b>                      General practice records, tests, and questionnaire</p> <p><b>Measure Type:</b>                      Post only</p>			