



*Agency for Healthcare Research and Quality*

*Advancing Excellence in Health Care*

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## **Hands-on-Training: Potential uses of the Asthma Care ROI calculator**

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Ginger Smith Carls, M.A., Rosanna M. Coffey, Ph.D., Ronald J. Ozminkowski, Ph.D., Karen Ho, M.S., Mika Nagamine, Ph.D., Katheryn Ryan

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Tools You Can Use to Make a Difference



# Examples

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- Planning
- Evaluation



## Planning Example: Use calculator to estimate impact of program on Medicaid budget

- **Objective:** forecast budget impact of proposed asthma care program
- **Data available**
  - **Obtained from Medicaid claims**
    - Asthma prevalence rates (from Medicaid claims)
    - Utilization of medical care services (from Medicaid claims)
  - **Obtained from pilot study**
    - Change in utilization rates, but impact on medications and ancillary services not available
  - **Other info**
    - 10 year planning horizon
    - Program costs \$100 a year for each person that participates
- **Missing information**
  - **Cost of Medical care services**
  - **Impact of program on medical costs and ancillary services**



# Planning Example

## Changes to each page of the calculator

### ■ Population

- Medicaid
- State (Arizona this example)
- No need to adjust age, gender and race since using own prevalence rates

### ■ Participants

- Adults and Children
- Severity – persistent asthma
- Change number eligible based on own data (10,000)
- Participation rate (60%)

### ■ Baseline

- Change cost perspective to program /plan (exclude patient payments)
- ED visits for asthma: 0.5 per year per patient
- Hospital stays for asthma: 0.1 per year per patient
- Outpatient (office visits) for asthma: .9

### ■ Program Impact from pilot study (used a control group)



# Program Impact

For a general discussion of this page, click on the black question mark. ?

This page shows the impact estimates from a meta-analysis of the research literature on asthma quality improvement and disease management. You have one decision to make and one option on this page.

- 1) Select the type of study you want to use for results.
- 2) Freeze the impact values if you want to compare different scenarios when the impact stays the same.

Select a study design: Randomized controlled studies

Check to keep impact at current values:  Freeze impact values

### Healthcare Measures:

### Productivity Measures:

Program impact on emergency department visits? -40%

Program impact on missed work days per adult? -86%

Program impact on hospital stays? -45%

Program impact on missed school days per child? -57%

Program impact on outpatient visits? 10%



Program impact on the cost of ancillary services? -66%

Program impact on the cost of asthma medications? 17%

\* Negative percents are a decrease and positive percents are an increase in health care use or cost or missed days.



# Results

[Go To Detailed Results](#)

For a general discussion of this page, click on the black question mark. ?

This page shows the impact of the asthma program and summarizes the assumptions you made in the calculator. Make two decisions on this page: 1) Whether to include health care savings, productivity gains, or both. 2) Whether to report results per participant or per program.

Choose whether to display averages or totals:  Show averages per participant  Show totals for all participants

### Current Model Settings

Population type	Medicaid
Geographic location	Arizona
Asthma definition	Persistent only
Adults and/or children	Adults and Children
Estimated persons with asthma	10,000
Percent who will participate	60%
Estimated program participants	6,000
Annual program cost per participant	\$100
Years the program operates	10
Program phase-in period (years)	2
Discount rate for NPV and ROI	3%

<b>Total Healthcare Savings</b>	<b>\$9,381,967</b>
Emergency department visits	5.9%
Hospital confinements	140.1%
Outpatient visits	-1.5%
Asthma-specific ancillary services	7.8%
Asthma medications	-52.2%
	100.0%

<b>Total Productivity Gain</b>	<b>\$20,568,147</b>
Productivity for adults	76.7%
Productivity for children	23.3%
	100.0%

<b>Total Program Cost</b>	
<b>over Years the Program Operates</b>	<b>\$5,118,122</b>

Choose health care savings, productivity gains, or both:

Include Health Care savings in the NPV and ROI

Include Productivity gain in the NPV and ROI

### Overall Impact of Program

Net Present Value (NPV)	\$4,263,845
Return On Investment (ROI)	\$1.83
Break-Even Program Impact	-2%
Break-Even Program Cost	\$183.31



# Evaluation Example: Use calculator to guide or compare

- **Objective:** Plan evaluation of asthma intervention and monitor impact before and after evaluation finished
  
- **Plan comprehensive evaluation:**
  - Are all components captured? (Inpatient, emergency, outpatient, medication, ancillary tests)
  - What is time horizon of expected program costs and returns?
  - Are future benefits and costs evaluated on a discounted (equalized) time horizon?
  - Are productivity gains assigned financial returns?
  
- **Monitor impact of intervention**
  - Early results without a control group – compare to studies without a control group
  - Controlled results in – compare to controlled studies
  - Find studies that evaluated same type of intervention