





## Background on Asthma

- Most common chronic disease in childhood
- More than half of all cases start before age 3; 80% begin before age 6
- Respiratory disorder with episodes of airway obstruction, inflammation, and hyper-responsiveness
- Exact disease process is yet unknown, but there have been many advances in the management of symptoms



## Asthma Prevalence

- **8.5% of children in the U.S. have asthma**
- Higher rates among some minorities and poor
  - Black: 12.5%
  - Puerto Rican: 18.7%
  - Living below federal poverty threshold: 11.1%

Source: CDC, 2007.



## Costs Associated with Asthma

- Direct Medical Costs
  - Medications
  - Hospitalizations
  - Emergency Department Visits
  - Hospital Outpatient Visits
  - Physician Office Visits
- Indirect Productivity Costs
  - Parents' Work Loss
  - Own Work Loss



## Purpose of Cost of Illness (COI) Studies

- To identify the main contributors to total costs
- To compare the economic burden to other diseases
- To argue for more resources for prevention/care
- To raise awareness
  - help some manage their disease
  - argue for more resources



## Annual vs. Lifetime Costs

- **Annual Costs (Prevalence-based)**
  - Cross-sectional view of costs in one year for all persons with asthma
- **Lifetime Costs (Incidence-based)**
  - Present value of lifetime costs for persons newly diagnosed with asthma

The savings from averting cases in a particular cohort would be underestimated by annual costs because asthma is a chronic disease which spans many years.



## Results: Direct Medical Costs

	Lifetime Cost Estimate (2000\$ millions)
Medications	\$1,806
Hospitalizations	\$842
Emergency Department Visits	\$243
Hospital Outpatient Visits	\$345
Physician Office Visits	\$326
<b>Total Direct Medical Costs</b>	<b>\$3,561</b>



## Results: Indirect Productivity Costs

	<b>Lifetime Cost Estimate (2000\$ millions)</b>
Parents' Work Loss	\$1,301
Own Work Loss	\$2,713
<b>Total Indirect Productivity Costs</b>	<b>\$4,014</b>

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## Results: Total Lifetime Costs

	<b>Lifetime Cost Estimate (2000\$ millions)</b>
Total Direct Medical Costs	\$3,561
Total Indirect Productivity Costs	\$4,014
<b>Total Lifetime Costs of Asthma</b>	<b>\$7,575</b>

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## Summary and Implications

- Costs saved by averting cases of asthma among the 2000 birth cohort would be \$7.6 billion
- Larger than annual asthma costs for children (\$1.8 to \$3.8 billion)
- Large compared to other costs: lifetime costs of injuries to children age 0-4 are \$16.0 billion
- Productivity costs larger than medical costs
- Asthma interventions which reduce the occurrence of acute episodes will have huge productivity loss savings now

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