
Asthma Burden Report New Hampshire 2010-2011

Chapter 2: Asthma Control, Management and Quality of Life



Preface

In order to get available data to you in a timely manner, the New Hampshire Asthma Control Program has decided to publish chapters of the *Asthma Burden Report – New Hampshire 2010-2011* as they are completed. When new chapters are published, the appendices will be updated if needed. The primary purpose of this report is to disseminate data to the Asthma Control Program’s partners, health care providers, insurers and public health professionals so this information can be used to develop, plan, implement and evaluate asthma-related activities.

Acknowledgments

Primary Author:

Elizabeth Traore, MPH Asthma Control Program Epidemiologist/Evaluator, Division of Public Health Services, New Hampshire Department of Health and Human Services (NH DHHS)

Asthma Control Program Manager:

Lindsay Dearborn, M.Ed, MPH Division of Public Health Services, NH DHHS

Centers for Disease Control and Prevention:

Jeneita Bell, MD, MPH Epidemic Intelligence Service Officer, National Center for Environmental Health, Air Pollution & Respiratory Health Branch
 Jeanne Moorman, MS Survey Statistician, National Center for Environmental Health, Air Pollution & Respiratory Health Branch

Reviewers:

Ludmila Anderson, MD, MPH Chronic Disease Epidemiologist, Division of Public Health Services, NH DHHS
 Susan Knight, MSPH BRFSS Coordinator, Office of Health Statistics and Data Management, Division of Public Health Services, NH DHHS

For More Information Contact:

Department of Health and Human Services
 Division of Public Health Services
 New Hampshire Asthma Control Program
 29 Hazen Drive
 Concord, NH 03301-6504
 Phone: (603) 271-0856 or 1-800-852-3324 ext 0856
 TDD Access: 1-800-735-2964
 Web site: <http://www.dhhs.nh.gov/dphs/cdpc/asthma/index.htm>

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Asthma Control, Management, and Quality of Life

Asthma Control Highlights:

- Nearly one in two adults and one in three children with asthma have uncontrolled asthma.

Asthma Management Highlights:

- Roughly 25% of adults and children with asthma experienced two or more asthma episodes/attacks in the last three months.
- Approximately 25% of adults and 50% of children with asthma reported EVER having received an asthma action plan.
- Only one in five adults and one in three children have received what could be characterized as a *minimum standard* of asthma education.
- A yearly flu vaccination is recommended for individuals with asthma, but only 50% were vaccinated in 2008. While adults and children with asthma have significantly higher rates of vaccination than individuals without asthma, nearly a third who were not vaccinated reported they did not think they needed it or their health care provider did not recommend it.
- Of the adults who reported taking an inhaled corticosteroid, 83.6% reported taking them daily and 30% reported taking them during an asthma attack/episode.
- The use of complementary and alternative medicines (CAM) to treat asthma is not recommended. However, 41.6% of adults and 26.3% of children reported using CAM to treat their asthma.

Quality of Life Highlights:

- Both adults and children with asthma experienced a lower quality of life than people who did not have asthma. However, when asthma was well controlled, quality of life measures were similar for individuals with and without asthma.

This chapter presents data from the 2006-2008 New Hampshire Behavioral Risk Factor Surveillance System (NH BRFSS), 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys, and 2007 National Survey of Children's Health (NSCH). It looks at asthma control, management and quality of life indicators. Asthma control is derived based on responses to survey questions related to symptoms, nighttime awakening, and use of a short-acting beta₂-agonist. Asthma management indicators include symptoms and episodes, asthma education, vaccinations, medications, and use of complementary and alternative therapies. Quality of life indicators include general health status, activity limitations, and depression status among individuals with asthma compared with those without asthma. They also examine level of activity limitations and frequency of missed work and school days.

Definitions for each indicator used in this chapter can be found in the glossary at the end of the chapter. See Appendix A for a description of the data sources and their limitations and Appendix B for technical notes and methods used to analyze the data. These documents are located at: <http://www.dhhs.nh.gov/dphs/cdpc/asthma/publications.htm>.

2.1 Asthma Control

The National Heart, Lung, and Blood Institute (NHLBI) Expert Panel Report 3 (EPR-3), *Guidelines for the Diagnosis and Management of Asthma*, measures control based on symptoms (frequency and duration), nighttime awakenings, use of short-acting beta₂-agonists (SABA), interference with normal activity, and lung function measures (FEV1 and PEF).¹ Due to BRFSS Asthma Call-back Survey limitations, the calculated measure of control for this report does not include interference with normal activity and lung function measures. Table 2.1.1 below displays the definitions of control for each age group described in the *Guidelines*. See Appendix B for more details on the methods used to determine asthma control status - available at: www.dhhs.nh.gov/dphs/cdpc/asthma/publications.htm.

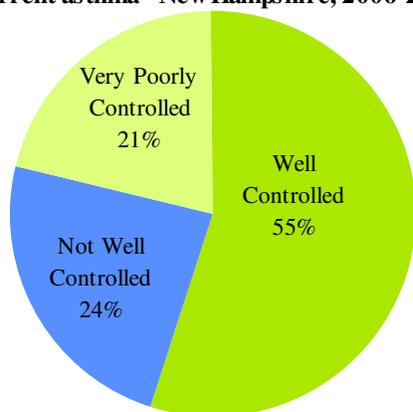
Level of control is based on the most severe level across the components that define control. For example, if for symptoms and nighttime awakenings an individual were categorized as “well controlled” and for use of short-acting beta₂-agonist “not well controlled,” then their overall control level was classified as “not well controlled.”

Table 2.1.1
Assessing Asthma Control using the EPR-3 National Guidelines

Components of Control		Well Controlled			Not Well Controlled			Very Poorly Controlled		
		Ages 0-4	Ages 5-11	Ages 12+	Ages 0-4	Ages 5-11	Ages 12+	Ages 0-4	Ages 5-11	Ages 12+
Impairment	Symptoms	≤ 2 days/ week but not more than once a day		≤ 2 days a week	> 2 days/week or multiple times on ≤ 2 days/week		> 2 days/ week		Throughout the day	
	Nighttime awakenings	≤ 1x/ month		≤ 2x/month	> 1x/ month	≥ 2x/ month	1-3x/week	> 1x/ week	≥ 2x/ week	≥ 4x/week
	Interference with normal activity	None			Some limitations			Extremely limited		
	Short-acting beta ₂ -agonist use for symptom control	≤ 2 days/ week			> 2 days/week			Several times per day		
	Lung function FEV1 (predicted) or peak flow personal best	N/A	> 80%	> 80% predicted/ personal best	N/A	60-80%	60-80% predicted/ personal best	N/A	< 60%	< 60% predicted/ personal best

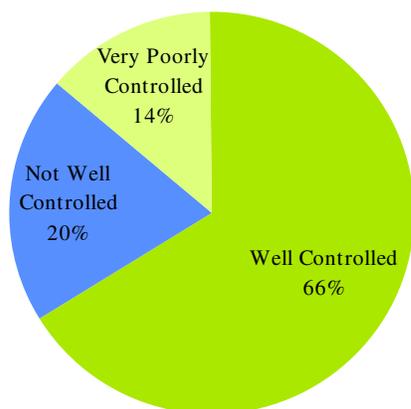
Source: Figures 12 and 15 from NHLBI *Guidelines for the Diagnosis and Management of Asthma - Expert Panel Report 3*

Figure 2.1.1
Level of asthma control among adults 18+ years old with current asthma - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Adult Asthma Call-back Survey

Figure 2.1.2
Level of asthma control among children < 18 years with current asthma - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Child Asthma Call-back Survey

Level of Asthma Control:

Approximately 45% of adults and 34% of children with asthma had uncontrolled asthma (“not well controlled” or “very poorly controlled” asthma).

These estimates are significantly lower and more conservative than estimates reported in other publications using the same data source because the methods used to estimate control are slightly different. Other publications include results from the survey question, “During the past 12 months, would you say you limited your usual activities due to asthma not at all, a little, a moderate amount, or a lot?” in addition to the questions used to define control in this report.

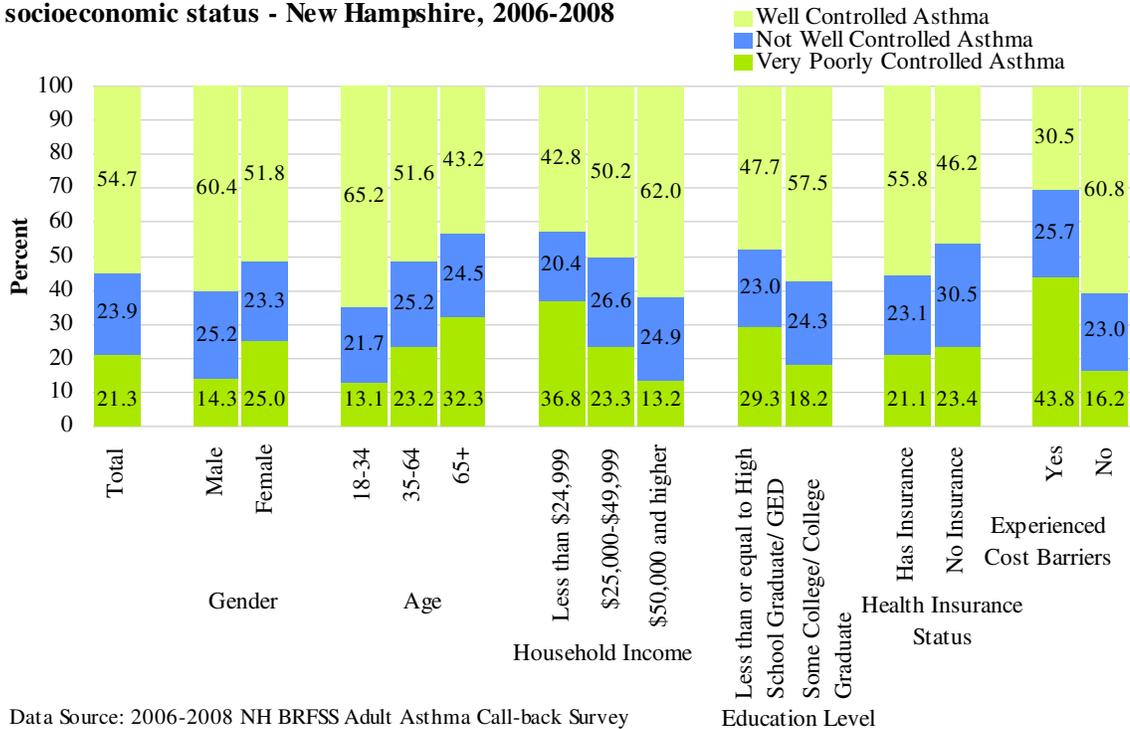
Results from this question were not used to determine control status in this report for two reasons: 1) the question asks about the last twelve months rather than the last two to four weeks as suggested in the *Guidelines*, and 2) this question, more than any other question used to determine level of control, resulted in a classification of “not well” or “very poorly” controlled asthma. As a result it was determined that the question may be miss - classifying people as having uncontrolled asthma.

See Table 2.1.4 at the end of this chapter for point estimates and confidence intervals for data presented in Figures 2.1.1-2.1.2.

Level of Asthma Control by Demographic and Socioeconomic Characteristics

Figure 2.1.3

Level of asthma control among adults 18+ years old by demographic and socioeconomic status - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Adult Asthma Call-back Survey

Education Level

Among Adults:

- The prevalence of “very poorly controlled” asthma was significantly higher in females (25.0%) compared to males (14.3%).
- As age increased, the likelihood of an adult reporting “very poorly controlled” asthma also increased.
- As education level and annual household income increased, the likelihood of reporting “very poorly controlled” asthma decreased.
- There were no statistically significant differences in control status between adults who had insurance and those who did not.
- More than 40% of adults who reported experiencing cost barriers to seeing a primary care provider or specialist for their asthma, or buying asthma medications in the last year, also reported “very poorly controlled” asthma, compared with 16.2% of individuals who did not report experiencing these same cost barriers.

Among Children:

- Due to the small sample size for children, similar analysis of asthma control by demographic and socioeconomic characteristics could not be done.

See Table 2.1.5 at the end of this chapter for point estimates and confidence intervals for data presented in Figure 2.1.3.

Asthma Severity as Defined by Asthma Control and Type(s) of Medication Used

The current National Heart Lung and Blood Institute Expert Panel Report 3 (NHLBI EPR3), *Guidelines for Diagnosis and Management of Asthma*, places greater emphasis on control of asthma than on severity. The *Guidelines* provide a method for assessing asthma severity in a clinical setting but these methods are difficult to use from a surveillance or epidemiological perspective because all the information needed to assess severity based on the *Guidelines* is rarely available through surveys and other data collection instruments. Epidemiology methods used to assess severity vary dramatically from study to study as do their results. To date, there does not appear to be a systematic definition of asthma severity that can be used for surveillance.

Based on advice of clinical provider partners, the New Hampshire Asthma Control Program developed a severity definition using control status and types of medications. Table 2.1.3 depicts how control status and prescription asthma medication use were used to define intermittent versus persistent asthma. For the purposes of this report, *intermittent asthma* is defined as “well controlled” asthma with no asthma medication or only a rescue medication used in the last three months. *Persistent asthma* is defined as “well controlled” asthma with controller medication used in the last three months, or “not well” or “very poorly” controlled asthma.

The following assumptions were made:

- Anyone reporting “not well” or “very poorly” controlled asthma likely had *persistent asthma*.
- If someone with *intermittent* asthma had uncontrolled asthma at the time the survey was administered, then this definition will misclassify them as having *persistent* asthma.
- Individuals with “well controlled” asthma, who were on no asthma medications or only a rescue medication in the last three months, likely had *intermittent asthma* as they needed little or no medication to keep their asthma “well controlled.”
- Individuals with “well controlled” asthma who were on a controller medication in the last three months likely had *persistent asthma* as they needed daily medication to keep their asthma “well controlled.”

Table 2.1.3

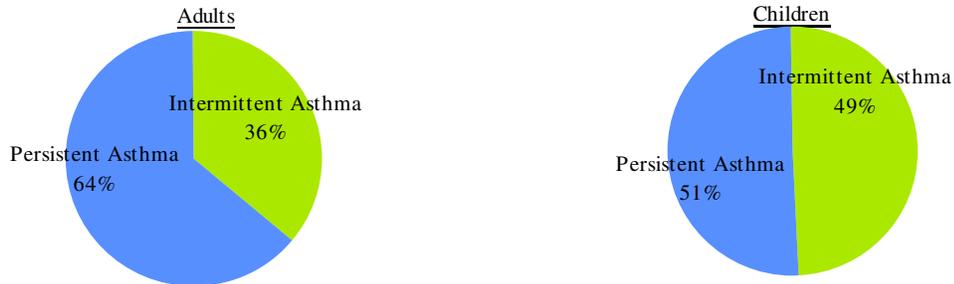
Definitions of Intermittent and Persistent Asthma Based on Control Status and Use of Prescription Asthma Medications in the Last Three Months

	Used ONLY a rescue medication in the last 3 months	Used NO prescription asthma medications in last 3 months	Used a controller medication in the last 3 months
Well Controlled Asthma	Intermittent Asthma		Persistent Asthma
Not Well Controlled Asthma			
Very Poorly Controlled Asthma			

Intermittent and Persistent Asthma:

Figure 2.1.4

Percent of adults 18 years or older and children < 18 years old with current asthma who had intermittent or persistent asthma - New Hampshire, 2006-2008



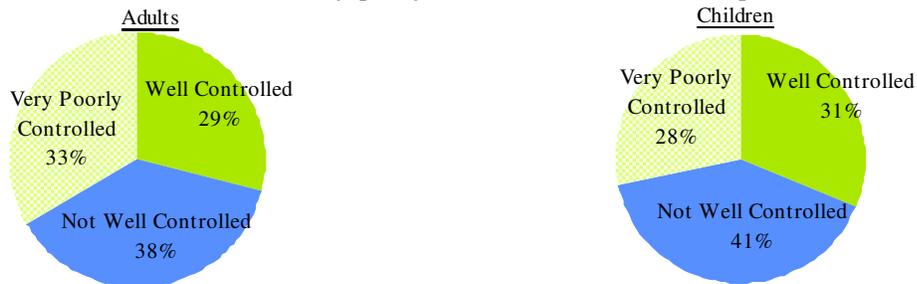
Data Source: 2006-2008 NHBRFSS Adult and Child Asthma Call-back Surveys

Based on control status and type(s) of prescription asthma medication used in the last three months, approximately two in three adults (64%) and one in two children (51%) with asthma in New Hampshire had persistent asthma during 2006—2008.

Individuals with intermittent or mild persistent asthma can and do have severe and sudden asthma exacerbations that may send them to the hospital or be fatal.^{2,3} It is estimated that 30% of asthma hospitalizations and 30% to 40% of asthma emergency room visits were by individuals who had intermittent or mild persistent asthma.²

Figure 2.1.5

Percent of adults 18 + years and children < 18 years old with persistent asthma who had well controlled, not well controlled or very poorly controlled asthma - New Hampshire, 2006-2008

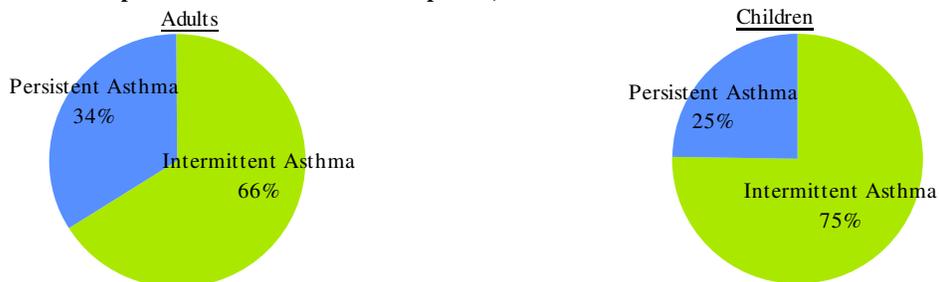


Data Source: 2006-2008 NHBRFSS Adult and Child Asthma Call-back Surveys

Only about one in three adults (29%) and children (31%) in New Hampshire with persistent asthma had “well controlled” asthma. Other studies have estimated that 20 to 40% of adults and 25 to 50% of children with persistent asthma have “well controlled” asthma. Variation in these estimates is likely due to study design and how asthma severity and control were defined.⁴⁻⁸

See Table 2.1.6 at the end of this chapter for point estimates and confidence intervals for data presented in Figures 2.1.4 - 2.1.5.

Figure 2.1.6
Percent of adults 18+ years old and children < 18 years of age with well controlled asthma who have intermittent or persistent asthma - New Hampshire, 2006-2008



Data Source: 2006-2008 NHBRFSS Adult and Child Asthma Call-back Surveys

The majority of adults and children with “well controlled” asthma had intermittent asthma, with 66% of adults and 75% of children with well controlled asthma having intermittent asthma.

See Table 2.1.6 at the end of this chapter for point estimates and confidence intervals for data presented in Figure 2.1.6.

2.2 Asthma Management

One of the goals of asthma management is to minimize symptoms and episodes. Asthma education, some vaccinations, and the use of asthma medications have all been shown to improve asthma management and are critical elements of the National Heart, Lung, and Blood Institute (NHLBI) Expert Panel Report 3 (EPR3), *Guidelines for the Diagnosis and Management of Asthma*. Some people also use complementary and alternative therapy (e.g., breathing techniques and acupuncture) to help treat or control their asthma; however, there is currently insufficient research to suggest that these are effective.¹

Another important component of asthma management is minimizing exposure to environmental factors that can trigger an asthma attack. This component of management is discussed in *Chapter 5: Environmental Factors Affecting Asthma*. Some of the health behaviors that affect asthma management are discussed in *Chapter 3: Risk Factors for Asthma and Co-Morbidities*.

Asthma Symptoms and Episodes

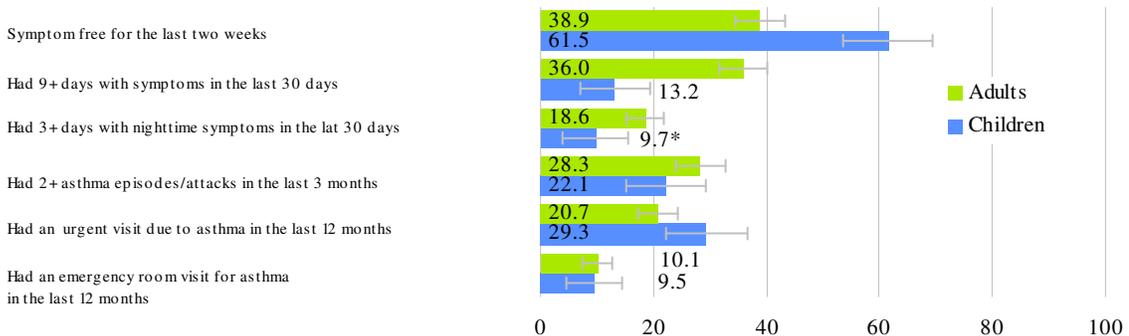
People with asthma who experience frequent symptoms do not always realize that their asthma is not under control. They tend to accept their health status when treatment does not enhance their quality of life or reduce their use of health care services.⁹

While approximately one in three adults (38.9%) and nearly two in three children (61.5%) with asthma reported being symptom free for the last two weeks,

- 36.0% of adults and 13.2% of children with asthma reported having 9 or more days with symptoms in the last 30 days
- 18.6% of adults with asthma reported having 3 or more days with nighttime symptoms in the last 30 days
- 28.3% of adults and 22.1% of children experienced two or more asthma episodes or attacks in the last 3 months.

These are indications of poorly controlled asthma. Since a parent or guardian reported the frequency of day and nighttime symptoms on behalf of the child and because they may not be aware of each instance their child experiences symptoms, the frequency of symptoms for children was most likely underreported.

Figure 2.2.1
Asthma symptoms and episodes among adults 18+ years old and children < 18 years old with current asthma - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

*Relative standard error is greater than 30% - interpret with caution.

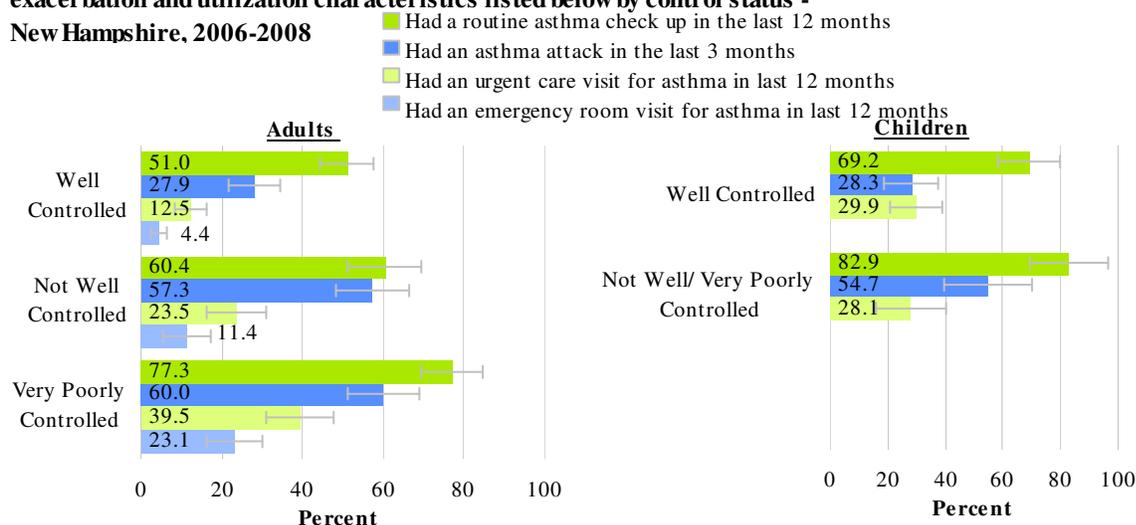
See Table 2.2.3 at the end of this chapter for point estimates and confidence intervals for data presented in Figure 2.2.1. See Table 2.2.3 - Supplemental at the end of the chapter for additional results with additional categorical breakouts of the measures presented in Figure 2.2.1.

Asthma Episodes and Use of Health Care Services by Control Status

Looking at the frequency of asthma episodes and the use of healthcare services by control status shows the impact control has on individuals' health status and health care experience.

Figure 2.2.2

Percent of adults 18+ years old and children < 18 years old with current asthma who exhibit the exacerbation and utilization characteristics listed below by control status - New Hampshire, 2006-2008



Data Source 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

* Relative standard error >30% - interpret with caution.

Note: Due to small numbers, "Not Well Controlled" and "Very Poorly Controlled" asthma were combined for children.

- The prevalence of asthma episodes or attacks among adults with “very poorly controlled” asthma (60.0%) was twice that among adults with “well controlled” asthma (27.9%).
- The prevalence of urgent visits for asthma among adults with “very poorly controlled” asthma (39.5%) was nearly three times that of adults with “well controlled” asthma (12.5%).
- The prevalence of emergency department visits among adults with “very poorly controlled” asthma was five times (23.1%), that among adults with “well controlled” asthma (4.4%).
- Adults with “very poorly controlled” asthma also had a significantly higher prevalence of routine asthma check ups (77.3%) compared to adults with “well controlled” asthma (51.0%).
- Over half (54.7%) of children with “not well or very poorly controlled” asthma had an asthma attack in the last three months compared with 28.3% of children with “well controlled” asthma. Among children there were no additional statistically significant differences found by control status for the other measures presented in Figure 2.2.2.

Literature suggests that interventions providing intensive asthma education and reduction of environmental triggers in the home can improve asthma control resulting in reduced emergency department visits and hospitalizations for asthma, and improved quality of life, as well as being cost effective.¹⁰⁻¹³

See Table 2.2.4 at the end of this section for point estimates and confidence intervals for data presented in Figure 2.2.2.

Asthma Education

According to the NHLBI EPR 3 *Guidelines for the Diagnosis and Management of Asthma*, asthma education should be integrated into every office visit for patients with asthma.

Asthma education includes, but is not limited to, teaching patients and parents/guardians:

- How to recognize early signs or symptoms of an asthma attack
- What to do during an asthma episode or attack
- How to use a peak flow meter
- How to use an inhaler if one is prescribed

In addition, according to the *Guidelines*, patients with asthma should receive an asthma action plan, which should be reviewed during each visit.

Based on results from the 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys, the majority of both adults and children were receiving *some* asthma education – see Figure 2.2.3. However, they had not receiving what could be considered a *minimum standard* of asthma education.

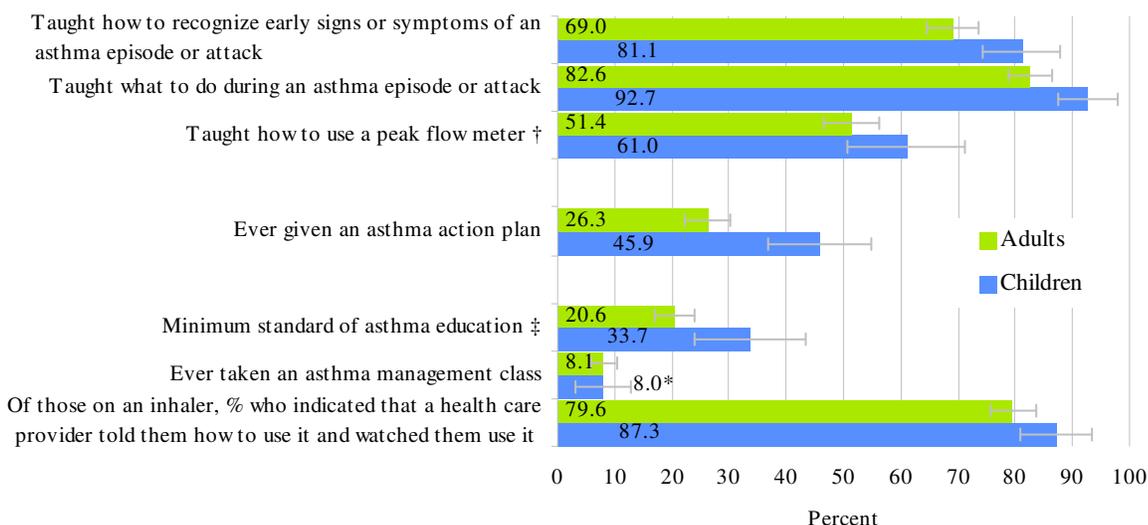
For the purposes of this report, a minimum standard of asthma education is defined as:

- Having ever been taught by a doctor or other health professional:
 - How to recognize early signs or symptoms of an asthma episode
 - What to do during an asthma episode or attack
 - How to use a peak flow meter to adjust daily medications (this criterion is excluded for children under 5 years old) AND
- Having ever been given an asthma action plan by a doctor or other health professional.

For results referring to a child with asthma receiving instruction or taking a class, if either the child or the adult reporting about the child received instruction, the child was considered to have been instructed or to have taken the class.

- Most adults and children with asthma had been taught how to recognize the early signs and symptoms of an asthma attack (69.0% of adults and 81.1% of children); what to do during an asthma episode or attack (82.6% of adults and 92.7% of children); and, if they were on an inhaler, they were told by a health care provider how to use it and, the provider watched them use it (79.6% of adults and 87.3% of children).
- Approximately one in four adults (26.3%) and one in two children (45.9%) with asthma reported EVER having received an asthma action plan.
- Only one in five adults (20.6%) and one in three children (34.4%) had received what could be characterized as a minimum standard of asthma education.

Figure 2.2.3
Asthma education among adults 18+ years old and children < 18 years old with current asthma - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

* Relative standard error is greater than 30% -interpret with caution

† For children, the analysis was limited to children 5-17 years old.

‡ Minimum standard of asthma education = "Yes" to all the indicators above it with the exception of children 0-4 years old. Children 0-4 years old did not have to have a "yes" to being taught how to use a peak flow meter.

Asthma Education by Control Status:

The only asthma education measure from Figure 2.2.3 that had a statistically different prevalence by asthma control status was being taught how to use a peak flow meter to adjust daily medications. Among adults with “very poorly controlled” asthma, 65.8% reported they had ever been taught how to use a peak flow meter to adjust their daily medications compared to 43.9% of adults with “well controlled” asthma. See Table 2.2.6 for results of analysis by control status.

Several studies have shown that asthma education improves asthma management, control, and quality of life among high risk adults and children and is cost effective. These studies estimate that asthma education can save between \$3 to \$22.50 for every one dollar invested.¹⁵

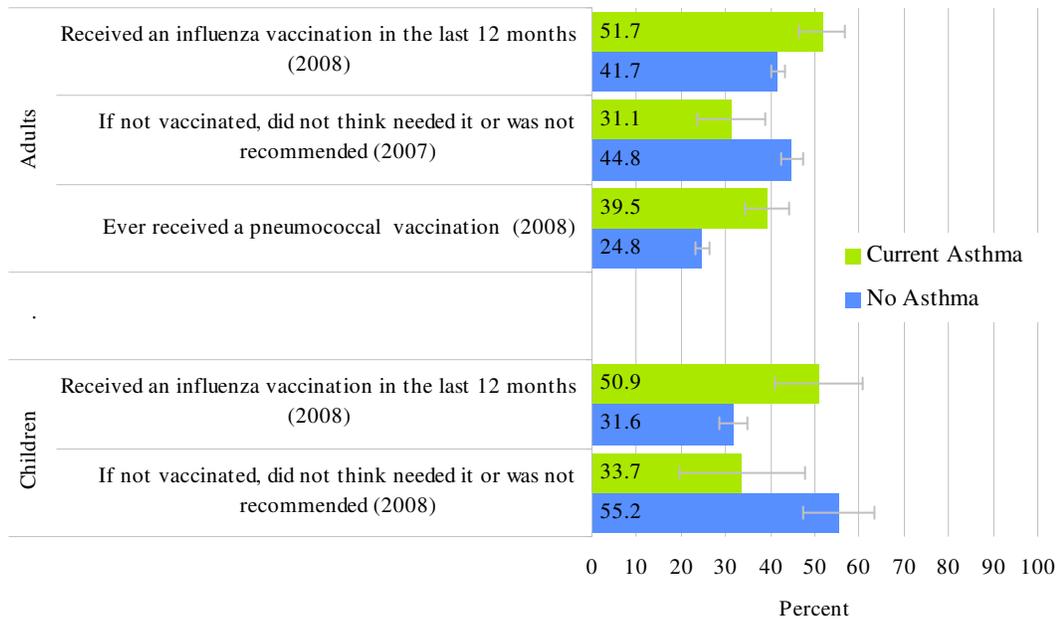
See Table 2.2.5 at the end of this chapter for point estimates and confidence intervals for data presented in Figure 2.2.3.

Recommended Vaccinations for People with Asthma

Upper respiratory tract infections such as influenza are a common asthma trigger and can cause significant morbidity and mortality among individuals with asthma.¹ The Centers for Disease Control and Prevention (CDC) recommends that individuals with asthma receive an annual vaccination for influenza.^{1,14}

In 2008, the CDC’s Advisory Committee on Immunization Practices (ACIP) revised their recommendations on who should receive the pneumococcal vaccine. ACIP now recommends that adults with asthma and current smokers 19-64 years old be vaccinated in addition to all adults over 65 years old.¹⁵ Several studies have indicated that people with asthma are at least twice as likely to develop pneumonia as those who do not have asthma.^{16,17}

Figure 2.2.4
Recommended vaccinations for adults 18 + years old and children < 18 years old with asthma by asthma status - New Hampshire, 2007-2008



Data Source: 2007-2008 NH BRFSS

*Note: Because questions on the NH BRFSS vary from year to year, data from two years were examined; the year the data were collected is provided in parentheses next to the indicator.

See Table 2.2.7 at the end of this chapter for point estimates and confidence intervals for data presented in Figure 2.2.4.

Influenza and Pneumococcal Vaccination:

- The proportion of adults in New Hampshire with and without asthma receiving an annual influenza vaccination has increased 12.7 percentage points from 2001 to 2008, 29.8% to 42.5%. (Data Source: 2001-2008 NH BRFSS.)
- In 2008, approximately 1 in 2 adults (51.7%) and children (50.9%) with current asthma received an influenza vaccination in the last 12 months. For both adults and children with current asthma, a statistically significant higher proportion reported receiving an influenza vaccination in the last 12 months compared with adults and children who did not have asthma.
- Of the adults and children with current asthma who did not receive an influenza vaccination, 31.1% of adults reported that they did not think they needed it or that it was not recommended for them and 33.7% of parents/guardians gave similar responses with regard to their child with asthma.
- The prevalence of pneumococcal vaccination was significantly higher among adults with current asthma (39.5%) compared to adults without current asthma (24.8%). .

Influenza and Pneumococcal Vaccination by Control Status:

- There were no statistically significant differences in the percentage of adults or children who received an influenza vaccination in the last 12 months by control status.
- Adults with “very poorly controlled” asthma (57.1%) were significantly more likely to have ever received a pneumococcal vaccination compared with adults who had “well controlled” asthma (35.0%).
- See Table 2.2.8 for analysis results of influenza and pneumococcal vaccination by control status.

Asthma Medications

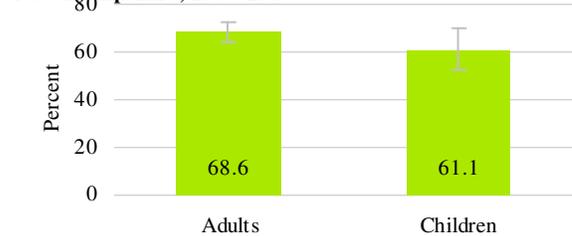
Over-the-Counter Asthma Medications

The NHLBI EPR 3 *Guidelines for the Diagnosis and Management of Asthma* do NOT recommend the use of over-the counter products such as antihistamines or cold remedies to treat asthma symptoms. There are some over-the-counter medications that work like a bronchodilator, relaxing the muscles around the airways. These medications are also not recommended because they provide only short-term relief (20-30 minutes) and do not control asthma symptoms or prevent asthma attacks. These medications may give a false sense of control and can be easily misused or overused.

Even though these medications are not recommended, people with asthma may still use over-the-counter medications to treat their asthma symptoms because they cannot afford prescription medications. *Chapter 4: Utilization of Health Care Services* indicates that 17.5% of adults in New Hampshire with asthma experienced cost barriers to buying their asthma medications in the last 12 months.

- Approximately 30.4% of adults and 12.6% of children with asthma had ever used over-the-counter medications to treat their asthma.
- Further analyses by available demographic and socioeconomic characteristics were conducted among adults with asthma. These analyses found:
 - There were statistically significant differences in the use of over-the-counter medication to treat asthma by gender and among adults who experienced cost barriers to seeing a primary care provider or specialist for their asthma, or buying asthma medication.
 - Approximately 43.0% of adult males with asthma compared with 23.8% of adult females reported ever using over-the-counter medications to treat their asthma.
 - An estimated 45.9% of adults experiencing cost barriers to either seeing a primary care provider or specialist for their asthma, or buying asthma medications, reported using over-the-counter medications to treat their asthma compared with 26.4% of adults with asthma who did not experience cost barriers.
 - There were no statistically significant differences by age, household income or level of education. There was variation in use by employment status and insurance status but the differences were not statistically significant.
- The sample size for children was too small to conduct similar analyses.
- Analysis by control status found no statistically significant differences in use of over-the-counter medications by control status.

Figure 2.2.6
Percentage of adults 18+ years old and children < 18 years old with current asthma who took any prescription medications for asthma in the last 3 months - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

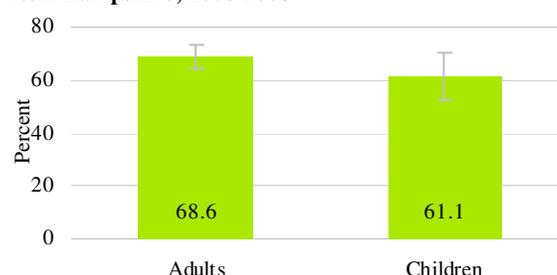
See Table 2.2.9 at the end of this chapter for point estimates and confidence intervals for data presented in Figure 2.2.5.

Prescription Asthma Medications

Prescription asthma medication can be grouped into quick-relief (or rescue) medication and long-term control drugs. Quick-relief medications are typically used during an asthma episode and sometimes prior to exercising to prevent an asthma episode. Because they are not intended to be used daily, frequent use of quick-relief medications is usually an indication of poorly controlled asthma. Long-term control medications are taken every day to prevent asthma attacks. People with *persistent* asthma should be prescribed both a quick-relief and a long-term control medication. All individuals with asthma should always have their quick-relief medication readily accessible in the event of the sudden onset of symptoms.

- Approximately 70% of adults and 60% of children with asthma took a prescription asthma medication (rescue and/or control medication) in the last three months.
- Further analyses of adult results by available demographic and socioeconomic characteristics found no statistically significant differences by gender, age, household income, level of education, employment status, insurance status, or having reported cost barriers to either seeing a primary care provider or specialist, or buying asthma medications.
- Among children, there were no statistically significant differences by gender or age.
- However, for children there was a statistically significant difference by household income. Children with asthma living in households earning less than \$25,000 per year were more likely to have taken an asthma medication (79.4%) compared with children with asthma living in a household that earned \$25,000 or more per year (57.0%). Possible explanations for this unexpected finding include:
 - Children who live in low income households often live in homes that place them at risk of ongoing exposure to asthma triggers (e.g., mold, cockroaches),^{18,19} making it more difficult to control their asthma and potentially increasing the use of medication if there is no home modification intervention implemented at the same time.
 - Children who live in a household earning less than \$25,000 per year are eligible for NH Medicaid, which significantly reduces cost barriers to accessing medications. The co-pay for prescription medications for individuals on Medicaid is nominal, usually 1 to 3 dollars and nonexistent for children less than 18 years of age.²⁰ In contrast, pharmacy insurance plan systems that classify drugs as generic (first-tier), preferred (second-tier), non-preferred (third-tier), and other (fourth-tier) and monetize them accordingly, present significant cost barriers that may affect medication use; prescription co-pays for children who are commercially insured are on average \$11 for generic drugs and \$89 for fourth-tier drugs.²¹ Though developed to influence patients to choose lower-cost generic drugs over more expensive, brand name products, the tier system overall may negatively affect whether or not individuals take the medications they need in order to control their asthma.

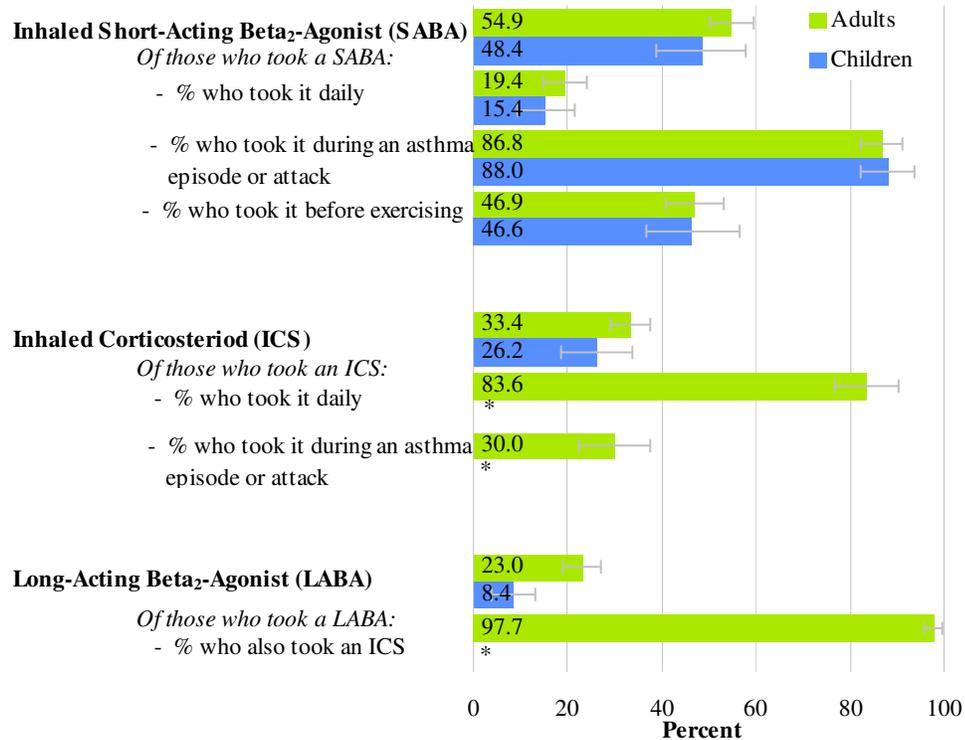
Figure 2.2.6
Percent of adults 18+ years old and children <18 years old with current asthma who took any perscription medications for asthma in the last 3 months - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

See Table 2.2.9 at the end of this chapter for point estimates and confidence intervals for data

Figure 2.2.7
Percent of adults 18+ years old and children <18 years old with asthma who took the asthma medications listed below in the last 3 months - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

* Sample size is too small to produce reliable estimates.

Utilization of Short-Acting Beta₂-Agonists

Short-acting beta₂-agonist (SABA) is the most common rescue medication. Based on the NHLBI EPR-3 *Guidelines for the Diagnosis and Management of Asthma*, everyone with asthma should have access to a SABA or other rescue medication. In New Hampshire, approximately 54.9% of adults and 48.4% of children with asthma have used a SABA in the last three months.

This medication should not be taken daily; frequent use of SABA is an indication of poorly controlled asthma. It should be used during an asthma episode or attack and can sometimes be used before exercising to prevent an asthma episode or attack.

Of the adults and children who took a SABA in the last three months, approximately 19.4% of adults and 15.4% of children reported taking their SABA daily, and 86.8% of adults and 88.0% of children reported taking a SABA during an asthma episode or attack.

Rescue medication can also be administered using a nebulizer. However, data on frequency of use, use during an asthma episode/attack, and use before exercising were not reported for asthma medications that were taken as pills, syrups, or with a nebulizer; analyses in Figure 2.2.7 were therefore limited to individuals who reported taking an inhaled SABA. Figure 2.2.8 shows the percent of adults and children who reported taking any rescue medication in any form (e.g., inhaler, nebulizer, or syrup).

Utilization of Inhaled Corticosteroids

The NHLBI EPR-3 *Guidelines for Diagnosis and Management of Asthma* recommend the use of inhaled corticosteroids as the preferred treatment for anyone with persistent asthma. It is estimated that 64.0% of adults and 51.0% of children with asthma in New Hampshire have persistent asthma. See pages 2-5 and 2-6 for information on asthma severity classification.

Figure 2.2.7 shows that 33.4% of adults and 26.2% of children reported taking an inhaled corticosteroid (ICS) in the last three months..

This medication should be taken daily to prevent an asthma episode or attack. It should not be taken while having an episode or attack; a SABA or other quick-relief medication should be used during an episode or attack.

Of the adults who took an ICS in the last three months, approximately 83.6% of adults reported taking it daily and 30.0% reported taking it during an asthma episode or attack. The sample size was too small to produce similar estimates for children.

There are other inhaled controller medications but ICS is the preferred treatment. Controller medications also come in other forms (pill, syrup, or nebulizer). However, analyses in Figure 2.2.7 were limited to individuals who reported taking an inhaled ICS because data were not reported on these other forms. Figure 2.2.8 shows the percent of adults and children who reported taking any control medication in any form (e.g., inhaler, pill, syrup, or nebulizer).

Utilization of Long-Acting Beta₂-Agonists

Long-acting beta₂-agonists (LABA) are used for people with severe persistent asthma that cannot be controlled with ICS alone or other treatments. Although LABAs relieve asthma symptoms, they also provoke bronchial inflammation and sensitivity without warning, which has been associated with an increased risk of severe exacerbations of asthma and death from asthma in a small group of people using LABA to treat their asthma.²² Because of these risks, the Food and Drug Administration strongly advises that anyone who is on a long-acting beta₂-agonist also take an inhaled corticosteroid or other controller medication.

Of the estimated 23.1% of adults with asthma who took a long-acting beta₂-agonist in the last three months, 97.7% also took an inhaled corticosteroid. The sample size was too small to produce similar estimates for children.

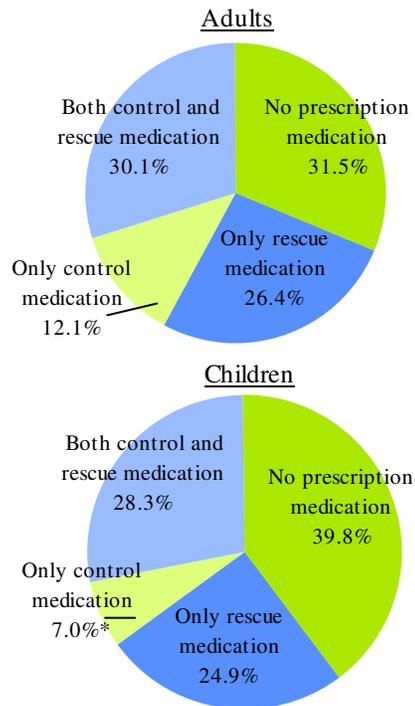
See Table 2.2.9 at the end of this chapter for point estimates and confidence intervals for data presented in Figure 2.2.7

Type of Prescription Asthma Medications Adults and Children with Asthma Took in the Last 3 Months:

Everyone with asthma should have access to asthma rescue medication in the event that they have asthma symptoms or a sudden asthma episode/attack. Individuals with persistent asthma should be prescribed a long-term control medication.

- Approximately 32% of adults and 40% of children with current asthma did not take any prescription asthma medications in the last three months.
- About half of adults (57%) and children (53%) with asthma took an asthma rescue medication in the last three months. Approximately 1 in 4 adults (26%) and children (25%) took only asthma rescue medications in the last three months.
- Nearly 1 in 3 adults (30%) and children (28%) with asthma took both a controller and rescue asthma medication in the last three months.
- Only a small proportion of adults and children with asthma took only control medication in the last three months.

Figure 2.2.8
Percent of adults 18+ years old and children <18 years old with current asthma who took a prescription asthma medication in the last 3 months - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys
*Relative standard error is greater than 30% - interpret with caution.

See Table 2.2.9 at the end of this chapter for point estimates and confidence intervals for data presented in Figure 2.2.8.

Use of Asthma Medications among Adults with Two or More Asthma Attacks/Episodes in the Last Three Months:

Figure 2.2.1 shows that 28.3% of adults and 22.1% of children with asthma reported having two or more asthma attacks/episodes in the last three months. Further analyses were done to see what types of medications these individuals reported using in the last three months; the additional analyses could only be done among adults as the sample size for children was too small to produce reliable estimates.

Of the adults who had two or more asthma attacks in the last three months:

- 15.7% reported taking NO asthma medication
- 39.8% reported taking ONLY rescue medication (this includes both SABA and other rescue medication taken using an inhaler or nebulizer or in the form of a syrup)
- 44.5% reported taking a controller medication (this includes ICS and other controller medications taken using an inhaler or nebulizer, or in the form of a pill or syrup). Almost all of the individuals who reported taking a controller medication also took a rescue medication.

People with asthma who have frequent asthma symptoms and/or asthma attacks/episodes should talk to their healthcare provider about using a long-term controller medication and identifying and minimizing exposure to their asthma triggers.

Table 2.2.1
Of the 28.3% of adults 18+ years old with asthma who had two or more asthma attacks/episodes in the last three months, the percent who reported taking the medications listed below in the last three months - New Hampshire, 2006-2008

	Percent	95% CI
Took NO asthma medications	15.7	8.8 - 22.5
Took ONLY a rescue medication	39.8	30.6 - 49.0
Took a controller medication	44.5	35.3 - 53.8

Data Source: 2006-2008 NH BRFSS Adult Asthma Call-back Survey

Note: Individuals that took a controller medication may have also taken a rescue medication in the last three months.

Cost barriers among Adults with Two or More Asthma Attacks/Episodes in the Last Three Months:

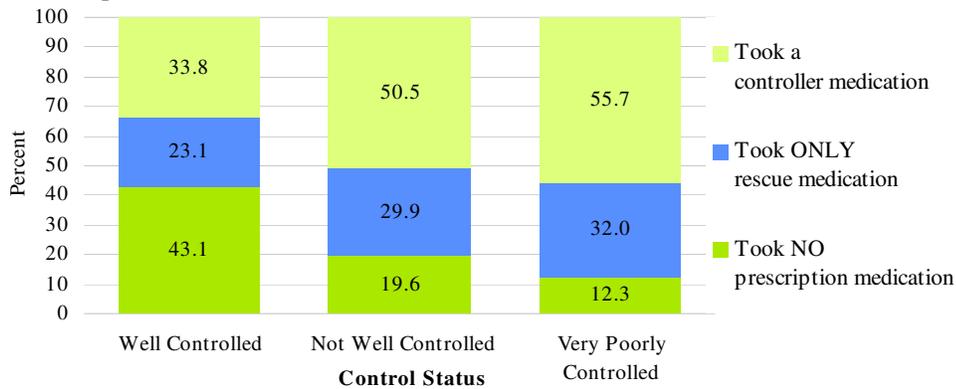
- The percentage of adults reporting they experienced cost barriers to treating their asthma was twice as high among adults with two or more asthma attacks or episodes in the last three months (31.4%) compared to adults who had no asthma attacks or episodes in the last three months (13.9%). Cost barriers were defined as barriers to seeing a primary care provider or specialist, or buying asthma medications, due to the expenses involved.

This page and the next examine control status and the use of asthma medications from two perspectives. The first set of information looks at the use of asthma medications among individuals in New Hampshire who have “well controlled,” “not well controlled” or “very poorly controlled” asthma. The second set on page 21 examines the control status of individuals who took no asthma medication, only rescue medication, or a controller medication in the last three months. Only results for adults are displayed as the sample size for children was too small to produce reliable estimates.

Of Adults in New Hampshire Who Reported having “Well Controlled,” “Not Well Controlled,” or “Very Poorly Controlled” Asthma, the Percentage Taking No Asthma Medication, Only a Rescue Medication, or a Controller Medication in the Last Three Months.

Adults with “not well” or “very poorly controlled” asthma are likely to take asthma medication and most likely should be on a controller medication. The figure below shows that only half of NH adults with asthma were on a controller medication. It also shows that although half were on a controller medication, they still did not have “well controlled” asthma. This could be due to multiple factors including non-adherence to the medication regimen, lack of proper technique when taking inhaled asthma medication, not being on the right medication, not being able to minimize exposure to their asthma triggers, or having other chronic conditions that complicate their asthma.

Figure 2.2.9
Percent of adults 18+ years old with asthma who reported taking no prescription medication, only rescue medication, or a controller medication in the last 3 months by control status - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Adult Asthma Call-back Survey
 Note: Individuals who took controller medications may have also taken rescue medication in the last three months.

- Of adults 18 years old and older with “well controlled” asthma, 43.1% did not take any asthma medication in the last three months, 23.1% took only a rescue medication, and 33.8% took a controller medication.
- Approximately 19.6% of adults with “not well controlled” asthma took no asthma medication in the last three months, 29.9% took only a rescue medication, and just over half (50.5%) took a controller medication.
- Approximately 12.3% of adults with “very poorly controlled” asthma took no asthma medication in the last three months, 32.0% took only a rescue medication, and 55.7% took a controller medication.
- Adults with “not well” or “very poorly” controlled asthma were more likely to be on a controller medication than adults with “well controlled” asthma.
- About half of adults with “not well” or “very poorly” controlled asthma were not on a controller medication.

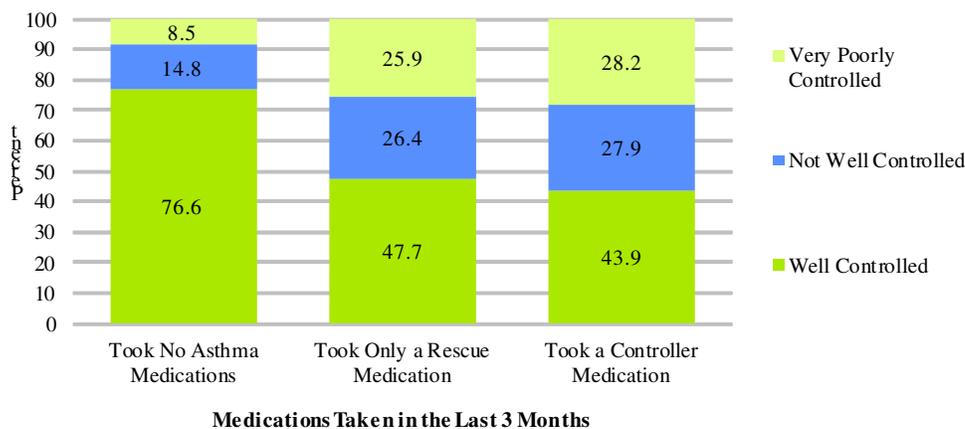
Of Adults with Asthma Who Reported Taking No Asthma Medication, Only a Rescue Medication, or a Controller Medication in the Last Three Months, the Percentage having “Well Controlled,” “Not Well Controlled,” or “Very Poorly Controlled” Asthma.

Adults who reported taking no asthma medication in the last three months likely had intermittent asthma, and as a result, it should be easier for them to maintain control. Most adults who reported taking no asthma medication in the last three months but also reporting their asthma was “not well” or “very poorly” controlled, likely should have taken an asthma medication. Possible reasons why they were not taking a medication may include: they never saw a doctor; they did see a doctor but it was never prescribed; they could not afford to fill the prescription; or they filled the prescription but did not take the medication.

Adults who reported taking only a rescue medication in the last three months should for the most part have intermittent asthma. However, some portion of people with persistent asthma were likely to use only a rescue medication for a variety of reasons as well.

Adults who reported taking a controller medication in the last three months likely had persistent asthma. Adults on a controller medication who are “not well” or “very poorly” controlled may have challenges with adhering to their medication regimen, using proper techniques when taking inhaler medication, being able to minimize exposure to their triggers, and/or have other chronic conditions that complicate their asthma.

Figure 2.2.10
Prevalence of control status among adults 18+ years old with asthma by medications they reported taking in the last 3 months - New Hampshire, 2006-2008



Data Source: 2006-2008 NH BRFSS Adult Asthma Call-back Survey
 Note: Individuals who took controller medications may have also taken rescue medication in the last three months.

- Of adults who did not take any asthma medication in the last three months, approximately three in four (76.6%) were “well controlled” and nearly one in four had either “not well” or “very poorly” controlled asthma.
- Less than half of adults who took only a rescue medication (47.7%) had “well controlled” asthma. Approximately one in four were “not well controlled” (26.4%) and another one in four were “very poorly controlled” (25.9%).
- Adults who took a controller medication had a similar pattern of control status as those who took only rescue medication: 43.9% reported “well controlled” asthma, 27.9% “not well controlled”, and 28.2% “very poorly controlled” asthma.

See Tables 2.2.10 and 2.2.11 at the end of this chapter for point estimates and confidence intervals for data presented in Figures 2.2.9 and 2.2.10.

Complementary and Alternative Therapy

Stating that the evidence is insufficient to recommend or not recommend most complementary and alternative medicines (CAMs), the NHBLI EPR 3 *Guidelines for the Diagnosis and Management of Asthma* do not recommend their use in place of medical intervention. A note of caution for those who use herbal treatments for asthma: there is the potential for harmful ingredients in herbal treatments and for interactions with recommended asthma medications.¹

Table 2.2.2
Reported use of complementary and alternative medicine (CAM) to treat or control asthma among adults 18+ years old and children less than 18 years old with current asthma - New Hampshire, 2006-2008

	Adults		Children	
	Percent	95% CI	Percent	95% CI
Prevalence of CAM	41.6	(37.1 - 46.1)	26.3	(19.0 - 33.6)
Of those using CAM therapies, proportion who use each type				
Self-care	85.3	(79.9 - 90.7)		
Aromatherapy	10.9	(6.3 - 15.6)		
Breathing techniques	71.0	(63.7 - 78.3)		
Herbs	20.0	(12.8 - 27.1)		
Homeopathy	8.3	(4.1 - 12.5)		
Vitamins	15.8	(10.7 - 20.9)		
Yoga	7.8	(4.6 - 11.0)		
Practitioner	9.4	(5.7 - 13.0)		
Acupressure	3.4*	(1.3 - 5.5)		
Acupuncture	2.4*	(0.5 - 4.4)		
Naturopathy	3.6	(1.6 - 5.7)		
Reflexology	2.5*	(0.3 - 4.6)		
Other	31.8	(24.7 - 38.9)		

Data Source: 2006-2008 NH BRFSS Adult and Child Call-back Surveys

*Relative standard error is greater than 3% - interpret with caution.

Note: Sample size for children was too small to look at each individual CAM.

Use of Complementary and Alternative Therapy to Treat Asthma:

- Adults were significantly more likely to report using CAM (41.6%) compared with children, (26.3%).
- Of the adults using CAM, the majority reported using breathing techniques (71.0%).
- Analyses of demographics, socio-economic status, and cost barriers by CAM status among adults indicate (see Table 2.2.11 for analysis results):
 - Adults who use CAM were significantly more likely to live in households that earned less than \$25,000 per year (30.2%) compared with adults who were not using CAM (13.5%).
 - Adults who used CAM were also significantly more likely to have experienced cost barriers (26.0%) than those who were not using CAM (15.2%).
 - No statistically significant differences were observed by gender, age, education level, or insurance status.
 - The sample size for children was too small to conduct similar analyses.
- Analysis by control status found there were no statistically significant differences in use of CAM by control status (see Table 2.2.12 for analysis results).

2.3 Quality of Life

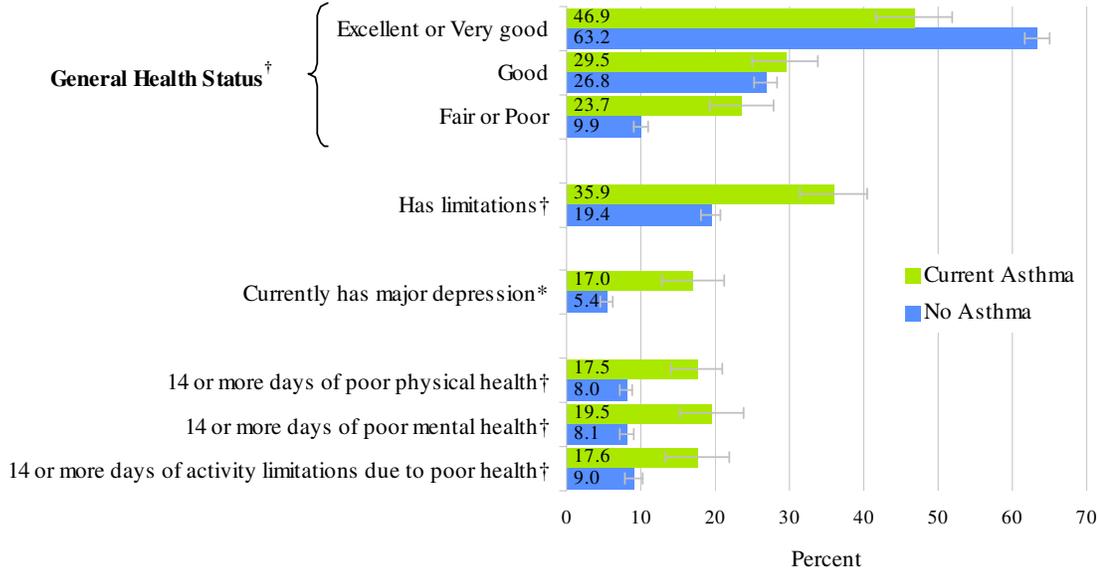
Quality of life measures convey an overall sense of well-being. Having uncontrolled asthma can negatively affect quality of life.³ Asthma not only affects the person who has asthma, but other family members as well, with unscheduled trips to the doctor or emergency department, modifications to the home environment to reduce triggers, and increased caregiver responsibilities.

The NHLBI EPR3 *Guidelines for the Diagnosis and Management of Asthma* recommend that health care providers periodically assess quality of life and related loss of physical function for people with asthma. One of the goals of asthma treatment related to controlling symptoms, reducing the risk of exacerbations, and preventing asthma-related death is improving quality of life for people who have asthma. Monitoring health-related quality of life can also help predict health care utilization and for this reason may be a useful method for identifying patients who are at risk of exacerbations.³

Quality of Life Indicators by Asthma Status

Based on the NHLBI EPR 3 *Guidelines for the Diagnosis and Management of Asthma*, people with asthma should be able to live healthy, normal lives and their asthma should have minimal if any impact on their quality of life. As indicated on page 2-25, people with well controlled asthma experience similar levels of quality of life as those who did not have asthma. This finding is consistent with the literature on asthma control and quality of life.^{10,12}

Figure 2.3.1
Selected quality of life indicators for adults 18+ years old by asthma status -
New Hampshire 2006 & 2008



Data Source: *2006 NH BRFSS and †2008 NH BRFSS

Selected Quality of Life Indicators among Adults by Asthma Status:

Adults with asthma were:

- Significantly less likely to report excellent or very good general health (46.9%) compared with adults who did not have asthma (63.2%) and more than twice as likely to report fair or poor health (23.7%) compared with those without asthma (9.9%).
- Approximately 1.8 times more likely to report having activity limitations (35.9%) compared with adults who did not have asthma (19.4%).
- More than 3 times as likely to have major depression (17.0%) compared with adults who did not have asthma (5.4%).
- More than twice as likely to report having 14 or more days of poor physical health in the past 30 days (17.5%) compared to adults without asthma (8.0%).
- More than twice as likely to report having 14 or more days of poor mental health in the past 30 days (19.5%) compared to adults without asthma (8.1%)
- They were also almost twice as likely to indicate that their poor physical or mental health kept them from doing their normal activities on 14 or more days in the past 30 days (17.6% for adults with current asthma and 9.0% for adults without current asthma)..

The 14-day minimum period was selected because a similar period is often used by clinicians and clinical researchers as a marker for clinical depression and anxiety disorders, and a longer duration of reported symptoms is associated with a higher level of activity limitation.^{23,24}

On average, adults with current asthma reported having 3 more days of poor physical and mental health in the past 30 days compared with adults who did not have asthma and 2.4 more days of not being able to do their normal activities in the last 30 days due to their physical and mental health.

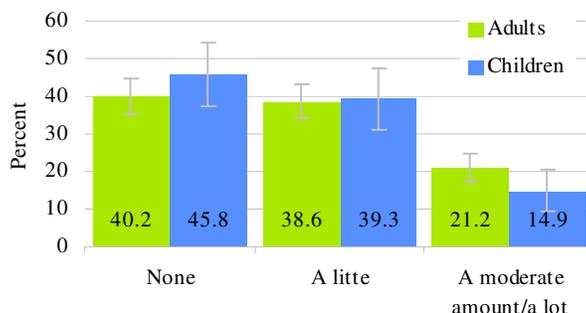
See Table 2.3.1 at the end of this chapter for data presented in Figure 2.3.1.

Quality of Life Indicators Directly Associated with Current Asthma Status

Activity Limitations due to Asthma among Adults and Children in New Hampshire:

Approximately 60% of adults and 54% of children indicated that they experienced activity limitations due to their asthma.

Figure 2.3.2
The amount of activity limitations adults 18+ years old and children < 18 years old with current asthma experience due to their asthma - New Hampshire, 2006-2008



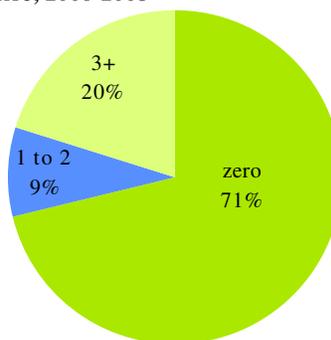
Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

Missed Work because of Asthma:

Approximately 30% of adults missed one or more days of work in the last 12 months due to their asthma.

See Chapter 5 for information on Work-Related Asthma.

Figure 2.3.3
Number of times adults 18+ years old with current asthma missed work in the last 12 months due to their asthma - New Hampshire, 2006-2008



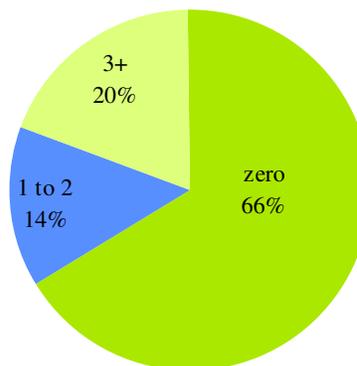
Data Source: 2006-2008 NH BRFSS Adult Asthma Call-back Survey

Missed School because of Asthma:

Approximately 30% of school age children missed one or more days of school in the last 12 months due to their asthma.

See Chapter 5 for information on Asthma in Schools.

Figure 2.3.4
Number of times school age children <18 years old with current asthma missed school in the last 12 months due to their asthma - New Hampshire, 2006-2008

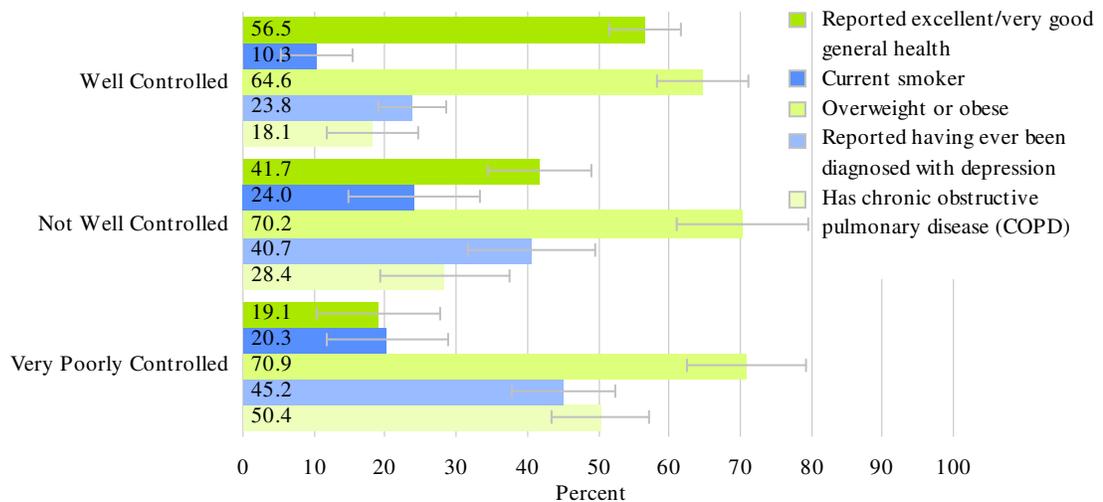


Data Source: 2006-2008 NH BRFSS Child Asthma Call-back Survey

See Table 2.3.2 at the end of this chapter for point estimates and confidence intervals for data presented in Figures 2.3.3 –2.3.5.

Quality of Life and Co-morbidities by Control Status

Figure 2.3.5
Percent of adults 18+ years old with current asthma within each control status who reported having the following health status and comorbidities - New Hampshire, 2006-2008



Data Source 2006-2008 NH BRFSS Adult Asthma Call-back Survey

- Adults who did not have asthma were significantly more likely to report excellent or very good general health status compared with adults who did have asthma (*Figure 2.3.1*). However, there were no statistically significant differences found in the percentage of adults with “well controlled” asthma who reported excellent or very good general health status compared with adults who did NOT have asthma (*Figure 2.3.1*). Reported health status declined dramatically as control status worsened. Only 41.7% of adults with “not well controlled” asthma and 19.1% of adults with “very poorly controlled” asthma reported excellent health.
- Adults with “not well controlled” asthma were more likely to report being current smokers and having ever been diagnosed with depression compared with adults who had “well controlled” asthma.
- Adults with “not well” or “very poorly” controlled asthma were significantly more likely to report having ever been diagnosed with depression and having COPD compared with adults who had “well controlled” asthma.

For children, control status and quality of life were assessed using two different surveys. Since it is not possible to link the results of these surveys, similar analysis by control status could not be conducted.

See Table 2.3.3 at the end of this section for point estimates and confidence intervals for data presented in Figure 2.3.5.

Supporting Tables

Table 2.1.4
Level of asthma control among adults 18+ years old and children <18 years old with current asthma - New Hampshire, 2006-2008

	Adults		Children	
	[Figure 2.1.1]		[Figure 2.1.2]	
	Percent	95% CI	Percent	95% CI
Well Controlled	54.7	(50.1 - 59.3)	66.0	(58.0 - 74.0)
Not Well Controlled	23.9	(20.1 - 27.8)	20.0	(14.4 - 25.6)
Very Poorly Controlled	21.3	(17.9 - 24.8)	14.0	(7.1 - 20.9)

Data Source: 2006-2008 NH BRFSS Adult and Child Call-back Surveys

Table 2.1.5
Prevalence of control status among adults 18+ years old by demographic and socioeconomic characteristics - New Hampshire, 2006-2008 [Figure 2.1.3]

	Well Controlled		Not Well Controlled		Very Poorly Controlled	
	Percent	95% CI	Percent	95% CI	Percent	95% CI
Total	54.7	(50.1 - 59.3)	23.9	(20.1 - 27.8)	21.3	(17.9 - 24.8)
Gender						
Male	60.4	(51.7 - 69.2)	25.2	(17.4 - 33.1)	14.3	(8.9 - 19.8)
Female	51.8	(46.6 - 56.9)	23.3	(19.0 - 27.5)	25.0	(20.7 - 29.2)
Age Group						
18-34	65.2	(54.9 - 75.5)	21.7	(13.0 - 30.4)	13.1	(6.2 - 20.1)
35-64	51.6	(46.4 - 56.7)	25.2	(20.6 - 29.9)	23.2	(19.0 - 27.4)
65+	43.2	(34.1 - 52.3)	24.5	(16.8 - 32.2)	32.3	(23.7 - 40.8)
Household Income						
Less than \$24,999	42.8	(31.8 - 53.9)	20.4	(12.7 - 28.1)	36.8	(27.7 - 46.0)
\$25,000-\$49,999	50.2	(41.0 - 59.4)	26.6	(17.8 - 35.3)	23.3	(16.2 - 30.4)
\$50,000 and higher	62.0	(55.6 - 68.4)	24.9	(19.3 - 30.5)	13.2	(9.1 - 17.2)
Education Level						
Less than or equal to high school graduate/GED	47.7	(38.2 - 57.2)	23.0	(15.0 - 30.9)	29.3	(21.5 - 37.2)
Some College and college graduate	57.5	(52.3 - 62.7)	24.3	(19.9 - 28.8)	18.2	(14.5 - 21.9)
Health Insurance Status						
Has Insurance	55.8	(51.3 - 60.4)	23.1	(19.2 - 26.9)	21.1	(17.6 - 24.6)
No Insurance	46.2	(28.5 - 63.9)	30.5	(14.4 - 46.5)	23.4	(10.3 - 36.5)
Experienced Cost Barriers						
Yes	30.5	(19.2 - 41.7)	25.7	(16.3 - 35.2)	43.8	(32.7 - 54.9)
No	60.8	(56.0 - 65.5)	23.0	(18.9 - 27.1)	16.2	(13.2 - 19.3)

Data Source: 2006-2008 NH BRFSS Adult Asthma Call-back Survey

Table 2.1.6
Percentage of adults 18+ years old and children <18 years old with current asthma who exhibit the characteristics listed below - New Hampshire, 2006-2008

	Adults		Children	
	Percent	95% CI	Percent	95% CI
Asthma Severity [Figure 2.1.4]				
Intermittent Asthma	36.0	(31.4 - 40.5)	49.0	(40.4 - 57.5)
Persistent Asthma	64.0	(59.5 - 68.6)	51.0	(42.5 - 59.6)
Of the 64.0% of adults and 51.0% of children with current asthma who have <i>persistent asthma</i> , % who exhibit the following levels of asthma control [Figure 2.1.5]				
Well Controlled Asthma	29.0	(23.5 - 34.5)	31.3	(20.6 - 42.0)
Not Well Controlled Asthma	37.6	(32.1 - 43.0)	40.4	(29.5 - 51.3)
Very Poorly Controlled Asthma	33.5	(28.4 - 38.5)	28.3	(16.3 - 40.3)
Of the 54.7% of adults and 66.0% of children with current asthma who have <i>well controlled asthma</i> , % who have intermittent versus persistent asthma [Figure 2.1.6]				
Intermittent Asthma	66.0	(59.6 - 72.4)	75.4	(66.6 - 84.2)
Persistent Asthma	34.0	(27.6 - 40.4)	24.6	(15.8 - 33.4)

Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

Table 2.2.3
Asthma symptoms and episodes among adults 18+ years old and children < 18 years old with current asthma - New Hampshire, 2006-2008 [Figure 2.2.1]

	Adults		Children	
	Percent	95% CI	Percent	95% CI
Symptom free for the last two weeks	38.9	(34.3 - 43.5)	61.5	(53.4 - 69.7)
Had 9 or more days with symptoms in the last 30 days	36.0	(31.6 - 40.4)	13.2	(7.0 - 19.4)
Had 3 or more nighttime symptoms in the last 30 days	18.6	(15.2 - 22.0)	9.7*	(4.0 - 15.4)
Had 2 or more asthma episodes/attacks in the last 3 months	28.3	(23.9 - 32.7)	22.1	(14.9 - 29.2)
Had 1 or more urgent visits for asthma in the last 12 months	20.7	(17.2 - 24.2)	29.3	(22.1 - 36.4)
Had 1 or more ED visits for asthma in the last 12 months	10.1	(7.5 - 12.6)	9.5	(4.4 - 14.6)

Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

* Relative standard error is greater than 30% - interpret with caution.

Additional Detail on Table 2.2.3

Asthma symptoms and episodes among adults 18+ years old and children < 18 years old with current asthma - New Hampshire, 2006-2008 (provided as a supplement to Table 2.2.3)

	Adults		Children	
	Percent	95% CI	Percent	95% CI
Number of days symptom free in the last two weeks				
none	20.3	(16.8 - 23.9)	7.1	(3.7 - 10.5)
1 to 6	14.4	(11.0 - 17.8)	7.3*	(1.8 - 12.8)
7 to 13	26.3	(22.1 - 30.6)	24.1	(17.1 - 31.0)
14- everyday	38.9	(34.3 - 43.5)	61.5	(53.4 - 69.7)
Number of days had symptoms in the last 30 days				
none	33.1	(28.7 - 37.5)	49.9	(40.8 - 59.1)
1 to 8	30.9	(26.3 - 35.5)	36.8	(28.1 - 45.6)
9 to 29	19.5	(15.9 - 23.1)	10.6	(4.9 - 16.3)
every day but NOT all the time	7.8	(5.6 - 10.0)	0.6*	(-0.3 - 1.5)
every day all the time	8.7	(6.4 - 11.0)	2.1*	(-0.4 - 4.5)
Number of days had nighttime symptoms in the last 30 days				
none	76.1	(72.2 - 80.1)	82.3	(75.6 - 89.1)
1 to 2	5.2	(2.7 - 7.7)	7.9	(4.0 - 11.9)
3 to 12	10.5	(7.8 - 13.2)	5.8*	(1.8 - 9.8)
13 to 30	8.1	(5.9 - 10.4)	3.9*	(-0.4 - 8.2)
Number of days had an asthma episode or attack in the last 3 months				
none	58.5	(53.8 - 63.1)	62.9	(54.8 - 71.0)
1	13.2	(10.2 - 16.3)	15.1	(9.5 - 20.7)
2	9.6	(6.2 - 13.1)	6.0*	(2.0 - 10.0)
3 to 5	9.5	(7.0 - 12.0)	9.9	(4.9 - 14.9)
6 to 10	4.1	(2.4 - 5.7)	2.4*	(0.2 - 4.6)
11+	5.1	(3.0 - 7.2)	3.7*	(0.1 - 7.4)
Number of urgent visits for asthma in the last 12 months				
none	79.3	(75.8 - 82.8)	70.7	(63.6 - 77.9)
1	10.3	(7.7 - 12.9)	17.7	(11.6 - 23.9)
2	6.0	(3.8 - 8.1)	3.7*	(0.5 - 6.8)
3+	4.5	(2.9 - 6.0)	7.9*	(3.3 - 12.5)
Number of emergency room visits for asthma in the last 12 months				
none	90.4	(87.9 - 92.9)	90.5	(85.4 - 95.6)
1	5.3	(3.5 - 7.0)	8.0*	(3.3 - 12.7)
2+	4.4	(2.4 - 6.3)	1.5*	(-0.7 - 3.7)

Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

* Relative standard error is greater than 30% - interpret with caution.

Table 2.2.4
Percent of adults 18+ years old with current asthma who exhibit the exacerbation and utilization characteristics listed below by control status - New Hampshire, 2006-2008 [Figure 2.2.2]

		Adults			Children	
		Well Controlled	Not Well Controlled	Very Poorly Controlled	Well Controlled	Not Well/Very Poorly Controlled
Had a routine asthma check up in the last 12 months	Percent	51.0	60.4	77.3	69.2	82.9
	95% CI	(44.3 - 57.6)	(51.3 - 69.4)	(69.7 - 84.9)	(58.3 - 80.1)	(69.5 - 96.2)
Han an asthma attack/episode in the last 3 months	Percent	27.9	57.3	60.0	28.3	54.7
	95% CI	(21.5 - 34.3)	(48.2 - 66.4)	(51.3 - 68.8)	(18.9 - 37.6)	(39.7 - 69.8)
Had an urgent visit for asthma in the last 12 months	Percent	12.5	23.5	39.5	29.9	28.1
	95% CI	(8.5 - 16.5)	(16.0 - 31.0)	(31.1 - 47.9)	(20.7 - 39.2)	(16.0 - 40.1)
Had an emergency department visit for asthma in the last 12 months	Percent	4.4	11.4	23.1	7.1*	14.4*
	95% CI	(2.3 - 6.5)	(5.2 - 17.5)	(16.0 - 30.2)	(1.5 - 12.7)	(4.3 - 24.5)

Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

* Relative standard error is greater than 30% -interpret with caution.

Note: Due to small numbers, "Not Well Controlled" and "Very Poorly Controlled" asthma were combined for children.

Table 2.2.5
Asthma education among adults 18 years or older and children[‡] less than 18 years old with current asthma - New Hampshire, 2006-2008 [Figure 2.2.3]

	Adults		Children [‡]	
	Percent	95% CI	Percent	95% CI
Taught how to recognize early signs or symptoms of an asthma attack	69.0	(64.5 - 73.5)	81.1	(74.2 - 88.0)
Taught what to do during an asthma episode or attack	82.6	(78.8 - 86.3)	92.7	(87.5 - 97.8)
Taught how to use a peak flow meter †	51.4	(46.8 - 56.1)	61.0	(50.8 - 71.3)
Ever given an asthma action plan	26.3	(22.4 - 30.1)	45.9	(36.9 - 55.0)
Minimum standard of asthma education ‡	20.6	(17.1 - 24.1)	33.7	(24.0 - 43.3)
Ever taken an asthma management class	8.1	(6.0 - 10.1)	8.0*	(3.3 - 12.7)
Of those on an inhlaer, % who indicated that a healthcare provider told them how to use an inhaler and watched them use it	79.6	(75.7 - 83.5)	87.3	(81.0 - 93.5)

Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

* Relative standard error is greater than 30% -interpret with caution.

†For children, the analysis was limited to children 5-17 years old.

‡Minimum standard of asthma education = "yes" to all the indicators above it. For children, the measure equals "yes" to all the indicators above it for children 5-17 and "yes" to all but the peak flow meter question for children 0-4 years old.

‡For children, either the child or adult reporting about the child may have received instruction

Table 2.2.6

Percent of adults 18 years or older and children less than 18 years old with current asthma who had asthma education by control status - New Hampshire, 2006-2008

		Adults			Children [£]	
		Well controlled	Not Well controlled	Very Poorly Controlled	Well controlled	Not Well/ Very Poorly Controlled
Taught how to recognize early signs or symptoms of an asthma attack	Percent	68.1	69.2	71.0	78.5	86.4
	95% CI	(61.6 - 74.5)	(60.3 - 78.1)	(62.9 - 79.0)	(69.4 - 87.5)	(73.2 - 99.6)
Taught what to do during an asthma episode or attack	Percent	81.4	85.7	81.9	91.8	94.4
	95% CI	(76.0 - 86.8)	(79.5 - 92.0)	(74.4 - 89.4)	(84.6 - 99.0)	(89.1 - 99.7)
Taught how to use a peak flow meter	Percent	43.9	55.9	65.8	58.1	†
	95% CI	(37.4 - 50.4)	(46.8 - 65.0)	(58.0 - 73.6)	(45.1 - 71.2)	
Ever given an asthma action plan	Percent	23.0	28.0	32.8	46.2	45.5
	95% CI	(18.0 - 27.9)	(20.2 - 35.8)	(24.3 - 41.3)	(34.8 - 57.6)	(30.2 - 60.8)
Minimum standard of asthma education	Percent	16.4	25.4	26.0	30.9	†
	95% CI	(12.1 - 20.7)	(17.7 - 33.0)	(18.0 - 33.9)	(18.6 - 43.1)	
Ever taken an asthma management class	Percent	7.2	6.5*	12.1	7.5*	9.0*
	95% CI	(4.3 - 10.0)	(2.7 - 10.3)	(7.2 - 17.0)	(1.8 - 13.1)	(0.7 - 17.3)
Of those with current asthma, percent on an inhaler	Percent	95.8	96.0	97.0	91.2	98.3
	95% CI	(93.4 - 98.3)	(93.0 - 99.0)	(93.2 - 101)	(85.0 - 97.4)	(97.9 - 98.7)
Of those on an inhaler, % who indicated that a healthcare provider told them how to use an inhaler and watched them use it	Percent	76.3	82.2	85.1	87.6	86.7
	95% CI	(70.4 - 82.3)	(75.6 - 88.8)	(79.6 - 90.5)	(78.8 - 96.4)	(79.7 - 93.6)

Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

* Relative standard error >30% -interpret with caution.

† Total number of survey respondents was less than 50 - results not reported.

Note: Due to small numbers, "Not Well Controlled" and Very Poorly Controlled" asthma were combined for children.

£For children, either the child or adult reporting about the child may have received instruction

Table 2.2.7
Recommended vaccinations for adults 18+ years old and children <18 years old with asthma by asthma status - New Hampshire, 2007-2008 [Figure 2.2.4]

	Current Asthma		No Asthma	
	Percent	95% CI	Percent	95% CI
Adults				
Received an influenza vaccination in the last 12 months (2008)	51.7	(46.6 - 56.8)	41.7	(40.0 - 43.4)
Of those who were not vaccinated, percent who did not think they needed it or it was not recommended (2007)	31.1	(23.7 - 38.6)	44.8	(42.5 - 47.2)
Ever received a pneumococcal vaccination (2008)	39.5	(34.6 - 44.4)	24.8	(23.3 - 26.2)
Children				
Received an influenza vaccination in the last 12 months (2008)	50.9	(41.0 - 60.8)	31.6	(28.5 - 34.6)
Of those who were not vaccinated, percent who did not think their child needed it or it was not recommended (2007)	33.7	(19.5 - 47.9)	55.2	(51.2 - 59.3)

Data Source: 2007-2008 NH BRFSS

*Note: Because questions on the NH BRFSS vary from year to year, data from two years were examined; the year the data were collected is provided in parentheses next to the indicator.

Table 2.2.8
Percent of adults 18+ years old and children <18 years old with current asthma who received recommended vaccinations by control status - New Hampshire, 2006-2008

	Percent	Adults			Children	
		Well controlled	Not Well controlled	Very Poorly Controlled	Well controlled	Not Well/ Very Poorly Controlled
Received an influenza vaccination in last 12 months	55.9	50.0	58.4	48.9	58.7	
	95% CI	(49.1 - 62.7)	(41.0 - 59.0)	(49.6 - 67.1)	(37.4 - 60.3)	(44.0 - 73.4)
Ever received a pneumococcal vaccination	35.1	47.7	57.1			
	95% CI	(28.7 - 41.4)	(38.4 - 57.0)	(47.8 - 66.3)		

Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

* Relative standard error >30% -interpret with caution.

Note: Due to small numbers, "Not Well Controlled" and "Very Poorly Controlled" asthma were combined for children.

Table 2.2.9
Percent of adults 18+ years old and children <18 years old with asthma who took the medications listed below to treat their asthma - New Hampshire, 2006-2008

	Adults		Children	
	Percent	95% CI	Percent	95% CI
Ever used over-the-counter medication to treat asthma [Figure 2.2.5]	30.4	(26.0 - 34.7)	12.6	(6.9 - 18.2)
Took a prescription asthma medication in the last 3 months [Figure 2.2.6]	68.6	(64.3 - 73.0)	61.1	(52.2 - 70.1)
Took an Inhaled Short-Acting Beta2-Agonist (SABA) in the last 3 months [Figure 2.2.7]	54.9	(50.2 - 59.5)	48.4	(39.0 - 57.8)
Of those who took a SABA				
- % who took it daily	19.4	(14.9 - 24.0)	15.4	(9.0 - 21.7)
- % who took it during an asthma episode or attack	86.8	(82.4 - 91.2)	88.0	(82.3 - 93.7)
- % who took it before exercising	46.9	(40.8 - 53.1)	46.6	(36.8 - 56.4)
Took an Inhaled Corticosteroid (ICS) in the last 3 months [Figure 2.2.7]	33.4	(29.2 - 37.7)	26.2	(18.8 - 33.6)
Of those who took an ICS				
- % who took it daily	83.6	(76.8 - 90.5)		†
- % who took it during an asthma episode or attack	30.0	(22.4 - 37.6)		†
Took a Long-Acting Beta2-Agonist (LABA) in the last 3 months [Figure 2.2.7]	23.0	(19.1 - 26.9)	8.4	(3.7 - 13.1)
Of those who took a LABA				
- % who also took an ICS	97.7	(95.7 - 99.6)		†
Type of asthma medication used in the last 3 months [Figure 2.2.8]				
No prescription medication	31.5	(27.1 - 35.9)	39.8	(30.8 - 48.9)
Only rescue medication	26.4	(22.1 - 30.7)	24.9	(16.4 - 33.4)
Only control medication	12.1	(8.9 - 15.3)	7.0	(2.6 - 11.3)
Both control and rescue medication	30.1	(26.0 - 34.1)	28.3	(21.0 - 35.5)

Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

* Relative standard error >30% -interpret with caution.

† Total number of survey respondents was less than 50 - results not reported.

Table 2.2.10
Prevalence of control status among adults with current asthma by medication use in the last 3 months - New Hampshire, 2006-2008 [Figure 2.2.9]

	Well Controlled		Not Well Controlled		Very Poorly Controlled	
	Percent	95% CI	Percent	95% CI	Percent	95% CI
Took no prescription medication	76.6	(69.4 - 83.8)	14.8	(8.5 - 21.2)	8.5	(4.0 - 13.1)
Took ONLY rescue medication	47.7	(37.8 - 57.6)	26.4	(17.6 - 35.1)	25.9	(18.2 - 33.7)
Took a controller medication	43.9	(36.8 - 50.9)	27.9	(22.1 - 33.7)	28.2	(22.6 - 33.9)

Data Source: 2006-2008 NH BRFSS Asthma Call-back Survey

Table 2.2.11
Prevalence of medication use (past 3 months) among adults with current asthma by control status- New Hampshire, 2006-2008 [Figure 2.2.10]

	Took No Asthma Medications		Took Only a Rescue Medication		Took a Controller Medication	
	Percent	95% CI	Percent	95% CI	Percent	95% CI
Well Controlled	43.1	(36.6 - 49.7)	23.0	(17.1 - 29.0)	33.8	(27.4 - 40.3)
Not Well Controlled	19.6	(11.5 - 27.6)	29.9	(20.7 - 39.10)	50.5	(41.1 - 59.9)
Very Poorly Controlled	12.3	(6.0 - 18.6)	32.0	(23.5 - 40.5)	55.7	(46.8 - 64.6)

Data Source: 2006-2008 NH BRFSS Asthma Call-back Survey

Table 2.2.12
Demographic characteristics of adults with asthma using complementary and alternative medicine (CAM) and not using CAM, 2006-2008

	Use CAM		Do NOT use CAM	
	Percent	95% CI	Percent	95% CI
Gender				
Male	35.5	(27.8 - 43.2)	32.3	(26.5 - 38.1)
Female	64.5	(56.8 - 72.2)	67.7	(61.9 - 73.5)
Age				
18-34	31.0	(22.8 - 39.1)	28.8	(22.2 - 35.3)
35-64	58.9	(51.2 - 66.7)	58.7	(52.5 - 64.9)
65+	10.1	(6.9 - 13.3)	12.6	(9.7 - 15.4)
Education level				
less than or equal to high school graduate/GED	28.3	(21.3 - 35.2)	27.2	(21.9 - 32.5)
Some college and college graduate	71.7	(64.8 - 78.7)	72.8	(67.5 - 78.1)
Household income				
less than \$24,999	30.2	(23.3 - 37.2)	13.5	(10.0 - 17.0)
\$25,000-\$49,999	20.8	(15.1 - 26.6)	24.0	(18.9 - 29.2)
\$50,000 +	49.0	(41.4 - 56.5)	62.5	(56.7 - 68.2)
Health Insurance Status				
Yes	85.6	(78.9 - 92.2)	91.3	(87.6 - 95.1)
No	14.4	(7.8 - 21.1)	8.7	(4.9 - 12.4)
Cost barriers*				
Yes	26.0	(19.3 - 32.7)	15.2	(10.6 - 19.9)
No	74.0	(67.3 - 80.7)	84.8	(80.1 - 89.4)

Data Source: 2006-2008 NH BRFSS Adult Asthma Call-back Survey

*Statistically significant differences between adults who use CAN and who do not based on a Chi Square p-value of <0.05

Table 2.2.13
Percent of adults 18+ years old with current asthma who use complementary and alternative medicines (CAM) to treat their asthma by control status - New Hampshire, 2006-2008 [not presented in a Figure]

	Well Controlled Asthma		Not Well Controlled Asthma		Very Poorly Controlled Asthma	
	Percent	95% CI	Percent	95% CI	Percent	95% CI
Use CAM	38.6	(32.1 - 45.0)	43.8	(34.7 - 52.8)	47.1	(38.4 - 55.8)
Do NOT Use CAM	61.4	(55.0 - 67.9)	56.2	(47.2 - 65.3)	52.9	(44.2 - 61.6)

Data Source: 2006-2008 NH BRFSS Adult Asthma Call-back Survey

Table 2.3.1
Selected quality of life indicators for adults 18+ years old and children <18 years old by asthma status -
New Hampshire, 2006-2008

		Adults [Figure 2.3.1]		Children [Figure 2.3.2]			
		Current Asthma	No Asthma	Current Asthma	No Asthma		
General Health Status (Adults: 2008 NH BRFSS, Children: 2007 NSCH)							
Excellent or Very good	Percent	46.9	63.2	73.5	92.3		
	95% CI	(41.8 - 52.0)	(61.6 - 64.9)	(63.9 - 83.1)	(90.4 - 94.3)		
Good	Percent	29.5	26.8	22.2	5.7		
	95% CI	(25.1 - 33.9)	(25.3 - 28.4)	(13.0 - 31.4)	(4.1 - 7.3)		
Fair or Poor	Percent	23.7	9.9	4.3*	2.0*		
	95% CI	(19.4 - 28.0)	(8.9 - 10.9)	(0.2 - 8.5)	(0.8 - 3.1)		
Activity Limitations (Adults: 2008 NH BRFSS, Children: 2007 NSCH)							
Has Limitations	Percent	35.9	19.4	13.7	4.0		
	95% CI	(31.3 - 40.6)	(18.2 - 20.7)	(7.5 - 19.8)	(2.7 - 5.3)		
No Limitations	Percent	64.1	80.6	86.3	96.0		
	95% CI	(59.4 - 68.7)	(79.3 - 81.8)	(80.2 - 92.5)	(94.7 - 97.3)		
Depression Status (2006 NH BRFSS)							
Currently has major depression	Percent	17.0	5.4	Data Not Collected			
	95% CI	(12.9 - 21.1)	(4.6 - 6.3)				
Does NOT have major depression	Percent	83.0	94.6				
	95% CI	(78.9 - 87.1)	(93.7 - 95.4)				
Missed School (2007 NSCH)							
Missed 4+ days of school	Percent	Data Not Collected		54.9	35.7		
	95% CI			(43.8 - 66.0)	(32.1 - 39.2)		
Missed <4 days of school	Percent			64.3	64.3		
	95% CI			(34.0 - 56.2)	(60.8 - 67.9)		
Mean number of days missed	Mean	Data Not Collected		6.1	3.7		
	95% CI			(4.9 - 7.3)	(3.3 - 4.1)		
Median number of days missed	Median			4	2		
	Range			(0 - 40)	(0 - 40)		
Number of days of poor physical health in the last 30 days (2008 NH BRFSS)							
<14 days	Percent	82.5	92.0	Data Not Collected			
	95% CI	(79.1 - 85.8)	(91.1 - 92.9)				
14+ days	Percent	17.5	8.0				
	95% CI	(14.2 - 20.9)	(7.1 - 8.9)				
mean number of days of poor physical health	Mean	5.9	2.9	Data Not Collected			
	95% CI	(5.0 - 6.8)	(2.6 - 3.1)				
Number of days of poor mental health in the last 30 days (2008 NH BRFSS)							
<14 days	Percent	80.5	91.9			Data Not Collected	
	95% CI	(76.2 - 84.7)	(90.9 - 92.8)				
14+ days	Percent	19.5	8.1				
	95% CI	(15.3 - 23.8)	(7.2 - 9.1)				
mean number of days of poor mental health	Mean	5.9	2.9	Data Not Collected			
	95% CI	(4.8 - 6.9)	(2.6 - 3.1)				
Of those reporting at least one day of poor physical or mental health in the last 30 days, number of days of activity limitations due to poor health in the last 30 days (2008 NH BRFSS)							
<14 days	Percent	82.4	91.0			Data Not Collected	
	95% CI	(78.1 - 86.8)	(89.7 - 92.2)				
14+ days	Percent	17.6	9.0				
	95% CI	(13.2 - 21.9)	(7.8 - 10.3)				
mean number of days of activity limitations due to poor health	Mean	5.5	3.1	Data Not Collected			
	95% CI	(4.5 - 6.5)	(2.8 - 3.4)				

Data Sources: 2006 & 2008 NH BRFSS and 2007 NSCH

*Relative standard error is greater than 30% - interpret with caution.

Note: Because questions on the NH BRFSS vary from year to year, data from two years were examined; the year the data were collected is provided in parentheses next to the indicator.

Table 2.3.2
Selected quality of life indicators for adults 18+ years old and children <18 years old directly associated with current asthma status - New Hampshire, 2006-2008

	Adults		Children	
	Percent	95% CI	Percent	95% CI
Amount of activity limitations experience due to their asthma [Figure 2.3.3]				
none	40.2	(35.6 - 44.8)	45.8	(37.4 - 54.3)
a little	38.6	(34.0 - 43.1)	39.3	(31.0 - 47.6)
a moderate amount or a lot	21.2	(17.6 - 24.9)	14.9	(9.3 - 20.4)
Number of days missed work due to their asthma [Figure 2.3.4]				
zero	71.1	(67.1 - 75.1)	Data Not Collected	
1 to 2	8.6	(6.0 - 11.2)		
3+	20.3	(16.8 - 23.8)		
Number of days missed school due to their asthma [Figure 2.3.5]				
zero	Data Not Collected		66.2	(57.5 - 74.9)
1 to 2			14.3	(7.8 - 20.7)
3+			19.5	(12.8 - 26.2)

Data Source: 2006-2008 NH BRFSS Adult and Child Asthma Call-back Surveys

Table 2.3.3
Percent of adults 18+ years old with current asthma who reported having the following health status and co-morbidities by control status - New Hampshire, 2006-2008 [Figure 2.3.5]

	Well Controlled		Not Well Controlled		Very Poorly Controlled	
	Percent	95% CI	Percent	95% CI	Percent	95% CI
General health status						
Excellent or Very good	56.5	(49.9 - 63.0)	41.7	(32.7 - 50.7)	19.1	(12.3 - 26.0)
Good	32.1	(25.7 - 38.5)	32.9	(24.4 - 41.5)	31.3	(23.5 - 39.2)
Fair or Poor	11.5	(8.0 - 15.0)	25.3	(17.1 - 33.6)	49.5	(40.8 - 58.2)
Smoking status						
Non smoker	89.7	(85.1 - 94.3)	76.0	(67.1 - 84.9)	79.7	(72.5 - 87.0)
Current smoker	10.3	(5.7 - 14.9)	24.0	(15.1 - 32.9)	20.3	(13.0 - 27.5)
Weight status						
Neither overweight nor obese	35.4	(28.9 - 41.9)	29.8	(20.6 - 39.0)	29.1	(20.7 - 37.5)
Overweight or Obese	64.6	(58.1 - 71.1)	70.2	(61.0 - 79.4)	70.9	(62.5 - 79.3)
Ever been diagnosed with depression						
Yes	23.8	(18.7 - 29.0)	40.7	(31.5 - 49.9)	45.2	(36.6 - 53.7)
No	76.2	(71.0 - 81.3)	59.3	(50.1 - 68.5)	54.8	(46.3 - 63.4)
Ever been diagnosed with chronic obstructive pulmonary disease (COPD)						
Yes	18.1	(13.1 - 23.2)	28.4	(21.2 - 35.6)	50.4	(41.8 - 59.0)
No	81.9	(76.8 - 86.9)	71.6	(64.4 - 78.8)	49.6	(41.0 - 58.2)

Data Source: 2006-2008 NH BRFSS Adult Asthma Call-back Survey

Glossary

Asthma Status

- Current Asthma** = Proportion of respondents who answered "Yes" to both "Have you ever been told by a doctor, nurse or other health professional that you had asthma?" and "Do you still have asthma?"
Data Source: NH BRFSS and NH BRFSS Adult and Child Asthma Call-back Surveys
- No Asthma** = Proportion of respondents who answered "No" to "Have you ever been told by a doctor, nurse or other health professional that you had asthma?"
Data Source: NH BRFSS
- Former Asthma** = Proportion of respondents who answered "Yes" to "Have you ever been told by a doctor, nurse or other health professional that you had asthma?" and "No" to "Do you still have asthma?" Since the number of people who report having former asthma is relatively small, results for people with former asthma are not included in this report.

Asthma Control Status

Asthma control was calculated based on responses to the following question in the NH BRFSS Adult and Child Call-back Surveys:

- “During the past 30 days, on how many days did you have any symptoms of asthma?”, “Do you have symptoms all the time?”
- “During the past 30 days, on how many days did symptoms of asthma make it difficult for you to stay asleep?”
- In the past 3 months, have you taken prescription asthma medications using an inhaler? In the past 3 months, what prescription asthma medications did you take by inhaler?, “How many times per day or per week do you use [list of medications]?”

See Appendix B Technical Notes and Methods for a complete description of how these questions were used to calculate control. Available at: www.dhhs.nh.gov/dphs/cdpc/asthma/publications.htm

Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figures 2.1.1, 2.1.2, 2.1.5, 2.2.2,2.2.9,2.2.10, and 2.3.6

Asthma Severity -

Asthma severity was calculated based on asthma control status, use of prescription asthma medications, and type of medication used in the last 3 months. See Appendix B Technical Notes and Methods for additional information. Available at: www.dhhs.nh.gov/dphs/cdpc/asthma/publications.htm

- Intermittent Asthma** = “Well controlled asthma” with no asthma medication or only a rescue medication. Rescue medications were identified based on the name of the medication respondents provided in response to the following questions: “In the past 3 months, what prescription asthma medications did you take by inhaler [nebulizer]?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figures 2.1.4 and 2.1.6
- Persistent Asthma** = “Well controlled asthma” with controller medication, or “not well” or “very poorly” controlled asthma. Controller medications were identified based on the name of the medication respondents provided in response to the following questions: “In the past 3 months, what prescription asthma medications did you take by inhaler [syrup, pill, or nebulizer]?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figures 2.1.4 - 2.1.6

Asthma Symptoms and Episodes

- Symptom Free for the Last Two Weeks = Proportion of respondents who answered “14” or more days to “During the past two weeks, on how many days were you/(was {child’s name}) completely symptom-free, that is no coughing, wheezing, or other symptoms of asthma?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.1
- Had 9 or More Days with Symptoms in the Last 30 Days = Proportion of respondents who answered “9” or more days to “During the past 30 days, on how many days did you/{child’s name} have any symptoms of asthma?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.1
- Had 3 or More Nighttime Symptoms in the Last 30 Days = Proportion of respondents who answered “3” or more days to “During the past 30 days, on how many days did symptoms of asthma make it difficult for you/{child’s name} to stay asleep?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.1
- Had 2 or More Asthma Episodes/ Attacks in the Last 3 Months = Proportion of respondents who answered “2” or more episodes/attacks to “During the past three months, how may asthma episodes or attacks have you/ (has {child’s name}) had?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.1 and Table 2.2.1
- Had an Urgent Visit due to Asthma in the Last 12 Months = Proportion of respondents who answered “1” or more urgent visits to “During the past 12 months, how many times did you/ {child’s name} see a doctor or other health professional for urgent treatment of worsening asthma symptoms or for an asthma episode or attack?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figures 2.2.1 and 2.2.2
- Had an Emergency Room Visit for Asthma in the Last 12 Months = Proportion of respondents who answered “Yes” to “During the past 12 months, have you (has {child’s name}) had to visit an emergency room or urgent care center because of your (his/her) asthma?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figures 2.2.1 and 2.2.2

Asthma Symptoms and Utilization by Control Status

- Had a Routine Asthma Check Up in the Last 12 Months = Proportion of respondents who answered “1” or more to “During the past 12 months, how many times did you see a doctor or other health professional for a routine checkup for your asthma?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.2
- Had an Asthma Attack in the Last 3 Months = Proportion of respondents who answered “1” or more episodes/attacks to “During the past three months, how may asthma episodes or attacks have you/ (has {child’s name}) had?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys– Figure 2.2.2
- Had an Urgent Care Visit for Asthma in the Last 12 Months = See “Had an urgent care visit for asthma in the last 12 months” under **Asthma Symptoms and Episodes**
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.2
- Had an Emergency Room Visit for Asthma in the Last 12 Months = See “Had an emergency room visit for asthma in the last 12 months” under **Asthma Symptoms and Episodes**
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.2

Asthma Education

- Taught How to Recognize Early Signs or Symptoms of an Asthma Episode/Attack = Proportion of respondents who answered “Yes” to “Has a doctor or health professional ever taught you /(you or {child’s name}) how to recognize early signs or symptoms of an asthma episode?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.3
- Taught What to do During an Asthma Episode/Attack = Proportion of respondents who answered “Yes” to “Has a doctor or health professional ever taught you /(you or {child’s name}) what to do during an asthma episode or attack?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.3
- Taught How to Use a Peak Flow Meter = Proportion of respondents who answered “Yes” to “Has a doctor or health professional ever taught you /(you or {child’s name}) how to use a peak flow meter to adjust your daily medications?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.3
- Ever Given an Asthma Action Plan = Proportion of respondents who answered “Yes” to “Has a doctor or other health professional EVER given you /(you or {child’s name}) an asthma action plan?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.3
- Minimum Standard of Asthma Education = Proportion of respondents who answered “Yes” to all the following questions: “Has a doctor or other health professional ever taught you /(you or {child’s name}): 1) How to recognize early signs or symptoms of an asthma episode? 2) What to do during an asthma episode or attack? 3) How to use a peak flow meter to adjust daily medications?” - for children, excluded children 0-4 for peak flow question; and “Has a doctor or other health professional EVER given you /(you or {child’s name}) an asthma action plan?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.3
- Ever Taken an Asthma Management Class = Proportion of respondents who answered “Yes” to “Have you /(you or {child’s name}) ever taken a course or class on how to manage your asthma?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.3
- Of Those on an Inhaler, % Who Indicated that a Health Care Provider Told Them How to Use the Inhaler and Watched Them Use It = Of respondents who answered “Yes” to “Have you/{child’s name} ever used a prescription inhaler?”, the proportion of respondents who also answered “Yes” to “Did a doctor or other health professional show you how to use the inhaler?” and “Yes” to “Did a doctor or other health professional watch you use the inhaler?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.3

Asthma Education by Control Status - see Asthma Education

Recommended Vaccinations for People with Asthma — Adults

- Received an Influenza Immunization in the Last 12 Months = Proportion of respondents who answered “Yes” to “During the past 12 months, have you had a flu shot?” and/or “During the past 12 months, have you had a flu vaccine that was sprayed in your nose?”
Data Source: NH BRFSS and NH BRFSS Adult Asthma Call-back Survey - Figure 2.2.4
- Of Those Who Were Not Vaccinated, Percent Who Did Not Think They Needed It or It Was Not Recommended = Of respondents who answered “No” to “During the past 12 months, have you had a flu shot?” and/or “During the past 12 months, have you had a flu vaccine that was sprayed in your nose?”, the proportion of respondents who gave a response that was categorized by interviewer as “Do not think need it/not recommended” when asked “What is the MAIN reason you have NOT received a flu vaccination for this current flu season? [The current flu season = Sept. ’06 – Mar. ’07]”. Interviewer chose one of fourteen responses based on which one most closely matched respondent's answer.
Data Source: NH BRFSS - Figure 2.2.4

Recommended Vaccinations for People with Asthma - Adults - Continued

Ever Received a Pneumococcal Vaccination = Proportion of respondents who answered “Yes” to “Have you ever had a pneumonia shot?”
 Data Source: NH BRFSS and NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.4

Recommended Vaccinations for People with Asthma — Children

Received an Influenza Immunization in the Last 12 Months = Proportion of respondents who answered “Yes” to “During the past 12 months, has [Fill: he/she] had a flu shot or flu vaccine sprayed in the nose?”
 Data Source: NH BRFSS and NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.4

Of Those Who Were Not Vaccinated, Percent Who Did Not Think Their Child Needed It or It Was Not Recommended = Of respondents who answered “No” to “During the past 12 months, has [Fill: he/she] had a flu shot or flu vaccine sprayed in the nose?”, the proportion of respondents who gave a response that was categorized by interviewer as “Do not think need it/not recommended” when asked “What is the MAIN reason [Fill: he/she] has not received a flu vaccination for this current flu season? [The current flu season = September 2007 – March 2008]” One of seven response options were chosen based on which one most closely matched respondent’s answer.
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.4

Influenza and Pneumococcal Vaccination by Control Status - see Recommended Vaccinations for Adults and Children

Asthma Medications - Prior to asking questions about prescription medications, respondents were asked to get their asthma medications so they could read the prescription names. If they couldn’t pronounce the name, they were asked to spell it. See Appendix B for a list of prescription medications and which ones were classified as rescue versus control, and as a short-acting beta₂-agonist, corticosteroid, and long-acting beta₂-agonist, available at: www.dhhs.nh.gov/dphs/cdpc/asthma/publications

Use of Over-the-Counter Medications to Treat Asthma = Proportion of respondents who answered “Yes” to “Over-the-counter medication can be bought without a doctor’s order. Have you ever used over-the-counter medication for your asthma?”
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.5

Took Prescription Asthma Medications in the Last 3 Months = Proportion of respondents who provided a valid name of a prescription asthma medication in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler [in pill form, as a syrup, using a nebulizer]?”
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.6

Inhaled Short-Acting Beta₂-Agonist (SABA) = Proportion of respondents who provided a valid name of a SABA in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler?”
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.7

Of Those Who Took a SABA, % Who Took It Daily = Of respondents who provided a valid name of a SABA in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler?”, proportion who answered “Yes” to “In the past 3 months, did you take [name of SABA medication provided] on a regular schedule everyday?”
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.7

Of Those Who Took a SABA, % Who Took It During an Asthma Episode/Attack = Of respondents who provided a valid name of a SABA in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler?”, proportion who answered “Yes” to “In the past 3 months, did you take [name of SABA medication provided] when you had an asthma episode or attack?”
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.7

Asthma Medications - Continued

Of Those Who Took a SABA, % Who Took It Before Exercising	=	Of respondents who provided a valid name of a SABA in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler?”, proportion who answered “Yes” to “In the past 3 months, did you take [name of SABA medication provided] before exercising?” Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.7
Inhaled Corticosteroid (ICS)	=	Proportion of respondents who provided a valid name of an ICS in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler?” Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.7
Of Those Who Took an ICS, % Who Took It Daily	=	Of respondents who provided a valid name of an ICS in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler?”, proportion who answered “Yes” to “In the past 3 months, did you take [name of ICS medication provided] on a regular schedule everyday?” Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.7
Of Those Who Took an ICS, % Who Took It During an Asthma Episode/Attack	=	Of respondents who provided a valid name of an ICS in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler?”, proportion who answered “Yes” to “In the past 3 months, did you take [name of ICS medication provided] when you had an asthma episode or attack?” Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.7
Long-Acting Beta2-Agnosit (LABA)	=	Proportion of respondents who provided a valid name of a LABA in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler?” Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.7
Of Those Who Took a LABA, % Who Also Took an ICS	=	Of respondents who provided a valid name of a LABA in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler?”, proportion who also provided a valid name of an ICS in response to the same question. Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.7
No Prescription Medication	=	Proportion of respondents who answered “never or 3 or more months ago” to “How long has it been since you last took asthma medication?” Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figures 2.2.8 - 2.2.10 and Table 2.2.1
Only Rescue Medication	=	Proportion of respondents who provided a valid name of a prescription medication (s) containing one or more of the following medications: short-acting beta ₂ -agonist, beta ₂ -agonist, anticholinergic, and/or adrenergic bronchodilator -in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler [as a syrup, using a nebulizer]?” and did not provide a name of a prescription medication(s) containing the chemicals listed in the “only control medication” definition described below. Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figures 2.2.8 - 2.2.10 and Table 2.2.1
Only Control Medication	=	Proportion of respondents who provided a valid name of a prescription medication (s) containing one or more of the following medications : corticosteroid, anti-inflammatory, long-acting beta ₂ -agonist, leukotriene modifier, and/or methylxanthine - in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler [in pill form, as a syrup, using a nebulizer]?” and did not provide a name of a prescription medication(s) containing the chemicals listed in the “only rescue medication” definition described above. Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figures 2.2.8 - 2.2.10 and Table 2.2.1

Asthma Medications - Continued

Both Control and Rescue Medication = Proportion of respondents who provided a valid name of a prescription medication(s) containing one or more of the following medications typically used in rescue medications: short-acting beta₂-agonist, beta₂-agonist, anticholinergic, and/or adrenergic bronchodilator AND a prescription medication(s) containing one or more of the following chemicals typically used in controller medications: corticosteroid, anti-inflammatory, long-acting beta₂-agonist, leukotriene modifier, and/or methylxanthine - in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler [in pill form, as a syrup, using a nebulizer]?”
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.2.8

Use of Asthma Medications among Adults with Two or More Asthma Attacks/Episodes in the Last Three Months

Had 2 or More Asthma Episode/ Attack in the Last 3 Months = See “Had 2 or More Asthma Episodes or Attacks in the Last 3 Months” under **Asthma Symptoms and Episodes**
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys– Table 2.2.1

Took NO Asthma Medication = See “No Prescription Medication” under **Asthma Medications**
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Table 2.2.1

Took ONLY a Rescue Medication = See “Only Rescue Medication” under **Asthma Medications**
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Table 2.2.1

Took a Controller Medication = Proportion of respondents who provided a valid name of a prescription medication(s) containing one or more of the following medications : corticosteroid, anti-inflammatory, long-acting beta₂-agonist, leukotriene modifier, and/or methylxanthine - in response to: “In the past 3 months, what prescription asthma medications did you/{child’s name} take by inhaler [in pill form, as a syrup, using a nebulizer]?”
 Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Table 2.2.1

Complementary and Alternative Therapy

Use of Complementary and Alternative Medicine (CAM) to Treat or Control Asthma = “In the past 12 months, have you/(has {child’s name}) used ... to control asthma?”

- herbs
- vitamins
- acupuncture
- acupressure
- aromatherapy
- homeopathy
- reflexology
- yoga
- breathing techniques
- naturopathy

Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys– Table 2.2.2

Quality of Life Indicators by Asthma Status - Adults

General Health Status

Excellent or Very Good = Proportion of respondents who answered “excellent or very good” to “Would you say that in general your health is: excellent, very good, good, fair, or poor?”
 Data Source: NH BRFSS - Figure 2.3.1

Good = Proportion of respondents who answered “good” to “Would you say that in general your health is: excellent, very good, good, fair, or poor?”
 Data Source: NH BRFSS - Figure 2.3.1

Fair or Poor = Proportion of respondents who answered “fair or poor” to “Would you say that in general your health is: excellent, very good, good, fair, or poor?”
 Data Source: NH BRFSS - Figure 2.3.1

Quality of Life Indicators by Asthma Status - Adults continued

- Has Limitations = Proportion of respondents who answered “Yes” to “Are you limited in any way in any activities because of physical, mental, or emotional problems?”
Data Source: NH BRFSS - Figure 2.3.1
- Currently Has Major Depression = Current Depression was calculated based on a series of questions that were designed to assess depression based on a modified version of the Patient Health Questionnaire-9 (PHQ-9) depression screening tool. This tool has been evaluated and health care providers often use it to assess whether or not their patients are depressed and the severity of their depression. See Appendix B Technical Notes and Methods available at <http://www.dhhs.nh.gov/dphs/cdpc/asthma/publications.htm> for a complete description of how current depression was calculated. Data Source: NH BRFSS- Figure 2.3.1
- 14 or More Days of Poor Physical Health = Proportion of respondents who answered “14 or more days” to “Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?”
Data Source: NH BRFSS- Figure 2.3.1
- 14 or More Days of Poor Mental Health = Proportion of respondents who answered “14 or more days” to “Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.3.1
- 14 or More Days of Activity Limitations Due to Poor Health = Of those who responded “1 or more days” to “Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?” OR “Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?”, the proportion of respondents who answered “14 or more days” to “During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?”
Data Source: NH BRFSS- Figure 2.3.1

Quality of Life Indicators by Asthma Status - Children

General Health Status

- Excellent or Very Good* = Proportion of respondents who answered “excellent or very good” to “In general, how would you describe [child’s name] health? Would you say [his/her] health is excellent, very good, good, fair, or poor?”
Data Source: NSCH - Figure 2.3.2 and 2.3.6
- Good* = Proportion of respondents who answered “good” to “In general, how would you describe [child’s name] health? Would you say [his/her] health is excellent, very good, good, fair, or poor?”
Data Source: NSCH - Figure 2.3.2
- Fair or Poor* = Proportion of respondents who answered “fair or poor” to “In general, how would you describe [child’s name] health? Would you say [his/her] health is excellent, very good, good, fair, or poor?”
Data Source: NSCH - Figure 2.3.2
- Has Limitations = Proportion of respondents who answered “Yes” to “Is [child’s name] limited or prevented in any way in [his/her] ability to do the things most children of the same age can do?”
Data Source: NSCH - Figure 2.3.2
- Missed 4+ Days of School = Proportion of respondents who answered “4 or more days” to “During the past 12 months, that is since [FILL: CURRENT MONTH, 1 YEAR AGO], about how many days did [child’s name] miss school because of illness or injury?”
Data Source: NSCH - Figure 2.3.2

Quality of Life Indicators Directly Associated with Current Asthma Status

Activities Limited Due to Asthma

- None* = Proportion of respondents who answered “not at all” to “During the past 12 months, would you say you limited your usual activities due to asthma not at all, a little, a moderate amount, or a lot?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.3.3
- A Little* = Proportion of respondents who answered “a little” to “During the past 12 months, would you say you limited your usual activities due to asthma not at all, a little, a moderate amount, or a lot?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.3.3
- A Moderate Amount or A Lot* = Proportion of respondents who answered “a moderate amount or a lot” to “During the past 12 months, would you say you limited your usual activities due to asthma not at all, a little, a moderate amount, or a lot?”
Data Source: NH BRFSS Adult and Child Asthma Call-back Surveys- Figure 2.3.3
- Missed Work Due to Asthma = Proportion of respondents who answered “ zero days”, “1 or 2 days” or “3 or more days” to “During the past 12 months, how many days were you unable to work or carry out your usual activities because of your asthma?”
Data Source: NH BRFSS Adult Asthma Call-back Survey- Figure 2.3.4
- Missed School Due to Asthma = Proportion of respondents who answered “ zero days”, “1 or 2 days” or “3 or more days” to “During the past 12 months, about how many days of school did he/she miss because of his/her asthma?” This question was only asked if respondent reported their child goes to school.

Quality of Life, Risk Factors and Co-morbidities by Control Status

- Reported Excellent/ Very Good General Health = See “General Health Status -- *excellent/very good*’ under **Quality of Life Indicators by Asthma Status - Adults**
Data Source: NH BRFSS Adult Asthma Call-back Survey - Figure 2.3.6
- Current Smoker = Proportion of respondents who answered “Yes” to “Have you smoked at least 100 cigarettes in your entire life?” and answered “Every day or Some days” to “Do you now smoke cigarettes every day, some days, or not at all?”
Data Source: NH BRFSS Adult Asthma Call-back Survey - Figure 2.3.6
- Overweight or Obese = Proportion of respondents whose body mass index (BMI) is greater than or equal to 25. BMI is calculated based on reported height and weight.
Data Source: NH BRFSS Adult Asthma Call-back Survey - Figure 2.3.6
- Reported Having Ever Been Diagnosed with Depression = Proportion of respondents who answered “Yes” to “Has a doctor or other healthcare provider EVER told you that you had an anxiety disorder (including acute stress disorder, anxiety, generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, phobia, posttraumatic stress disorder, or social anxiety disorder)?”
Data Source: NH BRFSS Adult Asthma Call-back Survey - Figure 2.3.6
- Has Chronic Obstructive Pulmonary Disease (COPD) = Proportion of respondents who answered “Yes” to any one of the following 3 questions: “Have you ever been told by a doctor or health professional that you have chronic obstructive pulmonary disease also known as COPD?”, “Have you ever been told by a doctor or other health professional that you have emphysema?” or “Have you ever been told by a doctor or other health professional that you have Chronic Bronchitis?”
Data Source: NH BRFSS Adult Asthma Call-back Survey - Figure 2.3.6

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29 Hazen Drive, Concord, NH 03301-6504
Phone: 603-271-0856 or 1-800-852-3345 ext. 0856
TDD Access: 1-8000-735-2964
Web: <http://www.dhhs.nh.gov/dphs/cdpc/asthma/index.htm>