Vermont Asthma Plan

Partnering to Help Vermonters with Asthma

December 2008

Asthma Program

healthvermont.gov

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For more information about the Asthma Program go to heathvermont.gov or contact the Vermont Department of Health at 800-464-4343.

Executive Summary

The Vermont Department of Health's Asthma Program works to improve the quality of life for people living with asthma. With funding from the Centers for Disease Control & Prevention, the Asthma Program was established in 2000 as a collaborative effort among numerous community and statewide partners. The first Vermont State Asthma Prevention Plan was published in 2003.

The 2008 Vermont Asthma Plan builds on the 2003 plan and incorporates the structure of the Vermont Blueprint for Health, the state's chronic disease prevention and management initiative. The Vermont Asthma Plan positions the state to achieve the national objective of reducing hospitalization rates from asthma by 9 percent by 2009.

In preparing this plan, the Asthma Advisory Panel examined all available data to identify populations most affected by asthma, as well as attributable risk factors and severity of asthma in Vermont. The goals of the revised 2008 Vermont Asthma Plan take into account this data, the Vermont Blueprint vision, and proven strategies for asthma care.

Goals of the 2008 Vermont Asthma Plan:

1. A comprehensive statewide asthma surveillance system will monitor progress, support evaluation and identify populations with higher rates of hospitalization or other illness severity indicators.

2. Exposure to environmental triggers will be reduced for Vermonters with asthma.

3. Vermonters with asthma, their families and other caregivers will be engaged in appropriate asthma self-management.

4. Vermonters will live in communities that support healthy lifestyles that enable them to prevent and manage chronic conditions.

5. Health care providers will use the current National Asthma Education and Prevention Program (NAEPP) Diagnosis and Treatment Guidelines to properly diagnose, treat, and assist their patients in reducing symptoms and improving self-management.

6. Health care systems will share information and adopt reimbursement strategies that lead to optimal asthma care.

The 2008 plan addresses asthma on a statewide level. However, after comprehensive review of statewide prevalence and data from segments of the population, the Asthma Advisory Panel recognized a need to also target strategies to two populations where asthma severity and prevalence indicated greater need.

Priority populations of the 2008 Vermont Asthma Plan:

- People with a lower socio-economic status (having an income less than 125 percent of the Federal Poverty level and/or less than a high school education

- People who have asthma and live in the Rutland geographic area, which has the highest rate of hospitalization for asthma in the state (17.5 per 10,000 vs. 6.9 per 10,000 for all of Vermont)

Four areas of statewide focus were chosen in developing the plan:

- Patient Self-Management
- Community
- Health Care Provider Practice
- Health Systems

The Asthma Advisory Panel will continue to assess progress. All objectives and strategies will be evaluated to determine success, address barriers, and recommend continuation or modification of these efforts.

Acknowledgements

The Vermont Department of Health convened a statewide partners meeting in May 2007 to begin the planning process to revise the state plan. The state Asthma Advisory Panel met regularly through April 2008 to create this comprehensive strategic plan based on the Vermont Blueprint for Health chronic care model.

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Situation

Asthma is a serious chronic respiratory illness that affects both children and adults. In Vermont, about 10 percent, or 47,000, adults currently have asthma. This compares to 8 percent of the U.S. white population. Also in Vermont, about 8 percent, or 11,000, children currently have asthma. In 2005, about half of Vermonters with asthma reported that their symptoms made it difficult to sleep at night. One in five reported that asthma kept them from work or carrying on daily activities at least once in the past year.

The good news is that Vermont has been making strides in reducing the number of asthma hospitalizations among children younger than 18. Hospitalization rates and unplanned visits to the Emergency Department or health care provider office are indicators of asthma management. A written Vermont Asthma Action Plan is one self-management tool that can help health care providers and their patients stay healthy and reduce unnecessary hospitalization. The written Vermont Asthma Action Plan helps patients understand how to use medications, recognize symptoms, and avoid environmental triggers. In 2005, approximately 23 percent of adults had a written Vermont Asthma Action Plan.

Another valuable tool available for Vermonters with asthma is the *Healthier Living* workshop — a free six-week workshop that helps adults and their caregivers manage their chronic disease conditions. Baseline interviews to evaluate the workshop show that 15 percent of participants indicated asthma as one of their chronic conditions.

Vermont also continues to make progress in reducing smoking, and exposure to secondhand smoke, that can make symptoms worse for people with asthma. The U.S. Surgeon General says there is no risk-free level of exposure to secondhand smoke. According to the 2006 Adult Tobacco Survey, 89 percent of Vermont households with children prohibit smoking in the home. These voluntary bans on smoking may indicate public awareness of the dangers of secondhand smoke, including the severity or worsening of asthma symptoms among children and adults.

Despite these improvements, some segments of the population suffer from higher rates and severity of asthma. With funding from the Centers for Disease Control & Prevention, the Vermont Department of Health's Asthma Program was established in 2000 as a collaborative effort among numerous community and statewide partners.

The first Vermont State Asthma Prevention Plan was published in 2003. Since that time, the Vermont Department of Health has begun implementing the Vermont Blueprint for Health, a statewide initiative to support Vermonters with chronic conditions like heart disease, diabetes and asthma.

In 2005, Vermont received grant funds from the Centers for Disease Control & Prevention to revise the Vermont Asthma Plan. During the development process representatives from hospitals, medical practices, insurers, and public health organizations and state agencies came together to create this strategic plan, with the goal of identifying and targeting specific disparate populations and defining strategies to reach these populations.

The 2008 Vermont Asthma Plan reflects the Vermont Blueprint goals to provide information, tools and support that Vermonters with chronic conditions like asthma need to manage their own health, or that health care providers require to keep their patients healthy. The six Asthma Program Goals work in conjunction with the long-term goal of the Blueprint for Health. (Appendix A)

Goals of the 2008 Vermont Asthma Plan

1. A comprehensive statewide asthma surveillance system will monitor progress, support evaluation and identify populations with higher rates of hospitalization or other illness severity indicators.

2. Exposure to environmental triggers will be reduced for Vermonters with asthma.

3. Vermonters with asthma, their families and other caregivers will be engaged in appropriate asthma self-management.

4. Vermonters will live in communities that support healthy lifestyles that enable them to prevent and manage chronic conditions.

5. Health care providers will use the current National Asthma Education and Prevention Program (NAEPP) Diagnosis and Treatment Guidelines to properly diagnose, treat, and assist their patients in reducing symptoms and improving self-management.

6. Health care systems will share information and adopt reimbursement strategies that lead to optimal asthma care.

Long-term Goals

This plan includes objectives for the chosen target audiences. The objectives developed are either short-term measurable objectives or process objectives. These objectives support the long-term goals of the Vermont Department of Health to improve the outcomes for people with asthma, and they work in conjunction with the Vermont Blueprint for Health strategic goals.

Target Audiences – Selected Statistics

The Asthma Advisory Panel used the following data to describe the burden of asthma overall and among people who have co-occurring health problems and risk factors. In 2005, approximately 47,400 adults and 10,900 children in Vermont had asthma.

Asthma & Co-Occurring Conditions/Risk Factors

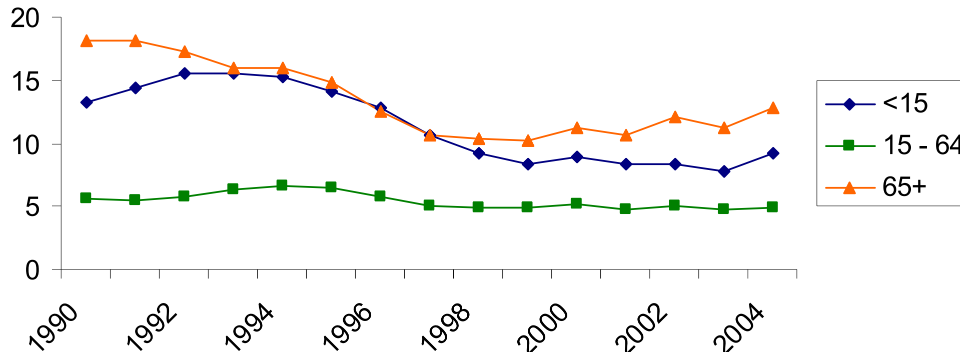
Asthma prevalence was calculated for sub-groups of Vermonters. For example, the prevalence of asthma for Vermonters with depression is 17%. The proportion of adults with co-occurring health conditions among those with current asthma was also determined. The proportion of adults who have current asthma and who are depressed is 18%.

Population Characteristics	Number	VT %	U.S Comparison†	Source
All Vermonters with current asthma	58,300**	9%		BRFSS 2005
Adults with current asthma	47,400	10%	8%	BRFSS 2005
Children (≤17) with current asthma	10,900	8%		BRFSS 2005
Prevalence of Current Asthma among:				
Adults with depression	7,700	17%		BRFSS 2005
Adults of low Socio-economic status (SES)*	11,200	14%	12%	BRFSS 2005
Adults who are obese	12,600	13%	11%	BRFSS 2005
Adults who smoke	10,400	11%	9%	BRFSS 2005
Adult females	27,900	11%	10%	BRFSS 2005
Adults age 65+	6,200	7%	7%	BRFSS 2005
Males aged 17 and under	6200	9%		BRFSS 2005
Youth who smoke	600	10%		YHS 2006
Characteristics of those with Current Asthma:				
Depression (Adults)	7,700	18%		BRFSS 2005
Low SES* (Adults)	11,200	26%	25%	BRFSS 2005
Obese (Adults)	12,600	28%	33%	BRFSS 2005
Smoke (Adults)	10,400	22%	24%	BRFSS 2005
Smoke (Youth)	600	19%		YHS 2006

† Vermont is compared to US white non-Hispanic population
‡ Low-SES indicated by <125% Federal Poverty Level and/or less than high school education
** An estimate created by addition of the number of adults and children with current asthma

Asthma Hospitalizations
Hospitalization for asthma is a sign of ineffective management of the disease. The Centers for Disease Control & Prevention's national objective is to decrease hospitalization rates for asthma by 9 percent from 2002 to 2009. Vermont has seen a significant decrease in asthma hospitalization rates between 1990 and 2000, mainly due to large decreases in hospitalizations among youth and Vermonters age 65 and older. However, those gains have leveled off among children, and seem to be increasing in the older population since 2000.

Asthma Hospital Discharge Rates 1990-2005
Primary Diagnosis Asthma (ICD-9-CM 493)
Rates per 10,000, 3-yr Moving Average



In 2005, there were 429 Vermont hospital discharges with a primary diagnosis of asthma. The overall rate was 6.9 discharges per 10,000 Vermonters, which remains above Vermont's goal of 5.0 asthma hospitalizations per 10,000 Vermonters. Rates vary by age group, with the highest rate found in Vermonters age 65 and older. Vermonters under the age of 65 have a combined asthma hospitalization rate of 5.8 per 10,000 compared with a rate of 14.3 per 10,000 for Vermonters age 65 and above.

2005 Vermont Hospital Discharges by Age • Primary Diagnosis of Asthma

Age	Crude Rate per 10,000
<15	10.6
15-29	2.3
30-39	5.7
40-49	5.0
50-59	5.6
60-64	6.8
65+	14.3

The Asthma Advisory Panel considered the needs and challenges of reaching these audiences in addition to the data. The group considered the following:

- Prevalence, population and risk factors (above)
- Partner capacity, knowledge and experience with the audience
- The ability to effectively and efficiently reach the target
- Current or planned initiatives, programs, campaigns and projects

The Asthma Advisory Panel focused on statewide objectives and strategies on lower socio-economic status for all ages. We developed objectives and strategies specifically to reach the following populations: 1) Vermonters age 65 and older; and 2) Vermonters with asthma who have co-occurring obesity. Our focus on these populations is supported by data that demonstrate a statistically significant relationship between burden of disease, disease severity, and the co-occurrence of risk factors.

Assessing Severity* for Adult Vermonters with Asthma
BRFSS 2002-2005

	Percent with Current Asthma[#]	Severity, among those with Asthma:		
		Percent with Severe Asthma*	Crude Odds Ratio**	Adjusted Odds Ratio**
All adults with asthma	10%	14%	-	-
Sex				
Males	8%	10%	0.5‡	0.5‡
Females	11%	17%	1.0	1.0
Depression				
With depression	17%	21%	1.9‡	1.6‡
Without depression	9%	12%	1.0	1.0
Federal Poverty Level				
<125%	15%	21%†	1.0	1.0
125-249%	12%	16%	0.7	0.8
250-349%	8%	11%	0.4‡	0.6
350%+	8%	8%	0.3‡	0.5‡
Obesity				
Obese	8%	19%†	1.8‡	1.6‡
Overweight	10%	13%	1.1	1.4
Not overweight or obese	13%	12%	1.0	1.0
Age				
18-44	11%	14%	1.0	1.0
45-64	9%	14%	1.0	1.0
65+	7%	15%	1.1	1.1
Smoking				
Currently smoke	9%	18%	1.5‡	1.1
Do not smoke	11%	13%	1.0	1.0
Education				
Less than high school education	13%	20%	1.0	1.0
High school education	10%	20%†	1.0	1.2
Some college education	10%	13%	0.6	0.8
College degree or higher	8%	7%†	0.3‡	0.6

*Severity indicated by answering 1 or more times to either of the following questions: "During the past 12 months, how many times did you visit an emergency room or urgent care center because of your asthma?" and "During the past 12 months, how many times did you see a doctor, nurse or other health professional for urgent treatment of worsening asthma symptoms?".

**Crude and adjusted odds ratios (OR): the odds ratio is a way of comparing whether the probability of a certain event is the same for two groups. Crude and adjusted ORs are presented for logistic regression models, the crude rate resulting from the univariate model and the adjusted rate resulting from the multivariate model. Referent groups are assigned an odds of 1.0.

† Statistically different from rest of state ($p<.05$)

‡ Statistically significant at $p<.05$

#Percent with current asthma data is 2005 only; all severity data are 2002-2005 BRFSS data.

The Asthma Advisory Panel concluded that there was reason to specifically examine conditions in the Rutland area in order to respond to the high hospitalization rates seen there. The Rutland Regional Medical Center Hospital Service Area (HSA) had a rate almost triple the state rate of 6.9 per 10,000 for hospitalizations with asthma as the primary diagnosis in 2005.

2005 Vermont Hospital Discharge Data
Asthma Primary Diagnosis (ICD-9-CM 493)

HSA	2005	VT Pop	Rate per 10,000
Rutland	113	64567	17.5
Springfield	39	28887	13.5
Newport	35	28904	12.1
St. Johnsbury	30	27573	10.9
Bennington	44	40691	10.8
Randolph	13	14699	8.8
St. Albans	26	45221	5.7
Brattleboro	13	32000	4.1
Barre & Morrisville*	26	66984	3.9
Middlebury	11	28450	3.9
WRJ	18	49588	3.6
Burlington	56	168776	3.3
Total	424	623050	6.9

*combined due to small numbers

Focus Area One — Patient Self-Management

Our goal is to provide information for individuals living with asthma and to encourage active participation in the management of their chronic illness. Through the execution of patient self-management as an intervention tool, the expectation is that the individual understands his or her health condition, and moves towards the feeling of control and optimal health.

It is important that people who have asthma are involved in treatment planning and management with their health team (health care provider, pharmacist, insurer, social services and respiratory therapists.). In addition, the support network of family, friends and the community also have a powerful influence on successful outcomes for managing asthma and improving the confidence and empowerment of the individual to self-manage.

The goals and objectives listed below were selected as ways to increase the use of available resources to manage childhood and adult asthma. A written Vermont Asthma Action Plan, completed with the health care provider, gives a patient or caregiver important guidance for using medications and reducing environmental triggers. The *Healthier Living* workshops offer adults and caregivers skills to manage their asthma through in-person, six-week workshop sessions. We will also coordinate with the Vermont Department of Health's Fit & Healthy Vermonters initiative to link individuals who are obese with *Healthier Living* workshops and work with the Office of Vermont Health Access (OVHA) and clinics for the uninsured to better reach low-income Vermonters who have asthma.

Goals:

- Vermonters with asthma, their families and other caregivers will be engaged in appropriate asthma self-management.
- Exposure to environmental triggers will be reduced for Vermonters with asthma.
- A comprehensive statewide asthma surveillance system will monitor progress, support evaluation and identify populations with higher rates of hospitalization or other illness severity indicators.

Objectives & Strategies:

Objective 1: By 2012, 27.5 percent of Vermont adults with asthma will have written Vermont Asthma Action Plans (AAP). (Baseline is 20.7 percent 2004 BRFSS).

- **Strategy:** By end of year one, the Health Department will collaborate with Healthier Living partners to empower those participants to ask for a written Asthma Action Plan from their provider.
- **Strategy**: By end of year three, the Health Department will collaborate with the OVHA Medicaid Program to examine the trend for managing asthma attacks through emergency department and unscheduled primary care provider visits.
- **Strategy:** By end of year five, the Health Department will identify one organization within a community to develop a strategy that identifies and targets smokers with asthma. Interventions will focus on increasing the percentage of these smokers with Vermont Asthma Action Plans.

Objective 2: By 2012, at least 25 percent of school age children with asthma will have written Vermont Asthma Action Plans. (17 percent have plans reported by the School Nurse Report 2005-06)

- **Strategy:** By the end of year one, work with school nurses to identify the percentage of children with asthma in grades 1 through 8 who have a written asthma management plan, and consider revision of objective.
- **Strategy:** By the end of year three, all licensed childcare providers will have received training on supporting children with asthma and their parents in their childcare facility. This will set the stage to inform parents of pre-school age children about the importance of written Vermont Asthma Action Plans throughout a child's school career.

Objective 3: By 2012, 35 percent of Vermont adults with asthma and co-occurring obesity will have a written Vermont Asthma Action Plan. (Baseline approximately 28 percent have a written plan 2004 & 2005 BRFSS). The statewide prevalence rate of obesity among adults with asthma is 28 percent (2005 BRFSS).

- **Strategy:** By end of year one, the Health Department's asthma and obesity programs, in coordination with the Vermont Blueprint for Health, will identify tools to assist health care providers develop an integrated treatment plan that addresses asthma, exercise, and nutrition goals.
- **Strategy:** By the end of year three, the Health Department and the OVHA will collaborate to ensure that individuals who have asthma and co-occurring obesity have a written Vermont Asthma Action Plan with physical activity and/or nutrition goals (baseline and target to be set).
- **Strategy:** By the end of year five, any Healthier Living workshop participant who has both asthma and obesity will leave a workshop familiar with a written Vermont Asthma Action Plan and nutrition and weight loss goals.

Objective 4: By 2012, at least 210 Vermonters with a high school education or less who have asthma will have completed the Healthier Living workshop. (As of July 2008, 29 of the enrollees with asthma have a high school education or less)

- **Strategy:** By end of year one, assure worksite programs such as the Score Health Appraisal System refers employees to Healthier Living workshops in their area.
- **Strategy**: By end of year three, the Health Department will collaborate with the clinics for the uninsured and the OVHA to refer individuals to Healthier Living workshops and monitor participation.
- **Strategy:** Collaborate with the Health Department statewide flu clinics and the State Employee Wellness Program to identify a system for educating, informing and enrolling people into Healthier Living workshops.

Focus Area Two – Community

Communities need a comprehensive, systematic, sustainable approach to asthma education that supports universal awareness of asthma signs and symptoms, environmental triggers and self-management. Partnerships, collaborations, coalitions, and communication play a major role in accomplishing this goal.

Community support for people who have asthma is a major factor in successful asthma management. Education is an important tool for changing behaviors individually and in groups. Pharmacists and asthma educators are can potentially support families and patients in understanding their disease and distributing information on avoiding asthma symptoms. We plan to pilot a project to use pharmacies to support and strengthen patient education. Pharmacists statewide could include a written Vermont Asthma Action Plan with each inhaler refill, as well as educational materials, and/or asthma management screening tools.

Vermont schools can also help children who have asthma avoid environmental triggers by using the U.S. EPA Tools for Schools kit, and working with the Department of Health's ENVISION program to create asthma-friendly schools. School policies and practices to reduce mold and dust, or to avoid using volatile organic compounds found in some paints or cleaning products, are ways schools can take action.

Families and caregivers play a role in creating healthy homes. The Vermont Department of Health answers calls each year from the public about mold in their homes. Mold remediation and cleaning practices, like using high efficiency particulate air filtered (HEPA) vacuums, have been piloted in the state with positive results. In collaboration with the Vermont Housing & Conservation Board and other housing partners, we plan to examine how to continue to support these efforts.

Reducing exposures to environmental triggers help with creating asthma-friendly communities and schools. Raising awareness about the dangers of secondhand smoke is one strategy to prevent exposure to this asthma trigger. Other strategies include creating smoke-free zones in cars and homes, and statewide policy efforts like Vermont's Clean Indoor Air Act that prohibits smoking inside public places. The Health Department Tobacco Control Program community and state partners will mobilize to reduce exposure for all Vermonters. By decreasing second hand smoke exposure, we will improve management of asthma for all individuals.

Goals:

- Vermonters will live, work, learn and play in communities that support healthy lifestyles and that enable them to prevent and manage chronic conditions (Blueprint for Health goal).
- Vermonters with asthma, their families and other caregivers will be engaged in appropriate asthma self-management.
- Exposure to environmental triggers will be reduced for Vermonters with asthma.
- A comprehensive statewide asthma surveillance system will monitor progress, support evaluation and identify populations with higher rates of hospitalization or other severity indicators.

Objectives & Strategies:

Objective 1: By 2012, pilot and evaluate a new educational intervention with pharmacists in two communities.

- **Strategy:** By the end of year one, the Health Department's Asthma Program will convene a workgroup to identify the role that pharmacists can play, and the criteria for selecting two communities to pilot an intervention.
- **Strategy:** By the end of year two, the Health Department's Asthma Program and representatives from the two pilot communities will develop an implementation plan, select educational materials and determine methods for evaluating the process.
- **Strategy:** By the end of year five, the Health Department's Asthma Program and two community partners will review the evaluation and consider the feasibility of expansion statewide.

Objective 2: By 2012, the Health Department's Asthma Program will collaborate with ALA-VT and hospital-based respiratory therapists to implement the Better Breathers Program, a lung disease program, at six sites, facilitated by a Certified Asthma Educator.

- **Strategy:** By the end of year one, the Vermont New Hampshire Association of Respiratory Therapists will conduct training to certify respiratory therapists as Certified Asthma Educators.
- **Strategy:** By the end of year three, Certified Asthma Educators will offer the Better Breathers Program at their local hospital and/or senior centers.
- **Strategy:** By the end of year five, we will re-assess outcomes including reach within the community.

Objective 3: By 2012, 24 new schools will participate in the Health Department's ENVISION Program (Baseline, 149 schools are currently enrolled in ENVISION, out of 313 Vermont schools. (School Nurse Report).

- **Strategy:** By the end of year one, the 12 Local Health Offices in collaboration with the ENVISION program will each have identified the two schools in their district that have the highest asthma rates (24 schools).
- **Strategy:** By the end of year three, the 24 schools will have conducted assessments, developed and implemented school plans/actions and policies that result in reducing environmental triggers and meet the ENVISION Program components.
- **Strategy:** By the end of year five, Local Health Offices will evaluate outcomes of participation in the ENVISION Program.

Objective 4: By 2012, the Department of Health will present a written proposal for developing a strategically aligned Healthy Homes Partnership or initiative.

- **Strategy:** By the end of year one, Health Department's Environmental Health programs will facilitate a meeting(s) to identify the existing resources and/or gaps for developing a comprehensive Healthy Homes Program or initiative.
- **Strategy:** By the end of year two, if gaps in resources exist, the Health Department will review Notification of Funding Announcements to identify funding sources and prepare grant applications.

Objective 5: Increase the proportion of smokers who believe that breathing smoke from other people's cigarettes is very harmful from 49 percent in 2006 to 55 percent in 2008. (Tobacco Control Program Work Plan, Adult Tobacco Survey).

- **Strategy:** By the end of year one, the Health Department's Tobacco Control Program will review data and revise objective for the next two years.
- **Strategy;** By the end of year three, the Health Department will collaborate with the Coalition for Tobacco Free Vermont and the Vermont Tobacco Evaluation and Review Board to strengthen the Vermont Worksite Smoking Law.
- **Strategy:** Each year, the Health Department's Tobacco Control Program will run a "common theme" campaign by airing mass media spots supported by local community events to reinforce the messages on secondhand smoke as well as highlight the health risks for all Vermonters.

Focus Area Three — Provider Practice

The objective of provider practice improvement efforts is to increase the proportion of individuals receiving care consistent with evidence-based standards. Health care providers are active participants in learning about evidence-based standards for the delivery of effective, proactive care for patients with chronic conditions. The challenge is ensuring that providers integrate these standards into practice. The Vermont Blueprint for Health is piloting a patient-centered medical home project in three communities. Patients with asthma will benefit from these pilots in terms of better management of their disease. In the future, the Vermont Asthma Advisory Panel may develop specific statewide objectives that align with Blueprint for Health pilot results.

The National Asthma Education and Prevention Program (NAEPP) developed asthma diagnosis and treatment guidelines to assist providers in identifying appropriate treatment based on the severity of asthma for the individual A revised version of the NAEPP guide was launched in August 2007. The guidelines move providers toward a system of assessment or reassessment of the patient's control of their asthma, and offers education and treatments for optimal care.

Goals:

- Health care providers will use the current National Asthma Education and Prevention Program (NAEPP) Diagnosis and Treatment Guidelines to properly diagnose, treat, and assist their patients in reducing symptoms and improving self-management.
- A comprehensive, statewide asthma surveillance system will monitor progress, support evaluation and identify populations with higher rates of hospitalization or other severity indicators.

Objectives & Strategies:

Objective 1: By 2012, the Health Department will ensure that all Vermont provider practices have access to NAEPP treatment guidelines for asthma management.

- **Strategy:** By the end of year one, the Health Department will post a link to updated NAEPP asthma treatment guidelines as part of the pediatric provider toolkit on the website. The Health Department will post a link to updated NAEPP asthma treatment guidelines on its asthma web pages for accessibility by all Vermont health care providers.
- **Strategy:** By the end of year one, the Health Department will collaborate with OVHA, the American Academy of Pediatrics (AFP), and the Academy of Family Practice (AAFP) to determine website locations to link to revised NAEPP guidelines.
- **Strategy:** By the end of year two, the Health Department will target participating Blueprint provider practices by integrating guidelines into the practice.
- **Strategy:** By the end of year three, the Health Department will collaborate with the Blueprint and other partners to implement a quality improvement project that targets patients with asthma.

Objective 2: By 2012, the Health Department's Asthma Program will strategically align with the Blueprint for Health initiative and other Health Department chronic disease programs to address how practices can succeed in providing optimal treatment of patients and demonstrating utilization of provider knowledge and practice of the revised NAEPP guidelines.

- **Strategy:** By end of year one, VDH will facilitate meetings to identify joint strategies or interventions to support and educate providers.
- **Strategy:** By the end of year three, VDH Asthma Program will pilot an intervention and evaluate the outcomes.

Objective 3: By 2012, increase the percentage of adults with asthma who receive a flu vaccination from 36 percent in 2005 to 60 percent.

- **Strategy:** By the end of year one, work the VDH Immunization Program to expand education of providers on the importance of flu vaccinations for all patient with asthma.
- **Strategy:** By the end of year three, evaluate progress toward meeting objective
- **Strategy:** By the end of year five, modify and implement outreach interventions to providers.

Focus Area Four — Health Care System

The health care system refers to the following levels: hospital, practice, insurance, and information technology. The various stakeholders within each level focus on different health indicators, have different priorities and different financial concerns. Further health care reform legislation, under the Vermont Blueprint for Health, will pilot medical home projects in three hospital service areas over the next three years. The projects include setting up Community Care Teams that support the provider treatment plan and link the patient with local resources in managing his/her disease. In 2008, the Vermont Department of Health identified two of the three pilot areas; Northeastern Vermont Regional Hospital and Fletcher Allen Health Care. We will continue to learn from these pilots in advancing care for individuals with asthma.

Vermont data indicate that adults over the age of 65 with a primary diagnosis of asthma have the highest hospitalization rates as compared to all age groups (14.3 per 10,000 vs. 5.8 per 10,000). Twenty-seven percent (117 of 429) of all hospitalizations for a primary diagnosis of asthma in 2005 were for adults age 65 or older. This age group also reports a slightly higher rate of severe asthma, defined as more than one asthma-related visit to the emergency department and/or health care provider/urgent care in the past year; 15.1 percent vs. 14.1 percent for all adults with asthma in 2002 through 2005. The Asthma Advisory Panel developed objectives and strategies to decrease hospitalization rates for this population to influence the overall state hospitalization rate.

Goals:

- Health care systems will share information and adopt reimbursement strategies that lead to optimal asthma care.
- A comprehensive, statewide asthma surveillance system will monitor progress, support evaluation and identify populations with higher rates of hospitalization or other severity indicators.

Objectives & Strategies:

Objective 1: Increase communication among private and public insurers, including the Vermont Department of Corrections, about disease management and reimbursement

- **Strategy:** By the end of year one, survey Health Department programs to determine needs and gaps in working with insurers and providers
- **Strategy:** By the year three, host a summit for stakeholders to develop an action plan to address identified needs and gaps
- **Strategy:** By the end of year five, implement a memorandum of understanding to pilot new interventions and reimbursement

Objective 2: Decrease the hospital discharge rate for adults over the age of 65 with a primary diagnosis of asthma from 14.3 per 10,000 in 2005 to 13.0 per 10,000 by 2012.

- **Strategy:** By the end of year one, increase the number of adults 65+ with asthma who have participated in Healthier Living workshops and/or Better Breathers.
- **Strategy:** By the end of year three, implement a coordinated approach to education, use of self-management tools, and other supports, for this population through pharmacies, hospital discharge, senior housing or meal sites, nursing homes, faith-based organizations.

Objective 3: Develop a reporting system to increase coordination among school nurses, parents and providers that is conducive to delivering best care of school aged children by 2012.

- **Strategy:** By the end of year one, analyze data from School Nurse Report.
- **Strategy:** By the end of year three, include data in Agency of Human Service Community Profiles and feed data back to schools so they can compare with each other.
- **Strategy:** By the end of year five, measure success through School Nurse Report.

Focus Area Five — Rutland Area Pilot

A comprehensive approach engages multiple focus areas of self-management, community, provider practice and health systems. The Asthma Advisory Panel identified Rutland's high adult hospitalization rate for asthma (17.5 per 10,000 in the Rutland Regional Medical Center Hospital Service Area (HSA) vs. 6.9 per 10,000 for the state) as a priority.

The Vermont Asthma Plan's objective is to reduce the statewide hospitalization rate by 9 percent, from a baseline of 5.5 per 10,000 in 2002 to 5.0 per 10,000 in 2009. Engagement of these multiple strategies in this community, with the specific goal of reducing hospitalizations, could significantly affect the state rate. A stakeholder group from this community will examine the situation, develop plan and take action.

In addition, the Asthma Advisory Panel agreed with piloting interventions while the plan in this area was under development. Interventions like community education and creating asthma-friendly schools and work sites may help individuals with asthma. According to the American Thoracic Society, "15 percent is a reasonable estimate of the occupational contribution to the population burden of adult asthma." One out of every six adults with asthma experiences symptoms in the workplace. We have chosen to incorporate a work-related asthma pilot into the existing state plan in order to have a complete and comprehensive asthma program.

Vermont's Act 125 addresses indoor air quality issues in schools that can make children and employees ill. Tools and resources offered through the Health Department's ENVISION Program are available to help schools implement an environmental management plan and policy that addresses asthma triggers and creates a healthy indoor environment.

Goals:

- The disparities in asthma outcomes in the Rutland area will be reduced/eliminated.
- A comprehensive, statewide asthma surveillance system will monitor progress, support evaluation and identify populations with higher rates of hospitalization or other severity indicators.

Objectives & Strategies:

Objective 1: Reduce the hospitalization rate for adults in the Rutland Regional Medical Center Hospital Service Area (HAS) with a primary diagnosis of asthma from 17.5 per 10,000 in 2005 to 15.9 per 10,000 in 2012. This is a 9 percent reduction).

- **Strategy**: By the end of year one, complete an assessment to identify why the Rutland Regional Hospital Service area has the highest hospitalization rates for asthma.
- **Strategy:** By the end of year three, coordinate with Rutland area health care providers, the American Academy of Family Practices, and Association of American Pediatrics to support health care system interventions to address the hospitalization rate.
- **Strategy:** By the end of year five, implement interventions or programs to ensure that the Rutland Regional Hospital hospitalization rate for asthma is reduced by 9 percent.

Objective 2: By June 2012, identify and develop a plan with stakeholders in the Rutland area to determine practice patterns, demographics, environmental factors, etc. that may influence the rate of asthma hospitalizations.

- **Strategy:** By the end of year one, the Health Department will begin a targeted educational campaign to providers in geographic areas with high asthma prevalence, hospitalization and emergency department rates. Mailings will include highlights on updated NAEPP guidelines and will direct providers on how to access the full guidelines.
- **Strategy:** By end of year two, complete the assessment of the Rutland Regional Medical Center HSA and develop a plan that addresses all levels (community, provider practice, self-management, health systems).
- **Strategy:** By the end of year three, mobilize partners to implement the plan.
- **Strategy:** By the end of year five, evaluate the plan and revise.

Objective 3: By June 2012, implement and evaluate three pilots, one in each of three settings: school, community and work place and evaluate the impact.

- **Strategy:** By the end of year two, pilot a family education workshop on proper use of inhalers and other related equipment in a community setting, such as a pharmacy.
- **Strategy**: By the end of year three, the Health Department's ENVISION program will collaborate with schools in the Rutland area to implement a pilot that measures attendance and visits to the school nurse before and after implementation of an environmental management plan and policy (Act 125).
- **Strategy:** By the end of year five, identify and evaluate outcomes from work sites that pilot environmental and educational interventions to address asthma triggers.

Evaluation

While individual strategies, goals and actions may have evaluation measures built in – like completion of tasks, timing, etc. – larger measures also need to be reviewed on a regular basis.

We recommend tracking the following trends, which will be broken down by income/education and severity and where possible, co-occurring conditions such as overweight or obese.

Short-Term Measures

- Asthma education/awareness – written management plans, healthcare provider education
- Attitudes about smoking and second hand smoke – youth and adults
- Schools participating in and completing ENVISION
- Other environmental health and/or ENVISION measures
- Use of written management plans – adults and youth

Long-Term Measures

- Asthma prevalence – youth and adults
- Asthma severity and symptoms – youth and adults
- Second hand smoke exposure
- Morbidity and Mortality

Appendix A — The Blueprint Goal

The overall goal of the Vermont Blueprint for Health is to reduce the health and economic impact of the most common chronic conditions. The Blueprint is intended to achieve this goal by leading a transformative process that results in high quality health care and effective prevention statewide.

In particular, the program is intended to help primary care providers operate their practices as advanced medical homes, offering patients well-coordinated care that is supported by local services, health information technology tools, and provider reimbursement mechanisms. The high level of care that is envisioned should incorporate strategies to enhance self-management and should be closely integrated with prevention efforts.

If successful, this transformation could effectively establish a functional network of independent medical homes that bring to life the principles in Wagner's Chronic Care Model. The level of health care reform called for in the Blueprint requires sustainable systems-level change, a complex process that is intended to be achieved through public-private partnerships.

Definitions

Diversity – The differences that exist within populations and communities. For example: racial/ethnic, tribal, gender, age, sexual orientation, socio-economic status, geographic location, religion, and education.

Environmental trigger — Factors found in the indoor and outdoor environment that can cause, trigger, or exacerbate asthma symptoms, including secondhand smoke, pet dander, dust mites, mold, cockroaches and other pests, nitrogen dioxide from fuel burning appliances, and volatile organic compounds.

Federal Poverty Guidelines (FPL) — Poverty thresholds are used for calculating all official poverty population statistics and are updated each year by the Census Bureau. The Health and Human Services (HHS) Federal Poverty guidelines are a simplified version of the federal poverty thresholds used for administrative purposes, and are often referred to as "federal poverty level." Guidelines vary by family size. In addition, there is one set of figures for the 48 contiguous states and D.C.; one set for Alaska; and one set for Hawaii. For more information on poverty guidelines please visit: http://aspe.hhs.gov/poverty/05poverty.shtml

Health Disparity — Incidence, prevalence, mortality, burden of diseases, and other adverse health conditions that exist among specific population groups. Health disparities as they relate to tobacco are differences in patterns, prevention, and treatment of tobacco use.

Hospital Service Area (HSA) — A geographically distinct population (a group of towns) with a high level of dependence on a specific hospital or group of hospitals. There are 13 HSAs in Vermont as defined by Act 53, *An Act Relating to Hospital and Health Care System Accountability, Capital Spending, and Annual Budgets*.

Prevalence — Prevalence is defined as the number of current cases per the population at risk at a certain point in time or period.

Statistical Significance — Because of random variability around a trend or point, rates observed at any given time are best considered estimates of the underlying or true rate. Confidence intervals are calculated to set a range of values, above and below the estimate that likely contains the true rate. Confidence intervals are shown as error bars on graphs in this report and are calculated at the 95 percent level. If the confidence intervals of two groups (such as males and females, or Vermont and the U.S.) overlap, we use this as a conservative test that the difference is not statistically significant.

Acronyms

AHS – Agency of Human Services

ALA – American Lung Association

ARC – Asthma Regional Council

CDC – Centers for Disease Control and Prevention

US EPA – United States Environmental Protection Agency

FPL- Federal Poverty Level

FAHC – Fletcher Allen Health Care

HSA – Hospital Service Area

NAEPP- National Asthma Education Prevention Program

NVRH – Northeastern Vermont Regional Hospital

OVHA – Office of Vermont Health Access, administers Medicaid and other public insurance programs

RRMC – Rutland Regional Medical Center

SES- Socio-Economic Status

TCP – Tobacco Control Program

UVM – University of Vermont

VDH – Vermont Department of Health

VCHIP – Vermont Child Health Improvement Project

VAAP- Vermont Asthma Action Plan, a written treatment plan

Data Sources

Behavioral Risk Factor Surveillance System (BRFSS): Since 1990, Vermont and 49 other states and three territories have tracked risk behaviors using a telephone survey of adults (age 18+) called the Behavioral Risk Factor Survey. These data are self-reported and therefore may differ from information obtained from records of health care providers. The sample is also limited to adults with telephones. Because there is variation in the content of the questionnaire between states, U.S. estimates, in some cases, may represent a subset of all states.

Hospital Discharge Data (HDD): Vermont's acute care hospitals participate in the state's hospital data system by supplying discharge abstracts of comparable information to Health Care Investment Analysts, a subsidiary of AMBAC, under contract with the Vermont Association of Hospitals and Health Systems (VAHHS). VAHHS, using its EXPLOR data system, then provides data to the Vermont Department of Health, the hospital discharge data management designee of the Division of Health Care Administration. Records from Massachusetts, New Hampshire and New York hospitals are obtained from the Massachusetts Health Data Consortium, the New Hampshire Division of Public Health and the New York Department of Health respectively. The Veterans Administration provides discharge records from the VA hospital in White River Junction.

National data for comparison purposes is available through the Healthcare Cost and Utilization Project (HCUP) maintained by the Agency for Healthcare Research and Quality (AHRQ). HCUP is a Federal-State-industry partnership to build a standardized, multi-state health data system and companion set of complementary resources. HCUP databases are a family of longitudinal, administrative databases—including state-specific hospital-discharge databases and a national sample of discharges from community hospitals.

School Nurse Survey: The Vermont Department of Education sends a Health Services Screening Report to all school nurses every year. The Vermont Asthma Program has been able to include two questions on asthma prevalence and use of written management plans through an agreement with the Department of Education beginning in 2003-2004.

Vital Statistics: Vermont vital records system includes the following vital events: births, deaths, fetal deaths, abortions, marriages, divorces, civil unions and reciprocal beneficiaries relationships. Although a physician is responsible for filing the death certificate, the job may be, and often is, delegated to the funeral director. Health Department staff code and enter all vital records received into a computerized database, and send a data file containing some of the information from the records to the National Center for Health Statistics to become part of a national database.

Youth Health Survey (YHS): The YHS (formerly the Youth Tobacco Survey or YTS) is a self-administered survey of all students in randomly selected classes in randomly selected schools statewide. Data for years 2000 and 2002 include only middle school students. Data for year 2004 includes both middle and high school students. Data are collected during March and April in schools.

Appendix B – References

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