24. Respiratory Diseases

Goal

Increase education and awareness in Kentucky about the signs and symptoms of lung diseases, specifically asthma, chronic lower respiratory disease (CLRD), and obstructive sleep apnea (OSA). Promote lung health through better detection, treatment, and management.

Overview

Asthma is one of the most common chronic diseases in the United States, affecting more than 20 million people. In Kentucky, it affects 9.8 percent of the adult population, approximately 400,000 Kentuckians. Additionally, asthma affects nearly 10 percent of the population younger than 18 years of age. The exact cause or causes of asthma are not yet known; however, genetic and environmental factors can exacerbate symptoms and lead to an asthma episode or attack. Factors that can trigger an asthma attack include allergens (such as pet dander, dust mites, mold, pollen, and food allergies), secondhand tobacco smoke, exercise, strong odors, and cold weather.

The successful management and control of asthma leads to improved quality of life and decreased adverse outcomes, including asthma episodes and attacks, hospitalizations, emergency room visits, and missed school or work days. This reduction in adverse outcomes also translates into a reduction in the economic impact of asthma. The effective management of asthma includes reducing exposure to asthma triggers, adequately managing asthma with medicine, monitoring asthma using objective measures of lung function, and education of asthma patients to be responsible for their own care.

CLRD, also referred to as chronic obstructive pulmonary disease (COPD), continues to affect the health of Kentuckians. COPD was changed to CLRD in 1999 with the introduction of ICD-10 codes. CLRD is used in vital statistics reporting, but COPD is still widely used and commonly found in surveillance reports. CLRD is characterized by the presence of airflow obstruction due to chronic bronchitis and emphysema, two diseases that often coexist. Most people with CLRD are current or former smokers. There is no cure for CLRD. It is one of the most common respiratory conditions of adults and is the fourth leading cause of death in the United States. Obstructive sleep apnea (OSA) is an illness characterized by snoring, partial or complete cessation of breathing during sleep, reductions in blood oxygen levels, severe sleep fragmentation, and excessive daytime sleepiness. If left untreated, sleep apnea can increase the risk for high blood pressure, diabetes, a heart attack or stroke, work-related accidents, and driving accidents.

Summary of Progress

The burden of asthma in Kentucky remains as evidenced by the increase in adult asthma prevalence from 7.8% in 2000 to 8.3% in 2004. However, the target was achieved for objective 24.1, which measures asthma mortality. The age-adjusted asthma death rate declined from 20 per million in 1997 to 13 per million in 2003. Objective 24.3R requires that a statewide surveillance system be established for asthma, and data sources have been identified and utilized to develop several surveillance documents. The CLRD hospitalization rate, Objective 24.4R, is well below the 2010 target. The asthma hospitalization rate and asthma prevalence rate (Objective 24.2R) have both increased since this document was originally developed, but the Department for Public Health, the Kentucky Asthma Partnership, and other partner agencies are dedicated to securing resources that will help support a reduction in these outcomes. Resources to address the remaining objectives are limited; however, strategies are provided that will move these objectives toward the 2010 targets.

The Kentucky Asthma Partnership, its member agencies, and its partners continue to seek funding, educational and awareness materials, and other resources that will help reduce the burden of asthma in Kentucky.

Progress toward Achieving Each HK 2010 Objective

24.1. Reduce the asthma death rate to no more than 14 per million population.

Data Source: Kentucky Vital Statistics Surveillance System, Data are age-adjusted to year 2000 standard.

Baseline: 20 per million population in 1997

HK 2010 Target: 14 per million population

Mid-Decade Status: 13 per million population in 2003

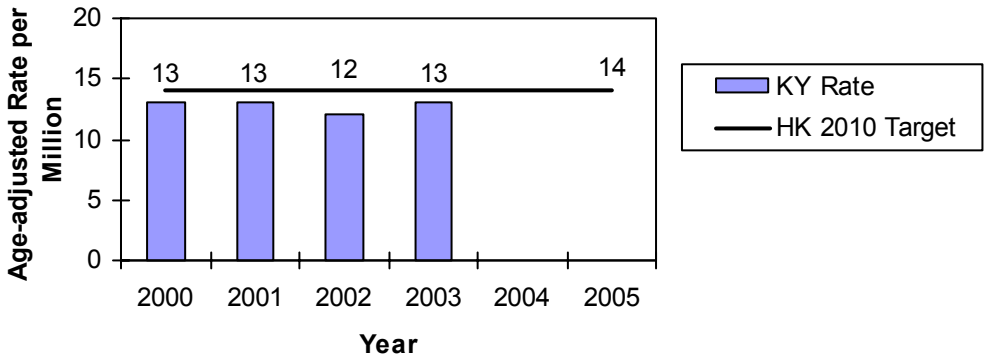

Figure 24.1 Asthma Death Rate per Million Population, Kentucky, 2000 - 2003 (Source: Kentucky Vital Statistics Surveillance System)

Strategies to Achieve Objective:

- Promote awareness and use of the National Asthma Education and Prevention Program Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma
- Promote the use of written asthma management plans

24.2. (Developmental) **Reduce the overall asthma morbidity, as measured by a reduction in the asthma hospitalization rate to 10 per 10,000 people. (See Revisions)**

24.2.1R. (REVISION) Reduce the asthma hospitalization rate to 10 per 10,000 population.

Reason for Revision: This objective can be split into two objectives that measure asthma morbidity: hospitalizations and prevalence.

Data Source: Hospital Inpatient Discharge Database

Baseline: 15.5 per 10,000 population in 2000

HK 2010 Target: 10 per 10,000 population

Mid-Decade Status: 17.6 per 10,000 population in 2004

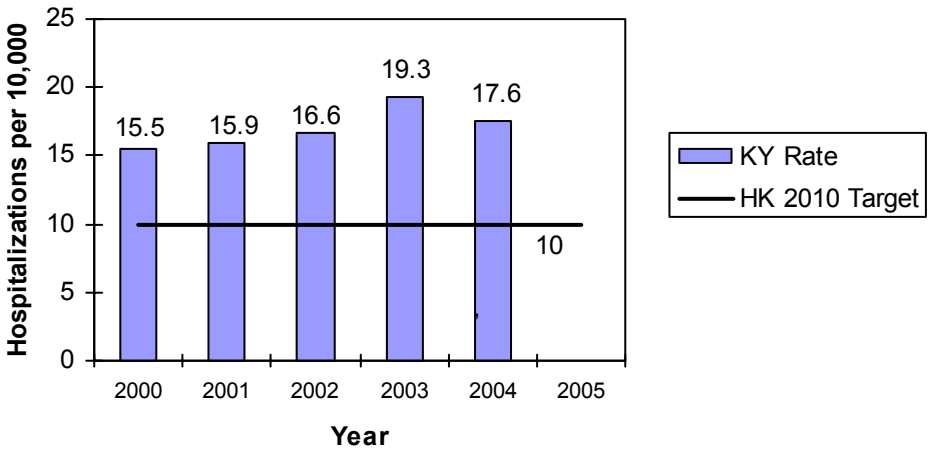

Figure 24.2 Hospitalizations due to Asthma per 10,000 population, Kentucky, 2001 - 2004
(Source: Hospital Inpatient Discharge Database)

Strategies to Achieve Objective:

- Develop a community-based asthma prevention model using a coalition of local health departments, local family resource centers, agricultural extension services, school systems, and health care providers
- Promote awareness and use of the National Asthma Education and Prevention Program Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma
- Increase education among persons with asthma, healthcare providers, and childcare workers
- Urge Medicaid managed care programs, KCHIP, and other health insurance providers to focus on asthma prevention and education programs
- Work with the Kentucky Department of Education to implement an asthma education program in all schools for students, faculty, staff, and administration
- Develop a public media campaign about the role of secondhand smoke as a major asthma trigger

24.2.2R. (REVISION) Reduce the adult asthma prevalence to 6.8 percent.

Reason for Revision: In the original objective, the only data available to measure asthma morbidity were from inpatient hospitalizations. Since the original version of this document, asthma questions have been added to the Behavioral Risk Factor Surveillance System, BRFSS, providing a data source for asthma prevalence.

Data Sources: BRFSS. Refused and unknown responses are excluded. The BRFSS only surveys adults aged 18 and over, so childhood asthma prevalence is not available.

Baseline: 7.8 percent of Kentucky adults in 2000

HK 2010 Target: 6.8 percent of Kentucky adults

Mid-Decade Status: 8.3 percent of Kentucky adults in 2004

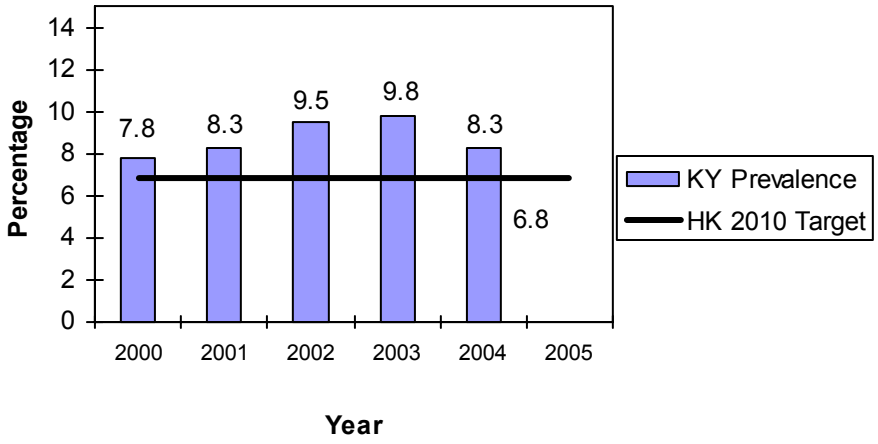

Figure 24.3 Current Asthma Prevalence, Kentucky, 2000 - 2004 (Source: BRFSS)

Strategies to Achieve Objective:

- Develop a community-based asthma prevention model using a coalition of local health departments, local family resource centers, agricultural extension services, school systems, and health care providers
- Promote awareness and use of the National Asthma Education and Prevention Program Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma
- Increase education among persons with asthma, healthcare providers, and childcare workers
- Urge Medicaid managed care programs, KCHIP, and other health insurance providers to focus on asthma prevention and education programs
- Work with the Kentucky Department of Education to implement an asthma education program in all schools for students, faculty, staff, and administration
- Develop a public media campaign about the role of secondhand smoke as a major asthma trigger

24.3. (Developmental) **Establish an asthma surveillance system for tracking asthma morbidity, hospitalization, and mortality.**

Data Sources: BRFSS (Refused and unknown responses are excluded. The BRFSS only surveys adults aged 18 and over, so childhood asthma prevalence is not available.); Kentucky Inpatient Hospitalization Claims; Kentucky Vital Statistics. These data sources do not provide reliable prevalence estimates for childhood asthma in Kentucky.

Baseline: No comprehensive system is currently available; however a partial system was in place by 2005.

Mid-Decade Status: Descriptive epidemiologic data from the BRFSS, Kentucky Inpatient Hospitalization Claims, and Kentucky Vital Statistics have been used in one surveillance report, two Kentucky Epidemiologic Notes and Reports articles, and two grant applications.

Strategies to Achieve Objective:

- Continue to use the BRFSS (current asthma prevalence), hospitalization data (primary diagnosis using ICD-9 codes 493-493.92), and vital statistics data (asthma is primary cause of death) to monitor asthma in Kentucky.
- Partner with the Kentucky Department of Education to obtain and analyze the asthma data from the Youth Risk Behavior Survey and other school surveys that assess asthma among school-age children.
- Partner with Medicaid to obtain and analyze data on asthma hospitalizations, emergency room visits, and medication use.

24.4. (Developmental) **Reduce the COPD rate to no more than 100 per 10,000 population. (See Revision)**

24.4R. (REVISION) Reduce the CLRD hospitalization rate to no more than 56 per 10,000 population.

Reason for Revision: COPD was changed to CLRD in 1999 with the introduction of ICD-10 codes. CLRD is used in vital statistics reporting, but COPD is still widely used and commonly found in surveillance reports.

This objective did not originally specify the rate as a hospitalization rate. Additionally, the data for the original 1996 baseline was flawed. The baseline has been revised to reflect the 2000 data. The target has been set one unit below the baseline.

Data Source: Kentucky Hospital Inpatient Discharge Database

Baseline: 57 per 10,000 population in 2000

HK 2010 Target: 56 per 10,000 population

Mid-Decade Status: 68.3 per 10,000 population in 2003
*Data based on ICD-9 Codes 490-492, 493, 494, 495, 496

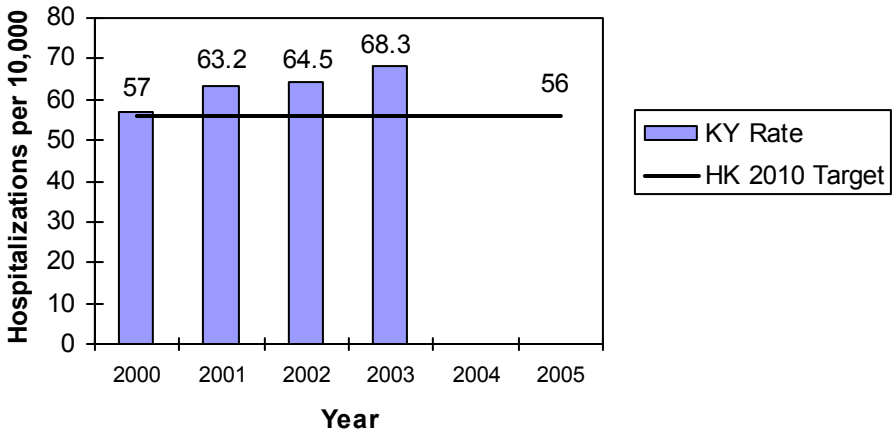

Figure 24.4 Hospitalization Rate Due to CLRD, Kentucky, 2000-2003 (Source: Hospital Inpatient Discharge Database)

Strategies to Achieve Objective:

- Support the current education efforts geared to increasing the number of smokers participating in smoking cessation programs
- Support the current efforts to prevent smoking in youth

24.5. (Developmental) **Reduce the COPD death rate for adults to no more than 18 per 100,000 population. (See Revision)**

24.5R. (REVISION) Reduce the CLRD death rate for adults to no more than 55 per 100,000 population.

Reason for Revision: COPD is now reported as CLRD

Data Source: Kentucky Vital Statistics Surveillance System, Data are age-adjusted to year 2000 standard.

Baseline: 52.4 per 100,000 in 2001

HK 2010 Target: 51.4 per 100,000

Mid-Decade Status: 58.9 per 100,000 in 2002

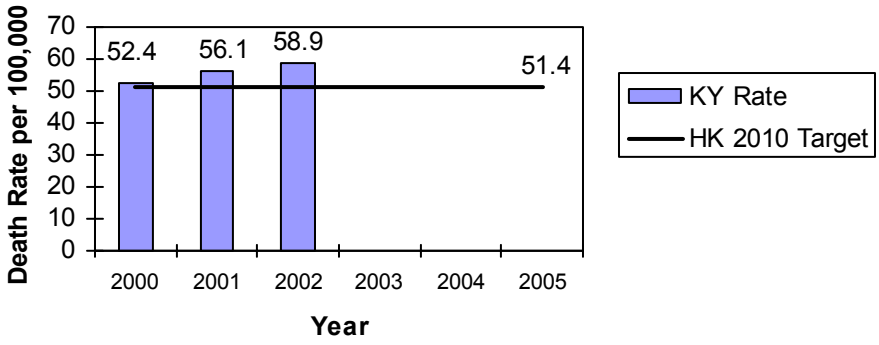

Figure 24.5 CLRD Death Rate, Kentucky, 2000 - 2002 (Source: Vital Statistics Surveillance System)

Strategies to Achieve Objective:

- Support the current education efforts to increase participation of smokers in science-based smoking cessation programs
- Support the current efforts to prevent youth initiation of smoking

24.6. (Developmental) **Establish a COPD surveillance system for tracking COPD morbidity, hospitalizations, and mortality. (DELETED)**

Reason for Deletion: No agencies or organizations currently dedicate resources to develop and establish a CLRD surveillance system. Additionally, this type of surveillance system would be difficult and costly to develop and implement.

24.7. (Developmental) **Establish an obstructive sleep apnea (OSA) surveillance system for tracking OSA morbidity, hospitalization, and mortality. (DELETED)**

Reason for Deletion: No agencies or organizations currently dedicate resources to develop and establish an OSA surveillance system. Additionally, this type of surveillance system would be difficult and costly to develop and implement.

24.8. (Developmental) **Increase to six hours the average number of hours that medical school curricula devoted to training medical students in sleep medicine. (DELETED)**

Reason for Deletion: It is not clear whether any data exist to measure this objective.

Terminology

Asthma: A lung disease characterized by narrowing of the airways resulting in recurring episodes or attacks of wheezing, shortness of breath, chest tightness, and cough.

Chronic obstructive pulmonary disease: COPD is characterized by the presence of airflow obstruction due to chronic bronchitis and emphysema, two diseases that often coexist. There is no cure for COPD. It is one of the most common respiratory conditions of adults and is the fourth leading cause of death in the United States. The Kentucky mortality rate exceeds that of the United States.

Obstructive sleep apnea: OSA is an illness characterized by snoring, partial or complete cessation of breathing during sleep, reductions in blood oxygen levels, severe sleep fragmentation, and excessive daytime sleepiness. If left untreated, sleep apnea can increase the risk for high blood pressure, diabetes, a heart attack or stroke, work-related accidents, and driving accidents.

References

- Behavioral Risk Factor Surveillance System, 2000-2004
- National Health Interview Survey, 1995
- National Asthma Education and Prevention Program Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma
- Kentucky Vital Statistics, 2001-2003
- Kentucky Inpatient Hospitalization Claims, 2001-2004

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24. Respiratory Diseases – Summary Table

Summary of Objectives for Respiratory Diseases	Baseline	HK 2010 Target	Mid-Decade Status	Progress	Data Source
24.1. Reduce the asthma death rate to no more than 14 per million population	20/ million (1997)	≤14/ million	13/ million (2003)	Target Achieved	Vital Statistics
24.2.1R. Reduce the asthma hospitalization rate to 10 per 10,000 population	15.5/ 10,000 (2001)	≤10/ 10,000	17.6/ 10,000 (2004)	No	HOSP
24.2.2R. (Developmental) Reduce the adult asthma prevalence to 6.8 percent	7.8% (2000)	≤6.8%	8.3% (2004)	No	BRFSS
24.3R. (Developmental) Establish an asthma surveillance system for tracking asthma morbidity, hospitalizations, and mortality	No system	System in place	Partial system in place	Yes	
24.4R. (Developmental) Reduce the Chronic Lower Respiratory Disease (CLRD) hospitalization rate to no more than 56 per 10,000 population	57/ 10,000 (2000)	≤56/ 10,000	68.3/ 10,000 (2003)	No	HOSP
24.5R. (Developmental) Reduce the CLRD death rate for adults to no more than 55 per 100,000 population	52.4/ 100,000 (2001)	≤51.4/ 100,000	58.9/ 100,000 (2002)	No	Vital Statistics
24.6. – 24.8. (DELETED)					

R = Revised objective