Overview and Presenters

Chair
- Howard K. Koh, MD, MPH, Assistant Secretary for Health
  U.S. Department of Health and Human Services

Data Presentation
- Irma Arispe, PhD, Associate Director
  National Center for Health Statistics
  Centers for Disease Control and Prevention

Research and Program presentation
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  National Heart, Lung and Blood Institute, NIH
- Vikas Kapil, DO, MPH, FACOEM, Acting Deputy Director
  Chief Medical Officer, National Center for Environmental Health
  Agency for Toxic Substances and Disease Registry, CDC

Community Highlight
- Karen Meyerson, FNP-C, AE-C
  Manager, Asthma Network of West Michigan
Healthy People 2020 Evolves

1979 Smallpox Eradicated
1982 AIDS is Infectious
1988 SG Declares Nicotine Addictive
1990 Human Genome Project Begins
1990s Drinking Water Fluoridation
2000s Obesity and Chronic Disease
2009 H1N1 Flu
2005 Hurricane Katrina

1970 Clean Air Act
Chronic Lower Respiratory Disease (CLRD) is the third leading cause of death

- Asthma - $53.42 billion (2011)
  - Prevalence: 25.6 million people or 8.3% (2012)
    - 6.8 million children (9.3%)
    - 18.7 million adults (8.0%)

- Chronic Obstructive Pulmonary Disease (COPD) - $49.9 billion (2010)
  - Prevalence: 11.3 million adults or 4.8% (2012)
    - Includes emphysema and chronic bronchitis, older adults

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS.
Overview: Respiratory Diseases

- **Asthma was responsible for (2010):**
  - 14.2 million physician office visits
  - 1.8 million emergency department visits
  - 439,000 hospitalizations
  - 3,404 deaths

- **COPD was responsible for (2010):**
  - 1.2 million physician office visits
  - 1.8 million emergency department visits
  - 700,480 hospitalizations
  - 133,660 deaths

SOURCES: National Vital Statistics System—Mortality (NVSS-M), National Hospital Discharge Survey (NHDS), National Hospital Ambulatory Medical Care Survey (NHAMCS), National Ambulatory Medical Care Survey (NAMCS)
Overview: Sleep Health

- **Sleep Deficiency and Causes:**
  - Lifestyle factors
  - Occupational factors
  - Sleep disorders

- **Insufficient sleep and sleep disorders are associated with:**
  - Risk, management, and outcome of chronic disease
    - Cardiovascular disease
    - Diabetes
    - Obesity
    - Depression
  - Motor vehicle crashes and machinery-related errors
Presentation Outline

- Respiratory Diseases
  - Asthma
  - Chronic Obstructive Pulmonary Disease (COPD)

- Sleep Health
Burden of Respiratory Diseases, 2010

### Sources
- National Vital Statistics System—Mortality (NVSS-M)
- National Hospital Discharge Survey (NHDS)
- National Hospital Ambulatory Medical Care Survey (NHAMCS)
- National Ambulatory Medical Care Survey (NAMCS)
- National Health Interview Survey (NHIS)
- CDC/NCHS

### Notes
- Data are for all ages except for COPD prevalence which is among adults aged 18 years and over. Deaths are based on an underlying cause of asthma (ICD-10 codes J45–J46) or COPD (ICD-10 codes J40–J44). Hospital discharges, emergency department visits, and office visits are based on a principal diagnosis of asthma (ICD-9-CM code 493) or COPD (ICD-9-CM code 490-492, 496).
- Asthma prevalence is defined as the proportion of persons with current asthma. COPD prevalence is defined as proportion of adults who have ever been diagnosed with emphysema or who were diagnosed with chronic bronchitis in the last 12 months.

### Table

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<td>Hospitalizations</td>
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<td>Emergency Dept. visits</td>
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<td>Office visits</td>
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<td>Prevalence (2012)</td>
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Asthma Prevalence, 1980–2012

NOTES: Asthma period prevalence is the proportion of persons with asthma in the previous 12 months; current asthma prevalence is the proportion of persons with asthma at the time of interview. After the redesign, a medical diagnosis of asthma was required and proxy reporting for adults was eliminated.

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS.
Current Asthma Prevalence, 2012

NOTES: I = 95% confidence interval. Respondents were asked to select one or more races. The race categories black and white are for persons who reported only one racial group and exclude persons of Hispanic origin. Persons identified as Hispanic can be of any race.

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS.
Current Asthma Prevalence, 2010–2012

NOTES: I = 95% confidence interval. Data are age adjusted to the 2000 standard population. Income groups are defined based on the ratio of family income to poverty threshold: nonpoor 200%+, near poor 100-199%, poor <100%. Respondents were asked to select one or more races. The categories black and white are for persons who reported only one racial group and exclude persons of Hispanic origin. Persons identified as Mexican or Puerto Rican may be of any race.

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS.
Asthma Hospitalizations, 2010

NOTES: I = 95% confidence interval. Data are for hospital discharges with a principal diagnosis of asthma (ICD-9-CM code 493). Data, except those for children under age 5 years, are age adjusted to the 2000 standard population. Healthy People 2020 objectives RD-2.1, 2.2, and 2.3 track asthma hospitalizations separately for ages <5, 5-64, and 65+, respectively, while the data displayed here by sex and race are for all ages. The race categories black and white include persons of Hispanic or non-Hispanic origin for whom only one racial group was recorded. * Data are unreliable.

SOURCE: National Hospital Discharge Survey (NHDS), CDC/NCHS.
Asthma Deaths, 1999–2010

Rate per million

NOTES: Data are for deaths with an underlying cause of asthma (ICD-10 codes J45–J46).
SOURCE: National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS.
Asthma Deaths

Rate per million

NOTES: I = 95% confidence interval. Data are for deaths with an underlying cause of asthma (ICD-10 codes J45–J46). HP2020 objectives RD-1.1, 1.2, and 1.3 track asthma deaths separately for ages <35, 35-64, and 65+, respectively, while the data displayed here for the total and by sex and race are for all ages. Prior to 2003, only one race could be recorded; recording more than one race was not an option. Beginning in 2003 multiple-race data were reported by some states; multiple-race data were bridged to the single-race categories for comparability. Persons of Hispanic origin may be of any race.

SOURCE: National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS.
Appropriate Asthma Care, 2008

- **Told how to use inhaler**: No HP2020 Target
- **No overuse of rescue inhaler**: HP2020 Target: 90.2%
- **Taught to recognize and respond to symptoms**: HP2020 Target: 68.5%
- **Advice re: exposure to environmental triggers**: HP2020 Target: 54.6%
- **Received written asthma plan**: HP2020 Target: 36.8%
- **Told if asthma is work-related (2010)**: HP2020 Target: 17.9%

NOTES: I = 95% confidence interval. Data are for persons with current asthma who received the specified care from a health care provider, and are age adjusted to the 2000 standard population.

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS.
Activity Limitations due to Asthma Adults 18+ Years, 2008–2012

NOTES: I = 95% confidence interval. Data are for adults aged 18 years and over with current asthma who experienced activity limitations due to lung or breathing problems, and are age adjusted to the 2000 standard population. * Data are unreliable.

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS

Obj. RD-4 Decrease desired
### Burden of Respiratory Diseases, 2010

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**NOTES:** Data are for all ages except for COPD prevalence which is among adults aged 18 and over. Deaths are based on an underlying cause of asthma (ICD-10 codes J45–J46) or COPD (ICD-10 codes J40–J44). Hospital discharges, emergency department visits, and office visits are based on a principal diagnosis of asthma (ICD-9-CM code 493) or COPD (ICD-9-CM code 490-492, 496). Asthma prevalence is defined as the proportion of persons with current asthma. COPD prevalence is defined as proportion of adults who have ever been diagnosed with emphysema or who were diagnosed with chronic bronchitis in the last 12 months.

**SOURCES:** National Vital Statistics System—Mortality (NVSS-M), National Hospital Discharge Survey (NHDS), National Hospital Ambulatory Medical Care Survey (NHAMCS), National Ambulatory Medical Care Survey (NAMCS), and National Health Interview Survey (NHIS), CDC/NCHS.
COPD Prevalence, Adults 45+ Years, 2012

NOTES: Data are for adults aged 45 years and over who have ever been diagnosed with COPD, emphysema, or chronic bronchitis, and are age adjusted to the 2000 standard population. State data from the BRFSS may not be comparable to the national data from the NHIS.

SOURCE: Behavioral Risk Factor Surveillance System (BRFSS), CDC/PHSPO.
COPD Prevalence, 1997–2012

NOTES: Data are for adults who have ever been diagnosed with emphysema or who were diagnosed with chronic bronchitis in the last 12 months.

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS.
COPD Prevalence, Adults 45+ Years, 2010–2012

NOTES: I = 95% confidence interval. Data are for adults aged 45 years and over who have ever been diagnosed with emphysema or who were diagnosed with chronic bronchitis in the last 12 months, and are age adjusted to the 2000 standard population. Income groups are defined based on the ratio of family income to poverty threshold: nonpoor 200%+, near poor 100–199%, poor <100%. Respondents were asked to select one or more races. The categories black and white are for persons who reported only one racial group and exclude persons of Hispanic origin. Persons identified as Mexican or Puerto Rican may be of any race.

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS.
COPD Hospitalizations, Adults 45+ Years, 2010

NOTES: I = 95% confidence interval. Data are for hospital discharges with a principal diagnosis of COPD (ICD-9-CM code 490-492, 496) among adults aged 45 years and over. Data, except those by age, are age adjusted to the 2000 standard population. The race categories black and white include persons of Hispanic or non-Hispanic origin for whom only one racial group was recorded.

SOURCE: National Hospital Discharge Survey (NHDS), CDC/NCHS.
COPD Deaths, Adults 45+ Years, 2010

NOTES: I = 95% confidence interval. Data are for deaths with an underlying cause of COPD (ICD-10 codes J40–J44) among adults aged 45 years and over and are age adjusted to the 2000 standard population. Data by age are not age adjusted, and, therefore, the target does not apply to data by age. Multiple-race data were reported by some states; multiple-race data were bridged to the single-race categories for comparability. Persons of Hispanic origin may be of any race.

SOURCE: National Vital Statistics System—Mortality (NVSS-M), CDC/NCHS.
Activity Limitations due to COPD
Adults 45+ Years, 2012

Percent

Family Income (Percent Poverty Threshold)

Total < 100 100–199 200–399 400–599 600+

HP2020 Target: 18.7%

NOTES: I = 95% confidence interval. Data are for adults aged 45 years and over with COPD who experienced activity limitations due to lung or breathing problems, and are age adjusted to the 2000 standard population. * Data are unreliable.

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS.
Presentation Outline

- Respiratory Diseases
  - Asthma
  - Chronic Obstructive Pulmonary Disease (COPD)

- Sleep Health
Sleep Health: Public Health Impact

- 50–70 million people experience chronic sleep and wakefulness disorders.

- Sleep disorders account for approximately $16 billion dollars in annual medical costs, in addition to costs for lost productivity.

- Physician office visits (2010):
  - Sleep apnea* – 2.7 million
  - Insomnia – 5.8 million

NOTES: * Sleep apnea is a disorder with one or more pauses in breathing or shallow breaths during sleep. SOURCES: Institute of Medicine. Sleep disorders and sleep deprivation: an unmet public health problem. Washington, DC: The National Academies Press; 2006. National Ambulatory Medical Care Survey (NAMCS), CDC/NCHS.
Persons With Sleep Apnea Symptoms who Seek Medical Care, Adults 20+, 2005–2008

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Crashes Involving Drowsy Drivers, 2005–2011

Rate per 100 million vehicle miles traveled

NOTES: Data are for vehicular crashes per 100 million miles traveled due to drowsy driving. General Estimates System data are from a nationally representative sample of police-reported motor vehicle crashes. To be included, the crash must involve a motor vehicle traveling on a traffic way and result in property damage, injury, or death.

SOURCE: General Estimates System (GES), DOT/NHTSA.
Sufficient Sleep, Adults, 2012

Total
Male
Female
18-24 years
25-44 years
45-64 years
65+ years
Hispanic or Latino
White, non-Hispanic
Asian
Am. Indian/AK Native
Black, non-Hispanic
Two or more races
Nat. Hawaiian or Pacific Isl.

Percent
0 20 40 60 80 100

HP2020 Target: 70.9%

NOTES: I = 95% confidence interval. Data are for adults aged 18 years and over who get sufficient sleep (defined as ≥ 8 hours for those aged 18 to 21 years and ≥ 7 hours for those aged 22 years and over) on average during a 24-hour period. Respondents were asked to select one or more races. Data for the single race categories are for persons who reported only one racial group. Persons of Hispanic origin may be any race.

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS.
Sufficient Sleep, High School Students, 2011

NOTES: I = 95% confidence interval. Data are for students in grades 9–12 who report getting 8 or more hours of sleep on an average school night. Respondents were asked to select one or more races. The single race categories listed include persons who reported only one racial group. Persons of Hispanic origin may be of any race.

SOURCE: Youth Risk Behavior Surveillance System (YRBSS), CDC/NCHHSTP.
Key Takeaways

- **Asthma**
  - Despite increasing prevalence, *deaths have declined* while ED visits and hospitalizations have remained stable.
  - Age, sex, race and income *disparities persist.*

- **COPD**
  - Prevalence is higher for *older age* groups and *lower income* groups.
  - Disparities persist in hospitalizations and deaths by *age* and *race.*
  - Death rates are highest among the non-Hispanic *white* population.

- **Sleep Health**
  - Disparities exist by sex, race, and age.
  - Most students in *grades 11 and 12* do not get sufficient sleep.
APPENDIX

Note: The information contained within these slides provides additional details to supplement the webinar material.
## Objective Status: Respiratory Diseases

<table>
<thead>
<tr>
<th>Objective</th>
<th>Target met</th>
<th>Improving</th>
<th>Little/No change</th>
<th>Getting worse</th>
<th>Baseline only</th>
<th>Developmental</th>
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<tbody>
<tr>
<td>RD-1.1 Asthma deaths: &lt;35 years</td>
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<td>RD-1.2 Asthma deaths: 35–64 years</td>
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<td>RD-1.3 Asthma deaths: 65+ years</td>
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<td>RD–2.1 Asthma hospitalizations: &lt;5 years</td>
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<td>RD-2.2 Asthma hospitalizations: 5-64 years</td>
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<td>RD-2.3 Asthma hospitalizations: 65+ years</td>
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<td>RD-3.1 Asthma emergency department visits: &lt;5 years</td>
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<td>RD-3.2 Asthma emergency department visits: 5-64 years</td>
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<td>RD-3.3 Asthma emergency department visits: 65+ years</td>
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<td>RD-4 Activity limitations among persons with asthma</td>
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<td>RD-5.1 Children with asthma who miss school days</td>
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<td>RD-5.2 Adults with asthma who miss work days</td>
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<td>RD-6 Patient education among persons with asthma</td>
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<td>RD-7.1 Persons with asthma receiving written asthma plans from health care providers</td>
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<td>RD-7.2 Persons with asthma receiving proper use instructions with prescribed inhalers</td>
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<td>RD-7.3 Persons with asthma receiving education on early signs, symptoms, and responses to asthma episodes</td>
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<td>RD-7.4 Persons with asthma who do not use more than 1 beta agonist inhalation canister per month</td>
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<td>RD-7.5 Persons with asthma receiving advice from health professionals in reducing exposure to environmental risk factors</td>
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<td>RD-7.6 Persons with asthma who have had at least one routine follow-up visit in the past year</td>
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<td>RD-7.7 Persons with asthma whose doctor assessed their asthma control in the past year</td>
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<td>RD-7.8 Persons with asthma whose doctor assessed whether their asthma was work related</td>
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<td>RD-8 State comprehensive asthma surveillance systems</td>
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<td>RD-9 Activity limitations among persons with COPD</td>
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<td>RD-10 COPD deaths</td>
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<td>RD-11 COPD hospitalizations</td>
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<td>RD-12 COPD emergency department visits</td>
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<td>RD-13 COPD diagnosis among adults with underlying obstructive lung disease</td>
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Current HP2020 Objective Status: Respiratory Diseases

- Total number of objectives: 27

- 33% (n=9)Target met
- 26% (n=7)Improving
- 15% (n=4)Little/No change
- 11% (n=3)Getting worse
- 11% (n=3)Baseline only
- 4% (n=1)Developmental
Objective Status: Sleep Health

- **SH-1** Adults with symptoms of obstructive sleep apnea
- **SH-2** Motor vehicle crashes involving drowsy driving
- **SH-3** Students getting sufficient sleep on school nights
- **SH-4** Adults getting sufficient sleep per night
Asthma Health Care Encounter Rates 2001–2009

Rate per 100 persons with asthma

NOTES: Data are for health care encounters with a principal diagnosis of asthma (ICD-9-CM code 493).

SOURCE: National Ambulatory Medical Care Survey, National Hospital Ambulatory Medical Care Survey, National Hospital Discharge Survey, CDC/NCHS
NOTES: I = 95% confidence interval. Data are for visits to an emergency department with a first-listed diagnosis of asthma (ICD-9-CM code 493).
SOURCE: National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS.
Asthma Hospitalizations by Age

NOTES: I = 95% confidence interval. Data are for hospital discharges with a principal diagnosis of asthma (ICD-9-CM code 493). Data, except those among children aged under 5 years, are age adjusted to the 2000 standard population.

SOURCE: National Hospital Discharge Survey (NHDS), CDC/NCHS.
Asthma Patient Education

NOTES: I = 95% confidence interval. Data are for the proportion of persons with current asthma who have ever taken a course or class on how to manage their asthma, and are age adjusted to the 2000 standard population. Respondents were asked to select one or more races. The categories black and white include persons who reported only one racial group. Persons of Hispanic origin may be of any race.

SOURCE: National Health Interview Survey (NHIS), CDC/NCHS.
COPD Physician Office Visits, 2008-2010

Rate per 1,000

Age (years)

NOTES: Data are for physician office visits with a principal diagnosis of COPD (ICD-9-CM code 490-492, 496).
SOURCE: National Ambulatory Medical Care Survey (NAMCS), CDC/NCHS.
COPD Physician Office Visits, 2008-2010

Rate per 1,000

NOTES: Data are for physician office visits made by patients with COPD based on the chronic conditions checkbox or any-listed diagnosis of COPD (ICD-9-CM code 490-492, 496).

SOURCE: National Ambulatory Medical Care Survey (NAMCS), CDC/NCHS.
Sleeping, Breathing, and Quality of Life: Perspectives from:
National Heart, Lung, and Blood Institute
National Institute of Allergy and Infectious Diseases
National Institute of Environmental Health Sciences

Gary H. Gibbons, MD, Director
National Heart, Lung, and Blood Institute
December 5, 2013
Today’s Research for Tomorrow’s Care: NHLBI Enduring Principles

- Investigator-initiated discovery science.
- Balanced, cross-disciplinary research portfolio.
- Train a diverse new generation of leaders in science.
- Implementation science for public health impact that empowers patients and enables partners.
- Evidenced-based elimination of health disparities.
Chronic Obstructive Pulmonary Disease (COPD) Research

**COPDGene**
- Developing innovative imaging tools to detect COPD prior to the onset of symptoms.
- Discovering genetic factors that predispose to COPD as a guide to new therapies.

**SPIROMICS**
- Collaborative teams developing next-generation diagnostic tests and treatments for COPD.

**COPD Clinical Research Network**
- Testing new treatment strategies to reduce hospitalizations in COPD patients.
  - Macrolide Antibiotic (Azithromycin) Trial
  - Long-term Oxygen Treatment Trial (with CMS)
Public Awareness of COPD
Learn More Breathe Better

- Public Health Challenge
  - Estimated 24 million Americans with COPD; yet nearly 50% are undiagnosed and unaware.

- NHLBI Public Awareness Campaign (2007)
  - At-Risk Group: Adults 45+ with a history of smoking
  - Objectives
    • To increase awareness and understanding of COPD
    • Empower patients to move from awareness-to-action
  - Outcomes
    • Growing 80+ partner network (local/national) in 50 states
    • Breathe Better Network members conduct COPD education and outreach in their communities
Improving Asthma Outcomes by Adherence to Evidence-Based Care

**NAEPP Guidelines**
- Systematically review latest evidence and identify gaps
- Provide recommendations for clinical practice

**Healthy People Practice Communities**
- Implement guidelines in clinic and community settings
- Define lessons learned, knowledge gaps & future research priorities

**Clinical Research**
- Test new treatment strategies
- Provide new evidence base for updating guidelines
Do preschoolers with recurrent wheeze need inhaled corticosteroids (ICS) every day?

- *Clinical Trial Evidence*: Compared to daily ICS treatment, intermittent therapy (taken only as needed) uses much less (1/3) medicine for similar benefit.

Current Trials Examine New Potential Approaches to Asthma Control:

- Is asthma control improved by Vitamin D supplementation?
- Does treatment with a macrolide antibiotic improve wheezing in pre-schoolers?
Developing Novel Therapies for Asthma: A Broad, Balanced, Cross-Disciplinary Portfolio

National Heart, Lung, and Blood Institute
- Epidemiology ➔ key risk factors
- Genetics consortium ➔ personalized medicine
- Basic science ➔ cellular, molecular targets
- Centers to Advance Experimental Therapies
- Origins of Asthma Projects ➔ prevention

National Institute of Allergy and Infectious Diseases
- Allergen Epitope Research and Validation Centers
- Asthma and Allergic Diseases Cooperative Research Centers ➔ role of allergy
- Inner City Asthma Consortium ➔ immune based therapies

National Institute of Environmental Health Sciences
- Research (basic science, epidemiology, clinical) ➔ understanding environmental exposures and genetic susceptibility for prevention and intervention
- Well Being Project ➔ understanding respiratory health among children to identify environmental asthma triggers
- Broader knowledge of asthma ➔ establishing relationship between genes, social factors, and environment
Recently funded studies show adherence can be improved with novel approaches:

- Supervised therapy at school by school nurses
- Computer assisted learning in urban high schools
- Voice recognition - automated telecommunication

Current studies examine:

- Cultural competency training for primary care physicians
- Asthma management in Head Start
- Peer telephone counseling for women of color
The National Asthma Education and Prevention Program (NAEPP): From Expert Panel Report-3 to Six Key Actions

The NAEPP’s Expert Panel Report 3—Guidelines for Diagnosing and Managing Asthma (2007) is based on the best available science


Six Key Actions to Control Asthma

1. Use inhaled corticosteroids for control of persistent asthma
2. Use written asthma action plans
3. Assess asthma severity
4. Assess and monitor asthma control
5. Schedule follow-up visits
6. Control environmental exposures

www.nhlbi.nih.gov/guidelines/asthma
Mobilizing Partners to Put Guidelines Into Action for Improved Asthma Control

National Asthma Control Initiative (NACI)

- **Purpose:** To improve asthma care and control, particularly in hard-hit communities, by promoting awareness and use of the NAEPP clinical practice guidelines

- **Time Period:** 2009-2012

- **Audiences:**
  - Health Care Providers and Organizations
  - Patients, Families, and Caregivers
  - Schools and Childcare Settings
  - States, Communities, and Coalitions

National Asthma Control Initiative: Keeping Airways Open
Reducing Disparities: Coordinated Federal Action Plan

The Federal Action Plan was developed to avoid redundancies & increase impact through interagency collaborations to:

- Reduce barriers to asthma care;
- Enhance local capacity to deliver care; (e.g., health care teams, healthy homes).
- Improve ability to identify children most in need;
- Accelerate research efforts to prevent the onset of asthma.
Sleep and Health Outcomes

- Stroke risk ↑
- Hypertension risk ↑
- Sleep Deficiency
- Sleep Disorder
- CVD risk ↑
- Obesity risk ↑
- Mortality ↑

Healthy People 2020
Sleep and Weight Gain in Children: Racial Disparities

Sleep Duration During Infancy

Sleep Duration (h/d)

White  Non-white

<11  11-12  12-13  >13

%  0  20  40  60  80

Overweight, %

Sleep (hours/day)

Short Sleep Duration in Infancy and Risk of Childhood Overweight
Sleep and CVD Disparities: Social Context and Systems Science

Racism
Segregation

Socioeconomic Status

Housing Density
Crime
Noise

Shift Work
Stress
Depression

Poor Sleep Quality

CVD/STROKE
Key Takeaways

- NHLBI maintains a broad portfolio of research to effectively elucidate factors influencing COPD, asthma and sleep.
- Collaborations among NIH Institutes (NHLBI, NIAID, NIEHS) allows us to maximally leverage resources and broaden the NIH scope
- We work with our stakeholders to generate evidence, translate the science, increase awareness, and promote partnerships for respiratory and sleep health and attainment of HP 2020 goals.
Sleep and Respiratory Diseases

CDC

- National Center for Environmental Health (NCEH)
  - Asthma

- National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP)
  - Asthma, COPD and Sleep

- National Institute for Occupational Safety and Health (NIOSH)
  - Asthma, COPD and Sleep
Adults Reporting Good or Better Physical and Mental Health* United States, 2010

* Global PROMIS scale  I  Confidence Interval

National Health Interview Survey: United States, 2010
NCEH: America Breathing Easier Since 1999
CDC’s National Asthma Control Program
A Public Health Approach Since 1999:

- **Surveillance**
  - National and state level data
  - Asthma Call-back Survey

- **Partnerships**
  - 34 states, Washington D.C., and Puerto Rico
  - Non-governmental organizations
  - Federal agencies

- **Interventions and Evaluation**
  - Self-management education
  - Health care provider education
  - Environmental management
  - School-based programs
NCEH: National Asthma Surveillance

- Prevalence
- Mortality
- Hospitalization
- Outpatient visits
- ED visits
- Physician office visits

ARR per 1,000 with asthma

PBR per 10,000 population

* First-listed diagnosis; PBR population-based rate; ARR at-risk rate

NHAMCS; National Center for Health Statistics
NCEH: State Surveillance: Data Profiles

- Prevalence
- Mortality
- Hospitalization
- Patient education
- Medication use
NOTES: Data are for adults aged 18 years and over who have ever been diagnosed with asthma and still have asthma, State data from the BRFSS may not be comparable to the national data from the NHIS.
SOURCE: Behavioral Risk Factor Surveillance System (BRFSS), CDC/PHSPO
NCEH: Education for a Partnership in Asthma Care

- Establish and Maintain a Partnership
  - jointly develop treatment goals
  - health literacy (read, count, measure, time, schedule)
  - cultural sensitivity/ethnic considerations

- Provider Education
  - implementing guidelines
  - communication techniques
  - clinical decision support
  - systems-based interventions

Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma
http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm  p93-164
NCEH: Education for a Partnership in Asthma Care

- Asthma Self-Management Education at Multiple Points of Care
  - clinic/office-based education
  - emergency department/hospital-based education
  - education by pharmacists
  - education in school settings
  - community-based interventions
  - home-based interventions

- Tools for Asthma Self-Management
  - asthma action plans
  - peak flow meters

Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma
http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm p93-164
NCCDPHP: COPD Efforts

- Develop a strategic framework to tackle COPD as a public health issue
- Improve COPD surveillance
- Increase COPD awareness
NCCDPHP: Improve COPD Surveillance

- National Health and Nutrition Examination Survey
  - Adult Medical Condition Questionnaire
  - Respiratory Health and Disease Questionnaire
  - Spirometry
NCCDPHP: Improve COPD Surveillance

- Behavioral Risk Factor Surveillance System
  - Core question: (Ever told) you have COPD (chronic obstructive pulmonary disease), emphysema or chronic bronchitis?
  - COPD module questions asked of individuals with COPD in 20 states, DC, and Puerto Rico (2011)
NCCDPHP: Increase COPD Awareness

What is Chronic Obstructive Pulmonary Disease (COPD)?
COPD is the name for a group of diseases that restrict air flow and cause trouble breathing. COPD includes emphysema and chronic bronchitis. Chronic lower respiratory disease, including COPD, is the fifth leading cause of death in the United States. Fifteen million Americans have been diagnosed with COPD. Two decades ago, more than 50% of adults with poor pulmonary function were not aware that they had COPD; therefore millions more may have it.

Symptoms
- Chronic cough (also known as smoker’s cough).
- Chronic phlegm production.
- Shortness of breath while doing things you used to be able to do.
- Not being able to take a deep breath.
- Wheezing.

Causes
Silica in the primary cause of COPD in the United States, but air pollutants at home (such as secondhand smoke and some heating fuel) and at workplaces (such as dust, gases, and fumes), and genetic predisposition also can cause COPD.

Prevention and Treatment
For current smokers, smoking cessation is essential for preventing COPD. Eliminating exposure to tobacco smoke and other environmental pollutants is also important. While there is no cure for COPD, treatment is available to manage the symptoms that are caused by COPD and improve quality of life. Treatment options include medication (such as inhalers), pulmonary rehabilitation, physical activity training, and oxygen treatment.

COPD Risk Factors
You may be at an increased risk if you are older than 40 years and:
- Have symptoms of COPD.
- Have a history of smoking.
- Have been exposed to environmental or occupational pollutants.

Please talk with your health care provider about being tested for COPD using spirometry (a breathing test).

Ages Adjusted* Percentage of U.S. Adults with COPD by State or Territory, 2011*

- Table showing the percentage of Missouri adults with COPD by age, race/ethnicity, sex, employment status, education level, income, marital status, smoking status, and asthma history.

COPD among Adults in Missouri

Health and Healthcare Characteristics by COPD Status: Missouri

- Table showing the characteristics of Missouri adults with COPD, including:
  - Age Group (Years)
  - Race/Ethnicity
  - Sex
  - Employment Status
  - Education Level
  - Income
  - Marital Status
  - Smoking Status
  - Ever Had Asthma

*Table data taken from the Behavioral Risk Factor Surveillance System (BRFSS) for 2011.
NCCDPHP: Sleep Activities

- Improve sleep-related content of national and state surveillance systems
- Increase public awareness of the importance of healthy sleep
- Support research
- Promote sleep-healthy policies
NCCDPHP: Improved Surveillance for Sleep Issues

Behavioral Risk Factor Surveillance System:

Days of perceived insufficient rest or sleep question

Percentage of adult population that reported ≥14 days of insufficient rest or sleep in the past 30 days, 2008-2009

NCCDPHP: Improved Surveillance for Sleep Issues

- National Health and Nutrition Examination Survey
  - Sleep Disorders Questionnaire
    - In 2005-2008 (extensive)
    - In 2009-2010 (limited):
      - Actigraphy

- Youth Risk Behavior Survey
  - Sleep duration on school nights

- School Health Policies and Practices Study
  - School start time
Insufficient Sleep Among Georgia Adults

Insufficient sleep has been linked to the onset of and correlates with a number of chronic diseases and conditions, including diabetes, cardiovascular disease, obesity, and depression. Insufficient sleep also contributes to motor vehicle crashes and machinery-related accidents, causing substantial injury and disability each year.

How much sleep do we need?
Although much sleep is needed varies between individuals, most adults need 7-9 hours of sleep each night. Nearly 30% of U.S. adults report sleeping less than 7 hours per night.

Why don’t we get the sleep we need?
Causes of insufficient sleep include lifestyle and occupational factors (e.g., access to technology and work hours). In addition, some medical conditions, medications, and sleep disorders affect the quantity and quality of sleep.

Getting the sleep we need:
Good sleep practices are important for achieving healthy sleep.

Sleep hygiene tips:
- Go to bed at the same time each night and rise at the same time each morning.
- Moderate physical activity may help promote sleep, but avoid vigorous exercise in the few hours before going to bed.
- Avoid large meals before bedtime.
- Avoid drinking caffeine and alcohol close to bedtime.
- Avoid naps.

The sleep environment:
- Your bedroom should be a quiet, dark, and relaxing environment that is neither too hot nor too cold.
- Remove all TVs, computers, and other "gadgets" from the bedroom.
- Your bed should be comfortable and used only for sleeping and not for other activities, such as reading, watching TV, or listening to music.

Prevalence of Insufficient Sleep Among Georgia Adults by Region

For 2000-2009, 16.3% of Georgia adults reported not getting enough sleep on 5 or more days in the past 30 days. The map above presents the prevalence of insufficient sleep among Georgia adults by state. For comparison, the national map below shows state-by-state adult prevalence of insufficient sleep.

Percentage of Adult Population that Reported 14 or More Days of Insufficient Sleep in the Past 30 Days

How’s your sleep?
- You may suffer from a sleep disorder if:
  1. You frequently have difficulty sleeping (e.g., trouble falling asleep or staying asleep, feeling unrested after sleep).
  2. You snore loudly or you or others have observed that you stop breathing or gasp for breath during sleep.
  3. You suffer from excessive sleepiness during the day.
  4. You have unpleasant, lingering, creeping feelings or numbness in your legs when trying to sleep.

What to do if you have trouble sleeping:
- Practice good sleep hygiene.
- Consult your physician to discuss any of the problems above.
- Keep a sleep diary to discuss with your physician or sleep specialist.

For more information, go to www.cdc.gov/slp

Prevalence of Insufficient Rest or Sleep (14+ days in past 30 days) Among Georgia Adults, 2000-2009 (Mean: 17.9%)

<table>
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<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>23.3%</td>
</tr>
<tr>
<td>by Age</td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td>28.2%</td>
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<tr>
<td>25-34</td>
<td>35.8%</td>
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<tr>
<td>35-44</td>
<td>31.0%</td>
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<tr>
<td>45-54</td>
<td>28.7%</td>
</tr>
<tr>
<td>55-64</td>
<td>21.6%</td>
</tr>
<tr>
<td>65+</td>
<td>11.7%</td>
</tr>
</tbody>
</table>

Prevalence of Insufficient Rest or Sleep (14+ days in past 30 days) Among Georgia Adults, 2000-2009 (by Race/Ethnicity)

<table>
<thead>
<tr>
<th>Category</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>23.3%</td>
</tr>
<tr>
<td>by Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>27.4%</td>
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<tr>
<td>Female</td>
<td>22.7%</td>
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<tr>
<td>by Age</td>
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<td>20-24</td>
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<td>21.6%</td>
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<td>65+</td>
<td>11.7%</td>
</tr>
</tbody>
</table>

Data source: Behavioral Risk Factor Surveillance System (BRFSS) for 2000 and 2009. To learn more about the survey, respondents were asked, “During the past 30 days, for how many days have you felt that you did not get enough rest or sleep?” Respondents were then asked to identify the number of days per week that they felt this way. The table above presents the prevalence of insufficient sleep by sex and age.

Percent change from 2000 to 2009:
- Total: 23.3% to 17.9%
- Male: 27.4% to 22.7%
- Female: 22.7% to 17.9%

Healthy People 2020
Division of Adult and Community Health
NCHDPHP: Improved Surveillance for Sleep Issues

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NCHDPHP: Improved Surveillance for Sleep Issues
Drowsy Driving — 19 States and the District of Columbia, 2009–2010

According to the National Highway Traffic Safety Administration (NHTSA), 3.5% of fatal motor vehicle crashes (approximately 730 in 2009) and 2.0% of all crashes with non-fatal injuries (approximately 30,000 in 2009) involve drowsy driving (1). However, although data collection methods make it challenging to estimate the number of crashes that involve drowsy drivers, some modeling studies have estimated that 15% to 33% of fatal crashes might involve drowsy drivers (2,3). Fatalities and injuries are more likely in motor vehicle crashes that involve drowsy driving compared with non-drowsy driving crashes (1,4). To assess the state-level self-reported prevalence of falling asleep while driving, CDC analyzed data from a set of questions about insufficient sleep administered through the Behavioral Risk Factor Surveillance System (BRFSS) during 2000–2010. Among 147,076 respondents in 2009–2010 had a median of 52.1% and ranged from 39.1% (Oregon in 2010) to 68.8% (Nebraska in 2010). Respondents were asked, “During the past 30 days, have you ever nodded off or fallen asleep, even just for a brief moment, while driving?” Drowsy driving was defined as those with an affirmative response, whereas no drowsy driving included those who responded “no,” “don’t drive,” “don’t have a license,” or “don’t know/not sure.” Respondents also were asked, “On average, how many hours of sleep do you get in a 24-hour period?” “Do you snooze?” “During the past 30 days, for about how many days have you felt you did not get enough rest or sleep?” and “During the past 30 days, for about how many days did you find yourself uninterested in the day?” Age-adjusted prevalence of drowsy driving and 95% confidence intervals.

Adults ≥ 18 Years Who Fell Asleep While Driving in Preceding 30 Days: 2009, 2010
NCCDPHP: Improved Surveillance for Sleep Issues

CDC extramural research support

- BRFSS Sleep Question Validation Study by the University of Rochester
  - Wrist Actigraphy
  - Sleep Journals

- Delayed School Start Times Study by the University of Minnesota
  - Academic performance
  - Student health
NIOSH: Work-Related Asthma (WRA)

Burden:
- About 15% of adult asthma attributable to work
- About 23% of adults with asthma experience work-related asthma exacerbations

Examples of NIOSH Efforts:
- Surveillance (collaboration with national studies, state-based)
- Isocyanates (widely used chemicals that cause asthma)
- Indoor dampness and mold
- Healthcare (cleaners & disinfectants)
- Appropriate recognition and treatment of WRA
- Participation in authoritative groups – Cochrane, American Thoracic Society, European Respiratory Society, NIH-NAEPP
NIOSH: Work-Related COPD

- Burden – COPD prevalence, 12 million people; about 15% attributable to work
- COPD mortality in 2010: 135,000
- Collaboration with population based-studies is an important source of information
  - National Health and Nutrition Examination Survey (NHANES); NIOSH assisted in providing spirometry
  - Multi-Ethnic Study of Atherosclerosis (MESA); included spirometry and chest CT; NIOSH is analyzing relationships between occupation, industry, and COPD
- Studies evaluating specific at-risk populations: coal mine dust, agriculture, construction, WTC dust, etc.
NIOSH: Early Detection of Work-Related COPD

Efforts to improve the quality of spirometry: technician training, educational materials

Longitudinal spirometry software: monitors spirometry program quality, aids in evaluating individual data, useful for health protection and promotion
Burden: Sleep disruption by factors such as rotating shifts is a health hazard. For example, the International Agency for Research on Cancer (IARC) designates shiftwork that involves circadian disruption as probably carcinogenic to humans (Group 2A).

Sleepiness is also a safety issue for those who drive or operate heavy equipment.

NIOSH Efforts
- developing & testing tailored work schedule & sleep training for managers & workers in aviation, manufacturing, mining, nursing, retail, & trucking
- large national survey of long-haul truck drivers includes measures of sleep, fatigue, work hours, health conditions & crashes.
- surveillance of the prevalence of insufficient sleep by industry sector
- impact of shift work on women’s reproductive outcomes
- adverse health outcomes associated with insufficient sleep & shift work in police officers
- Series of long work hour studies examining insufficient sleep, depression, injury, immune measures
- quantitative risk assessment of work hours related to occupational illnesses & injury

See NIOSH Blog  http://blogs.cdc.gov/niosh-science-blog/2012/03/09/sleep/
EPA’s Asthma Program

- Aimed at reducing racial and ethnic asthma disparities
  - Training 5,000+ health care professionals annually to help families manage environmental triggers
  - Raising awareness and action via the Asthma Media Campaign and www.noattacks.org.
  - Disseminating best practices and successful strategies through:
    - www.AsthmaCommunityNetwork.org
    - National Environmental Leadership Award in Asthma Management
Healthy People objectives related to asthma, COPD, and sleep disorders are addressed by three organizational units at CDC.

CDC has established programs dedicated to improving the quality of life for those affected by respiratory disease and sleep disorders.

The CDC programs work closely with other federal agencies, non-governmental organizations, and state health departments to achieve these objectives.
APPENDIX

Note: The information contained within these slides provides additional details to supplement the webinar material.
Effectiveness of Home-Based, Multi-Trigger, Multicomponent Interventions with an Environmental Focus for Reducing Asthma Morbidity

A Community Guide Systematic Review

Deidre D. Crocker, MD, Stella Kinyota, MD, MPH, Gema G. Dumitru, MD, MPH, Colin B. Ligon, MD, Elizabeth J. Herman, MD, MPH, Jill M. Ferdinands, PhD, David P. Hopkins, MD, MPH, Briana M. Lawrence, MPH, Theresa A. Sipe, PhD, MPH, Task Force on Community Preventive Services

Context: Asthma exacerbations are commonly triggered by exposure to allergens and irritants within the home. The purpose of this review was to evaluate evidence that interventions that target reducing these triggers through home visits may be beneficial in improving asthma outcomes. The interventions involve home visits by trained personnel to conduct two or more components that address asthma triggers in the home. These interventions focus on reducing exposures to a range of asthma triggers (allergens and irritants) through environmental assessment, education, and remediation.

Evidence acquisition: Using methods previously developed for the Guide to Community Preventive Services, a systematic review was conducted to evaluate the evidence on effectiveness of home-based, multi-trigger, multicomponent interventions with an environmental focus in
President’s Task Force on Environmental Health Risks and Safety Risks to Children

Coordinated Federal Action Plan to Reduce Racial and Ethnic Asthma Disparities

Division of Lung Diseases
National Heart, Lung, and Blood Institute

Indoor Environments Division
U.S. Environmental Protection Agency

National Center for Environmental Health Centers for Disease Control and Prevention

US Department of Housing and Urban Development

Healthy People 2020

United States Environmental Protection Agency
NIOSH: Improve WRA Awareness

- MMWR
- Scientific Publications
- Twitter
COPD Surveillance—United States, 1999-2011

Earl S. Ford, MD, MPH; Janet B. Croft, PhD; David M. Mannino, MD, FCCP; Anne G. Wheaton, PhD; Xingyou Zhang, PhD; and Wayne H. Giles, MD

This report updates surveillance results for COPD in the United States. For 1999 to 2011, data from national data systems for adults aged ≥25 years were analyzed. In 2011, 6.5% of adults (approximately 13.7 million) reported having been diagnosed with COPD. From 1999 to 2011, the overall age-adjusted prevalence of having been diagnosed with COPD declined ($P = .019$). In 2010, there were 10.3 million (49.48 per 10,000) physician office visits, 1.5 million (72.0 per 10,000) ED visits, and 699,000 (32.2 per 10,000) hospital discharges for COPD. From 1999 to 2010, no significant overall trends were noted for physician office visits and ED visits; however, the age-adjusted hospital discharge rate for COPD declined significantly ($P = .001$). In 2010 there were 312,654 (11.2 per 1,000) Medicare hospital discharge claims submitted for COPD. Medicare claims (1999-2010) declined overall ($P = .045$), among men ($P = .022$) and among enrollees aged 65 to 74 years ($P = .033$). There were 133,575 deaths (63.1 per 100,000) from COPD in 2010. The overall age-adjusted death rate for COPD did not change during 1999 to 2010 ($P = .163$). Death rates (1999-2010) increased among adults aged 45 to 54 years ($P < .001$) and among American
NCCDPHP: Improve COPD Surveillance

- National Health Interview Survey
  - Emphysema
  - Chronic bronchitis
  - *Chronic obstructive pulmonary disease (COPD)
Tips From Former Smokers Campaign

NCCDPHP: Increase COPD Awareness

Tips From Former Smokers

About the Campaign
I'm Ready to Quit!
Real Stories
Diseases/Conditions Featured in the Campaign
For Specific Groups
Campaign Resources
Badges and Buttons
Videos
Beatrice's Videos
Bill's Videos
Brandon's Videos
Ellie's Videos
James's Videos
Jessica's Videos
Mariano's Videos
Marie's Videos
Michael's Videos
Nathan's Videos
Roosevelt's Videos
Shane's Videos
Sharon's Videos
Shawn's Videos

Michael's Ad: COPD and Smoking

Michael, who is in his 30s, has Chronic Obstructive Pulmonary Disease (COPD) — a condition caused by smoking — that makes it harder and harder to breathe. In this TV commercial from CDC's Tips From Former Smokers campaign, Michael offers a tip that if your doctor gives you 5 years to live, like his doctor did, spend it sharing your wisdom and love with your children and grandchildren so they have something to remember you by.

Smoking and COPD

What is COPD?
Chronic obstructive pulmonary disease (COPD) is a serious lung disease that gradually makes it harder and harder to breathe. COPD includes emphysema and chronic bronchitis.

With COPD, less air flows through the airways—the tubes that carry air in and out of your lungs—because of one or more of the following:

- The airways and tiny air sacs in the lungs lose their ability to stretch and shrink back.
- The walls between many of the air sacs are destroyed.
- The walls of the airways become thick and inflated (inflamed and swollen).
- The airways make more mucus than usual, which can clog them and block air flow.

In the early stages of COPD, there may be no symptoms, or you may only have mild symptoms, such as:

- A nagging cough (often called "smoker's cough")
- Shortness of breath, especially with physical activity
- Wheezing (a whistling sound when you breathe)
- Tightness in the chest

As the disease gets worse, symptoms may include:

- Having trouble catching your breath or talking
- Blue or gray lips and/or fingernails (a sign of low oxygen levels in your blood)
- Trouble with mental alertness
- A very fast heartbeat
- Swelling in the feet and ankles
- Weight loss

How severe your symptoms are depends on the extent of lung damage. If you keep smoking, the damage will get worse faster than if you stop smoking. Among 15 million U.S. adults with COPD, 39% continue to smoke.

"Every cell in my body was screaming to me that I was suffocating to death and I was going to die. Losing your breath is losing your life force."
NCCDPHP: Increase COPD Awareness

- Podcasts
- Twitter Chat
NCCDPHP: Improved Surveillance

- Behavioral Risk Factor Surveillance System
  - Days of perceived insufficient rest or sleep question
  - Insufficient Sleep module:
    - Usual sleep duration
    - Snoring
    - Excessive daytime sleepiness
    - Falling asleep at the wheel
NCCDPHP: Improved Surveillance

- National Health and Nutrition Examination Survey
  - Sleep Disorders Questionnaire
    - In 2005-2008 (extensive):
      - General sleep – sleep duration, sleep latency
      - Sleep disorders/symptoms – OSA, insomnia, RLS
      - Sleep-related difficulties
    - In 2009-2010 (limited):
      - How much sleep do you usually get at night on weekdays or workdays?
      - Have you ever told a doctor or other health professional that you have trouble sleeping?
      - Have you ever been told by a doctor or other health professional that you have a sleep disorder?
  - Actigraphy
NCCDPHP: Improved Surveillance

School Health

- Youth Risk Behavior Survey
  - Sleep duration on school nights

- School Health Policies and Practices Study
  - School start time
Raising Awareness of Sleep as a Healthy Behavior

Geraldine S. Perry, DrPH, RDN; Susheel P. Patil, MD, PhD; Letitia R. Presley-Cantrell, PhD

Suggested citation for this article: Perry GS, Patil SP, Presley-Cantrell LR. Raising Awareness of Sleep as a Healthy Behavior. Prev Chronic Dis 2013;10:130081. DOI: http://dx.doi.org/10.5888/pcd10.130081.

Sleep is an essential component of health, and its timing, duration, and quality are critical determinants of health (1). Sleep may play an important role in metabolic regulation, emotion regulation, performance, memory consolidation, brain recuperation processes, and learning (2). Because of the importance of these functions, sleep should be viewed as being as critical to health as diet and physical activity. However, public health practitioners and other health care
Goals
1. To increase public awareness about sleep, sleep disorders, and the consequences of sleep deprivation
2. To promote science-based public policies
3. To advance basic, clinical, applied, and population-based research
4. To promote recognition of and access to care for all individuals with sleep disorders.
Home-Based Case Management for Asthma

Healthy People 2020 Progress Review
December 5, 2013

Karen Meyerson, MSN, APRN, FNP-C, AE-C
Who We Are

- **Community Asthma Coalition** established in 1994
- **Location:** Grand Rapids, Michigan
- **Population:** 82,933 people with asthma in 3 counties
- **Target population:** children (<18 years) with uncontrolled asthma from low-income families
- **Backgrounds served:** 33% African American, 32% Hispanic/Latino, 15% Caucasian
  - 78% covered by Medicaid, 20% uninsured/under-insured
- **Original funding:** Foundations, local hospitals
Asthma Burden for Children with Medicaid - Michigan

What We Do

Why we are essential to the delivery of quality asthma care in our community:

- Provide asthma education and case management support in homes
- Utilize holistic approach to asthma management
  - Work with patients, caregivers, families, school staff, health care providers
- Serve as the “eyes and ears” of providers in the homes
Tailored Environmental Interventions: Case Management

- Staff: Case managers, social worker, community health workers
- Home-Based Case Management:
  - Home visits
  - Medical home visit(s)
  - School/daycare visit(s)
  - Up to 18 visits authorized per patient, per year
- Community outreach:
  - Speakers’ Bureau
Our Impact

The results we’re most proud of:

- Design and implement a sustainable, comprehensive home-based asthma case management model
- First asthma coalition in the nation to partner with a health plan and obtain reimbursement for services
- Long-term partnership with health plans who report cost savings and positive return on investment (ROI)
- 60% decrease in hospitalizations
- 40% decrease in ED visits
- Two national U.S. EPA awards:
  - National Environmental Leadership Award in Asthma Management (2008)
Getting Early Results: Evaluating the System

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<th>Control Group N=39</th>
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<td>Days Hospitalized</td>
<td>114</td>
<td>25</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

MATCH Study: Utilization

Percentage of Individuals with Asthma related Medical Care Usage in last 6 months By Intake/Discharge

- ≥ 3 ED visit: -78.95 %Δ
- ≥ 1 ED visit: -60.34 %Δ
- ≥ 1 Hospitalization: -83.33 %Δ

Intake  Discharge
“This is the woman who saved my life”
Key Takeaways

- Building and Fueling the System
  - Diversify your funding base
  - Don’t reinvent the wheel
  - Plan for focused growth, but ensure financial stability at every step
- Build strong community partnerships
  - “Leave your badges at the door”
- Evaluating & Tracking Results
  - Measure everything and share outcomes with potential funders
- The Asthma Network of West Michigan is striving daily to bring asthma under control in our community. Individuals with asthma should expect nothing less.
For more information, please contact:

- Karen Meyerson, MSN, APRN, NP-C, AE-C
- E-mail: meyersok@mercyhealth.com
- Websites: www.asthmanetworkwm.org
  www.GetAsthmaHelp.org
Roundtable Discussion
Please take a moment to fill out our brief survey
LHI Infographic Gallery

The Leading Health Indicators are high-priority health issues in the United States that serve as measures of the Nation’s health. Each month healthypeople.gov displays one or more infographics to visually communicate the existing health disparities for the featured Leading Health Indicator Topic.

If you would like the monthly infographic and bulletin sent straight to your inbox, sign up for Healthy People email updates.

Prevention of Foodborne Illness and Medical Product Adverse Events

Wednesday, January 8 | 12:00 PM EST

Please join us as we review select Healthy People 2020 objectives in the Food Safety and Medical Products Safety Topic Areas.

Hear from a community-based organization that is partnering to share evidence-based science with consumers to prevent illness.

To register, visit: www.healthypeople.gov
Stay Connected

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EMAIL         hp2020@hhs.gov
TWITTER       @gohealthypeople
LINKEDIN      Healthy People 2020
YOUTUBE       ODPHP (search “healthy people”)
Join us on January 23rd for a *Who’s Leading the Leading Health Indicators?* Webinar to learn how one group is working to address the importance of oral health. Register soon! www.healthypeople.gov
Healthy People 2020
Sharing Library

A library of stories highlighting ways organizations across the country are implementing Healthy People 2020

Healthy People in Action - Sharing Library
http://healthypeople.gov/2020/implement/MapSharingLibrary.aspx
Healthy People 2020
Progress Review Planning Group

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