Howard K. Koh, MD, MPH
Assistant Secretary for Health
U.S. Department of Health and Human Services
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
- Gary Gibbons, MD, Director
  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
- 1979: Clean Air Act
- 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
- 2010:
Overview: Respiratory Diseases

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

■ Respiratory Diseases
  − Asthma
  − Chronic Obstructive Pulmonary Disease (COPD)

■ Sleep Health
Burden of Respiratory Diseases, 2010

<table>
<thead>
<tr>
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<td><strong>Deaths</strong></td>
<td>3,400</td>
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<td>1,750,000</td>
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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.

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.
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

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

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**: 95.2% (No HP2020 Target)
- **No overuse of rescue inhaler**: 90.2% (HP2020 Target: 90.2%)
- **Taught to recognize and respond to symptoms**: 68.5% (HP2020 Target: 68.5%)
- **Advice re: exposure to environmental triggers**: 54.6% (HP2020 Target: 54.6%)
- **Received written asthma plan**: 36.8% (HP2020 Target: 36.8%)
- **Told if asthma is work-related (2010)**: 17.9% (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.

**Objects:** RD-7.1 through 7.5, 7.8

Increase desired.
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
 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

NOTE: I = 95% confidence interval. Data are for adults aged 20 years and over who (snore 5 or more nights per week) OR (snort, gasp, or stop breathing 5 or more nights per week) OR (feel excessively sleepy during the day 16–30 times per month AND usually sleep 7 or more hours per night) who have told a health professional that they have trouble sleeping. Data 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. Respondents were asked to select one or more race categories. The categories black and white are for persons who reported only one racial group and exclude persons of Hispanic origin. Persons of Mexican origin may be any race.

SOURCE: National Health and Nutrition Examination Survey (NHANES), CDC/NCHS.
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

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.
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

- RD-1.1 Asthma deaths: <35 years
- RD-1.2 Asthma deaths: 35–64 years
- RD-1.3 Asthma deaths: 65+ years
- RD-2.1 Asthma hospitalizations: <5 years
- RD-2.2 Asthma hospitalizations: 5-64 years
- RD-2.3 Asthma hospitalizations: 65+ years
- RD-3.1 Asthma emergency department visits: <5 years
- RD-3.2 Asthma emergency department visits: 5-64 years
- RD-3.3 Asthma emergency department visits: 65+ years
- RD-4 Activity limitations among persons with asthma
- RD-5.1 Children with asthma who miss school days
- RD-5.2 Adults with asthma who miss work days
- RD-6 Patient education among persons with asthma
- RD-7.1 Persons with asthma receiving written asthma plans from health care providers
- RD-7.2 Persons with asthma receiving proper use instructions with prescribed inhalers
- RD-7.3 Persons with asthma receiving education on early signs, symptoms, and responses to asthma episodes
- RD-7.4 Persons with asthma who do not use more than 1 beta agonist inhalation canister per month
- RD-7.5 Persons with asthma receiving advice from health professionals in reducing exposure to environmental risk factors
- RD-7.6 Persons with asthma who have had at least one routine follow-up visit in the past year
- RD-7.7 Persons with asthma whose doctor assessed their asthma control in the past year
- RD-7.8 Persons with asthma whose doctor assessed whether their asthma was work related
- RD-7.9 Persons with asthma whose doctor assessed whether their asthma was work related
- RD-8 State comprehensive asthma surveillance systems
- RD-9 Activity limitations among persons with COPD
- RD-10 COPD deaths
- RD-11 COPD hospitalizations
- RD-12 COPD emergency department visits
- RD-13 COPD diagnosis among adults with underlying obstructive lung disease
Current HP2020 Objective Status: Respiratory Diseases

Total number of objectives: 27

- Target met: 11% (n=3)
- Improving: 4% (n=1)
- Little/No change: 26% (n=7)
- Getting worse: 15% (n=4)
- Baseline only: 33% (n=9)
- Developmental: None
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
Asthma Emergency Department Visits

Notable Features:
- **Rate per 10,000**: Graphs show the number of asthma ED visits per 10,000 people by age group (under 5, 5-64, 65 years and over) for two time periods (1995-97, 2008-10).
- **HP2020 Targets**: The chart includes HP2020 targets for each age group:
  - Under 5 years: 95.6
  - 5-64 years: 49.7
  - 65 years and over: 15.8

**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.

**Obj. RD-3.1, 3.2, 3.3**
Decrease desired
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: 1 = 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.

Obj. RD-6
Increase desired
COPD Physician Office Visits, 2008-2010

Rate per 1,000

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.

[Diagram showing the cycle of research from Basic Research, Translational Research, Clinical Trials, to Implementation Science, with arrows indicating the flow.]
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

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

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


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
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 $\uparrow$
- Hypertension risk $\uparrow$
- Mortality $\uparrow$
- CVD risk $\uparrow$
- Obesity risk $\uparrow$

Sleep Deficiency
Sleep Disorder

Mortality $\uparrow$
Sleep and Weight Gain in Children: Racial Disparities

Sleep Duration During Infancy

- **White**
- **Non-white**

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.
Vikas Kapil, DO, MPH, FACOEM
Acting Deputy Director and Chief Medical Officer
National Center for Environmental Health and
Agency for Toxic Substances and Disease Registry
Centers for Disease Control and Prevention
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
NCEH: Reducing the Burden from Asthma
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

* 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
Current Asthma Prevalence, Adults 18+ years

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
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
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
Public Health Strategic Framework for COPD Prevention
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

Chronic Obstructive Pulmonary Disease (COPD) is a lung disease characterized by persistent coughing, breathlessness, and chronic bronchitis. It is the third leading cause of death in the United States. It affects more than 15 million Americans and is often confused with asthma. COPD can worsen over time, leading to reduced quality of life and, in severe cases, death.

What is COPD?

- Chronic bronchitis
- Emphysema
- Poor coughing
- Persistent wheezing
- Shortness of breath
- Exercising
- Anxiety
- Smoking

Risk Factors

- Age
- Smoking
- Occupation
- Respiratory infections
- Air pollution

Symptoms

- Persistent coughing
- Exercising
- Shortness of breath
- Anxiety
- Smoking

Statistics

- 15 million Americans are affected
- 1 in 5 adults older than 40 have COPD

Prevention and Treatment

- Quit smoking
- Exercise
- Medications (bronchodilators)
- Oxygen therapy
- Pulmonary rehabilitation

Healthcare Resources

- NCCDPHP
- COPD Foundation
- American Lung Association

Did you know?

- COPD is the leading cause of death due to chronic disease
- It affects more people than heart disease, cancer, and diabetes combined

For more information, visit the NCCDPHP website or the American Lung Association.
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
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
NCCDPHP: Improved Surveillance for Sleep Issues

Insufficient Sleep State Fact Sheets

Insufficient Sleep Among Georgia Adults

Sleep, like food and water, is essential for life.

Consequences of Insufficient Sleep:
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. Insufficient Sleep can result in a variety of health problems, including:

1. Increased risk of heart disease
2. Increased risk of diabetes
3. Increased risk of obesity
4. Decreased immune function
5. Decreased cognitive function

How much sleep do we need?
Although how much sleep is needed varies between individuals, most adults need 7-9 hours of sleep each night. According to the National Sleep Foundation, adults should aim for 7-9 hours of sleep per night. This recommendation is based on the average amount of sleep needed for optimal health and well-being.

Why don’t we get the sleep we need?
Causes of insufficient sleep include lifestyle and occupational factors, such as working long hours or shift work, as well as medical conditions. Insufficient sleep can also be a symptom of other medical conditions, such as sleep disorders, which can affect the quality and quantity of sleep.

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

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

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

Adult Prevalence of Insufficient Sleep by State or Territory, 2000-2009

Prevalence of Insufficient Sleep Among Georgia Adults:

- 15.3% of Georgia adults reported not getting enough sleep on 21 days in the past 30 days.
- The table below presents the prevalence of insufficient sleep among Georgia adults by state.

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

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
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<tr>
<td>20-24</td>
<td>28.3</td>
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<td>25-34</td>
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<td>28.7</td>
<td>28.1</td>
<td>29.3</td>
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<td>55-64</td>
<td>26.0</td>
<td>25.6</td>
<td>26.4</td>
</tr>
<tr>
<td>65+</td>
<td>18.0</td>
<td>17.5</td>
<td>18.5</td>
</tr>
</tbody>
</table>

Race/Ethnicity:
- White: 28.4%
- Black: 30.9%
- Hispanic: 29.5%
- Other: 24.9%

Employment Status:
- Employed: 28.4%
- Unemployed: 28.1%
- Retired: 24.9%
- Unable to work: 26.1%

Marital Status:
- Married: 29.5%
- Divorced: 27.9%
- Widowed: 27.9%
- Single: 27.9%

Children in Home:
- 21.5%

Body Mass Index:
- Underweight: 24.3%
- Normal weight: 25.3%
- Overweight: 24.3%

For more information, go to https://www.cdc.gov/sleep
NCCDPHP: Improved Surveillance for Sleep Issues

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
NIOSH: Sleep & Work Schedule Research

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. 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
NIOSH: Improve WRA Awareness

- MMWR
- Scientific Publications
- Twitter
CHEST

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 (494.8 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
Marianna's Videos
Marie's Videos
Michael's Videos
Nathan's Videos
Roosevelt's Videos
Shane's Videos
Sharon'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?
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 inflamed (swollen and red).
- The airways make more mucus than usual, which can plug 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.

Michael who’s been diagnosed with COPD, has found it harder and harder to breathe.

“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.”


Related Links
Smoking & Tobacco Use
Smoketree.gov
National Cancer Institute
NCCDPHP: Increase COPD Awareness

- **Podcasts**
  - Learn More Breathe Better
    - Easy Breathing
    - Chronic obstructive pulmonary disease, or COPD, is a major cause of death and disability in the U.S. In this podcast, Nicole Kocsic discusses COPD. Created: 12/6/2012 by MMWR. Date Released: 12/6/2012.
  - More info on this topic

- **Twitter Chat**
  - Breathe Better
  - An awareness campaign for those at risk for and living with COPD by the National Heart, Lung, and Blood Institute, Washington, D.C. - www.nhlbi.nih.gov/aboutCOPD
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...
NCCDPHP: National Sleep Awareness Roundtable (NSART)

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

<table>
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<th>Clinical Outcomes</th>
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<th>Control Group N=39</th>
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<td>Pre</td>
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<td>ED Visits</td>
<td>80</td>
<td>61</td>
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<td>Hospitalizations</td>
<td>41</td>
<td>13</td>
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<tr>
<td>Days Hospitalized</td>
<td>114</td>
<td>25</td>
<td>&lt;0.0001</td>
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MATCH Study: Utilization

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

- ≥ 3 ED visit: 28.36% Δ -78.95%
- ≥ 1 ED visit: 86.57% Δ -60.34%
- ≥ 1 Hospitalization: 45.45% Δ -83.33%

Intake | Discharge
--- | ---
28.36% | 5.97%
86.57% | 34.33%
45.45% | 7.58%
“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

JOIN THE HEALTHY PEOPLE LISTSERV & CONSORTIUM

WEB  healthypeople.gov
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
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
<table>
<thead>
<tr>
<th>Jeanne Moorman, CDC/NCEH</th>
<th>Leda Gurley, CDC/NCHS</th>
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