

CHAPTER 36

Respiratory Diseases (RD)

Lead Agencies

Centers for Disease Control and Prevention
National Institutes of Health

Contents

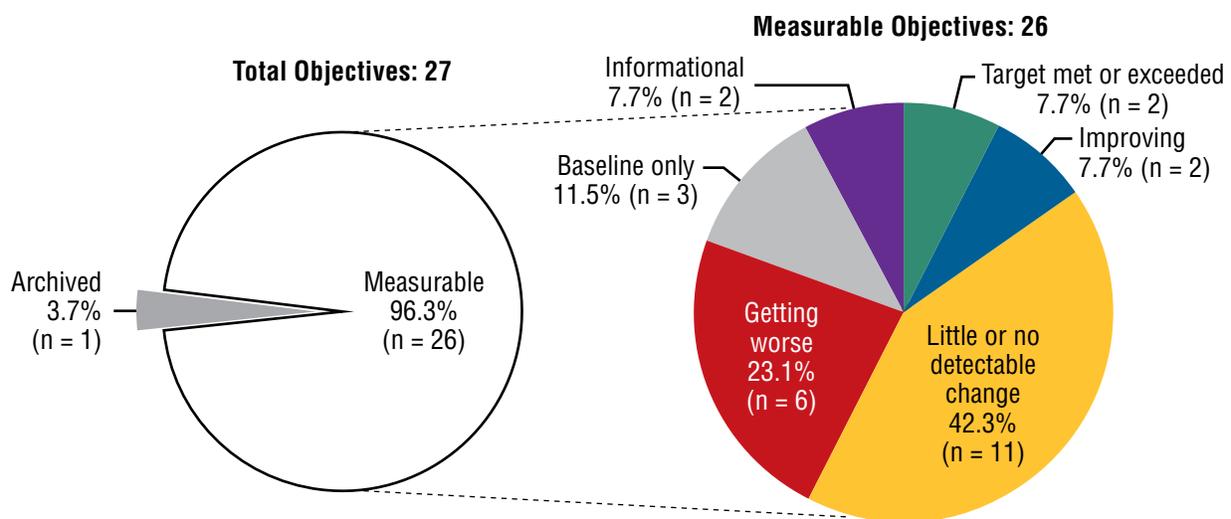
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Goal: Promote respiratory health through better prevention, detection, treatment, and education efforts.

This chapter includes objectives that track mortality, hospitalizations, emergency department visits, and activity limitations associated with asthma and chronic obstructive pulmonary disease (COPD). Appropriate asthma care, lost school or work days due to asthma, and state-based asthma surveillance systems are also monitored. The [Reader's Guide](#) provides a step-by-step explanation of the content of this chapter, including criteria for highlighting objectives in the Selected Findings.¹

Status of Objectives

Figure 36–1. Midcourse Status of the Respiratory Diseases Objectives



Of the 27 objectives in the Respiratory Diseases Topic Area, 1 objective was archived² and 26 were measurable³ (Figure 36–1, Table 36–1). The status of the measurable objectives was as follows (Table 36–2):

- 2 objectives had met or exceeded their 2020 targets,⁴
- 2 objectives were improving,⁵
- 11 objectives had demonstrated little or no detectable change,⁶
- 6 objectives had worsened,⁷
- 3 objectives had baseline data only,⁸ and
- 2 objectives were informational.⁹

Selected Findings

Asthma

Two of the 22 measurable objectives monitoring asthma had met or exceeded their 2020 targets, 2 had improved,

8 demonstrated little or no detectable change, and 5 had worsened. A target was not set for 2 of the objectives, and the remaining 3 objectives had baseline data only (Table 36–2).

Deaths Due to Asthma

- A target was not set for **asthma deaths among children and adults under age 35** (Table 36–2, RD-1.1: 3.4 and 3.7 deaths per million population in 2007 and 2013, respectively).
 - » In 2013, there were statistically significant disparities by sex, race and ethnicity, and geographic location in the rate of asthma deaths among children and adults under age 35 (Table 36–3, RD-1.1).
- Between 2007 and 2013, **asthma deaths among adults aged 35–64** (RD-1.2) increased from 11.0 to 12.0 deaths per million population, moving away from the baseline and 2020 target (Table 36–2).

- » In 2013, there were statistically significant disparities by sex, race and ethnicity, and geographic location in the rate of asthma deaths among adults aged 35–64 (RD-1.2, Table 36–3).
- **Asthma deaths among adults aged 65 and over** (RD-1.3) declined from 43.4 deaths per million population in 2007 to 35.7 in 2013, moving toward the 2020 target (Table 36–2).
 - » In 2013, there were statistically significant disparities by sex and race and ethnicity in the rate of asthma deaths among adults aged 65 and over (RD-1.3, Table 36–3). The disparity by geographic location was not statistically significant.
- Asthma death rates varied by state. Forty-eight states and the District of Columbia had statistically reliable data in 2011–2013. The asthma death rates for 15 of these states were at or below 10.1 per million population (Map 36–1: combined data for RD-1.1, RD-1.2, and RD-1.3).

Hospitalizations and Emergency Department Visits for Asthma

- Between 2007 and 2010, there was little or no detectable change in the rate of **asthma-related hospitalizations among children under age 5 years** (RD-2.1: 41.4 and 33.1 per 100,000 population); the age-adjusted rate **among children and adults aged 5–64** (RD-2.2: 11.1 and 10.5 per 100,000); and the age-adjusted rate **among adults aged 65 and over** (RD-2.3: 25.3 and 25.5 per 100,000) (Table 36–2).
 - » In 2008, the disparities by sex and race and ethnicity in the asthma-related hospitalization rate among children under age 5 years were not statistically significant (RD-2.1, Table 36–3).
 - » In 2010, there were statistically significant disparities by sex and race and ethnicity in the age-adjusted asthma-related hospitalization rates among children and adults aged 5–64 and among adults aged 65 and over (RD-2.2 and RD-2.3, Table 36–3).
- Between 2005–2007 and 2009–2011, there was little or no detectable change in the rate of **emergency department visits for asthma per 10,000 population among children under age 5 years** (RD-3.1: 132.8 and 125.8); **among children and adults aged 5–64** (RD-3.2: 57.0 and 61.5); and **among adults aged 65 and over** (RD-3.3: 21.9 and 26.8) (Table 36–2).
 - » In 2009–2011, there were statistically significant disparities by sex and race and ethnicity in the rate of emergency department visits for asthma among children under age 5 years (RD-3.1, Table 36–3).
 - » In 2009–2011, there were statistically significant disparities by sex and race and ethnicity in the rate of emergency department visits for asthma among children and adults aged 5–64 (RD-3.2, Table 36–3). The disparity by provider’s geographic location was not statistically significant.
 - » In 2009–2011, there were statistically significant disparities by race and ethnicity and provider’s geographic location in the rate of emergency department visits for asthma among adults aged 65 and over (RD-3.3, Table 36–3). The disparity by sex was not statistically significant.

Restricted Activity Due to Asthma

- The age-adjusted proportion of **persons with asthma who had experienced activity limitations due to a respiratory problem** (RD-4) declined from 12.7% in 2008 to 10.5% in 2014, moving toward the 2020 target (Table 36–2).
 - » In 2014, there were statistically significant disparities by education, family income, and geographic location in the age-adjusted proportion of persons with asthma who experienced activity limitations due to a respiratory problem (RD-4, Table 36–3). The disparities by sex and race and ethnicity were not statistically significant.
- There was little or no detectable change in the proportion of **children aged 5–17 with asthma who had missed school days due to their asthma** (RD-5.1: 58.7% in 2008 and 59.1% in 2013) (Table 36–2).
 - » In 2013, there was a statistically significant disparity by race and ethnicity in the proportion of children aged 5–17 with asthma who had missed school days due to their asthma (RD-5.1, Table 36–3). The disparities by sex, family income, and geographic location were not statistically significant.
- The proportion of **adults aged 18–64 with asthma who had missed work due to their asthma** (RD-5.2) increased from 33.2% in 2008 to 41.2% in 2013, moving away from the baseline and 2020 Target (Table 36–2).
 - » In 2013, there were statistically significant disparities by race and ethnicity, education, family income, and disability status in the proportion of adults with asthma who had missed work due to their asthma (RD-5.2, Table 36–3). The disparities by sex and geographic location were not statistically significant.

Asthma Patient Education and Treatment

- There was little or no detectable change in the age-adjusted proportion of **persons with asthma who had received formal asthma education** (RD-6: 12.1% in 2008 and 12.8% in 2013) (Table 36-2).
 - » In 2013, there was a statistically significant disparity by geographic location in the proportion of persons with asthma who had received formal asthma education (RD-6, Table 36-3). The disparities by sex, race and ethnicity, education, family income, and disability status were not statistically significant.
- Between 2008 and 2013, the age-adjusted proportion of **persons with asthma who had received a written asthma plan from their health care provider** (RD-7.1) increased from 33.4% to 40.5%; and the age-adjusted proportion of **persons with asthma who had received education on how to respond to an asthma episode, including the early signs and symptoms** (RD-7.3) increased from 64.8% to 68.7%, exceeding their respective 2020 targets (Table 36-2).
 - » In 2013, there were statistically significant disparities by disability status and geographic location in the age-adjusted proportion of persons with asthma who had received a written plan from their health care provider (RD-7.1, Table 36-3). The disparities by sex, race and ethnicity, education, and family income were not statistically significant.
 - » In 2013, there were statistically significant disparities by education, family income, disability status, and geographic location in the age-adjusted proportion of persons with asthma who had received education on early signs, symptoms, and responses to asthma episodes (RD-7.3, Table 36-3). The disparities by sex and race and ethnicity were not statistically significant.
- A target was not set for the age-adjusted proportion of **persons with asthma who had received proper use instructions with prescribed inhalers** (RD-7.2: 95.9% in 2008, Table 36-2).
 - » In 2008, there was a statistically significant disparity by geographic location in the age-adjusted proportion of persons with asthma who had received proper use instructions with prescribed inhalers (RD-7.2, Table 36-3). The disparities by sex, race and ethnicity, education, and family income were not statistically significant.
- Between 2008 and 2013, the age-adjusted proportion of **persons with asthma who did not use more than one beta agonist inhalation canister per month** (RD-7.4) decreased from 87.9% to 81.8%; and the age-adjusted proportion of **persons with asthma who had received advice from a health professional on how to reduce exposures to environmental risk factors** (RD-7.5) decreased from 50.8% to 47.3%, moving away from their respective baselines and 2020 targets (Table 36-2).
 - » In 2013, there were statistically significant disparities by education, family income, and disability status in the age-adjusted proportion of persons with asthma who did not use more than one beta agonist inhalation canister per month (RD-7.4, Table 36-3). The disparities by sex, race and ethnicity, and geographic location were not statistically significant.
 - » In 2013, there was a statistically significant disparity by education in the age-adjusted proportion of persons with asthma who had received advice from a health professional on how to reduce exposures to environmental risk factors (RD-7.5, Table 36-3). The disparities by sex, race and ethnicity, family income, disability status, and geographic location were not statistically significant.
- Data beyond the baseline were not available for the age-adjusted proportion of **persons with asthma who had at least one routine medical follow-up visit in the past 12 months** (RD-7.6: 57.2% in 2013); **persons with asthma whose doctor had assessed their asthma at the last visit** (RD-7.7: 52.2% in 2013); and **adults aged 18 and over with asthma who had discussed with a health professional whether their asthma was work related** (RD-7.8: 14.4% in 2010), so progress toward the 2020 targets could not be assessed (Table 36-2).
 - » In 2013, there was a statistically significant disparity by disability status in the age-adjusted proportion of persons with asthma who had at least one routine medical follow-up visit in the past 12 months (RD-7.6, Table 36-3). The disparities by sex, race and ethnicity, education, family income, and geographic location were not statistically significant.
 - » In 2013, there were statistically significant disparities by family income and geographic location in the age-adjusted proportion of persons with asthma whose doctor had assessed their asthma at the last visit (RD-7.7, Table 36-3). The disparities by sex, race and ethnicity, education, and disability status were not statistically significant.

- » In 2010, the disparities by sex, race and ethnicity, education, family income, disability status, and geographic location in the age-adjusted proportion of adults with asthma who had discussed with a health professional whether their asthma was work related (RD-7.8) were not statistically significant (Table 36-3).

Asthma Surveillance

- The number of **states (including the District of Columbia) and territories with comprehensive asthma surveillance systems** (RD-8) declined from 43 in 2009 to 38 in 2015, moving away from the baseline and 2020 target (Table 36-2).
 - » Thirty seven states had a comprehensive asthma surveillance system in 2015 (Map 36-2, RD-8).

Chronic Obstructive Pulmonary Disease (COPD)

Three of the four measurable objectives monitoring chronic obstructive pulmonary disease (COPD) demonstrated little or no detectable change, and one had worsened (Table 36-2).

- There was little or no detectable change in the age-adjusted proportion of **persons aged 45 and over with activity limitations due to COPD** (RD-9: 23.2% in 2008 and 23.1% in 2014) (Table 9-2).
 - » In 2014, there were statistically significant disparities by race and ethnicity, education, family income, and geographic location in the age-adjusted proportion of persons aged 45 and over with COPD and activity limitations (RD-9, Table 36-3). The disparity by sex was not statistically significant.
- Between 2007 and 2013, the age-adjusted **COPD death rate among adults aged 45 and over** (RD-10) increased from 113.9 to 116.5 per 100,000 population, moving away from the baseline and 2020 target (Table 36-2).
 - » Age-adjusted COPD death rates among adults aged 45 and over varied by state. Twelve states and the District of Columbia had achieved the national target in 2013 (Map 36-3, RD-10).
 - » In 2013, there were statistically significant disparities by sex, race and ethnicity, and geographic location in COPD deaths among adults aged 45 and over (RD-10, Table 36-3).
- There was little or no detectable change in the age-adjusted rate of **hospitalizations for COPD among**

adults aged 45 and over (RD-11: 56.0 per 10,000 population in 2007 and 58.7 in 2010) (Table 36-2).

- » In 2010, there was a statistically significant disparity by race and ethnicity in the age-adjusted rate of hospitalizations for COPD among adults aged 45 and over (RD-11, Table 36-3). The disparity by sex was not statistically significant.
- There was little or no detectable change in the age-adjusted rate of **emergency department visits for COPD among adults aged 45 and over** (RD-12: 81.7 per 10,000 population in 2007 and 103.1 in 2011) (Table 36-2).
 - » In 2011, the disparities by sex, race and ethnicity, and provider's geographic location in the age-adjusted rate of emergency department visits for COPD among adults aged 45 and over (RD-12) were not statistically significant (Table 36-3).

More Information

Readers interested in more detailed information about the objectives in this topic area are invited to visit the HealthyPeople.gov website, where extensive substantive and technical information is available:

- For the background and importance of the topic area, see: <https://www.healthypeople.gov/2020/topics-objectives/topic/respiratory-diseases>
- For data details for each objective, including definitions, numerators, denominators, calculations, and data limitations, see: <https://www.healthypeople.gov/2020/topics-objectives/topic/respiratory-diseases/objectives> *Select an objective, then click on the "Data Details" icon.*
- For objective data by population group (e.g., sex, race and ethnicity, or family income), including rates, percentages, or counts for multiple years, see: <https://www.healthypeople.gov/2020/topics-objectives/topic/respiratory-diseases/objectives> *Select an objective, then click on the "Data2020" icon.*

Data for the measurable objectives in this chapter were from the following data sources:

- Bridged-race Population Estimates: http://www.cdc.gov/nchs/nvss/bridged_race.htm
- National Asthma Control Program: <http://www.cdc.gov/asthma/NACP.htm>
- National Health Interview Survey: <http://www.cdc.gov/nchs/nhis.htm>

- National Hospital Ambulatory Medical Care Survey:
<http://www.cdc.gov/nchs/ahcd.htm>
- National Hospital Discharge Survey:
<http://www.cdc.gov/nchs/nhds.htm>
- National Vital Statistics System—Mortality:
<http://www.cdc.gov/nchs/deaths.htm>
- Population Estimates:
<http://www.census.gov/popest/estimates.html>

Footnotes

¹The **Technical Notes** provide more information on Healthy People 2020 statistical methods and issues.

²**Archived** objectives are no longer being monitored due to lack of data source, changes in science, or replacement with other objectives.

³**Measurable** objectives had a national baseline value.

⁴**Target met or exceeded**—One of the following, as specified in the Midcourse Progress Table:

- » At baseline the target was not met or exceeded and the midcourse value was equal to or exceeded the target. (The percentage of targeted change achieved was equal to or greater than 100%.)
- » The baseline and midcourse values were equal to or exceeded the target. (The percentage of targeted change achieved was not assessed.)

⁵**Improving**—One of the following, as specified in the Midcourse Progress Table:

- » Movement was toward the target, standard errors were available, and the percentage of targeted change achieved was statistically significant.
- » Movement was toward the target, standard errors were not available, and the objective had achieved 10% or more of the targeted change.

⁶**Little or no detectable change**—One of the following, as specified in the Midcourse Progress Table:

- » Movement was toward the target, standard errors were available, and the percentage of targeted change achieved was not statistically significant.
- » Movement was toward the target, standard errors were not available, and the objective had achieved less than 10% of the targeted change.
- » Movement was away from the baseline and target, standard errors were available, and the percentage change relative to the baseline was not statistically significant.
- » Movement was away from the baseline and target, standard errors were not available, and the objective had moved less than 10% relative to the baseline.
- » There was no change between the baseline and the midcourse data point.

⁷**Getting worse**—One of the following, as specified in the Midcourse Progress Table:

- » Movement was away from the baseline and target, standard errors were available, and the percentage change relative to the baseline was statistically significant.
- » Movement was away from the baseline and target, standard errors were not available, and the objective had moved 10% or more relative to the baseline.

⁸**Baseline only**—The objective only had one data point, so progress toward target attainment could not be assessed.

⁹**Informational**—A target was not set for this objective, so progress toward target attainment could not be assessed.

Suggested Citation

National Center for Health Statistics, Chapter 36: Respiratory Diseases. Healthy People 2020 Midcourse Review. Hyattsville, MD. 2016.

Table 36–1. Respiratory Diseases Objectives

LEGEND

	Data for this objective are available in this chapter's Midcourse Progress Table.		Disparities data for this objective are available, and this chapter includes a Midcourse Health Disparities Table.		A state or county level map for this objective is available at the end of the chapter.
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Not Applicable

Midcourse data availability is not applicable for developmental and archived objectives. **Developmental** objectives did not have a national baseline value. **Archived** objectives are no longer being monitored due to lack of data source, changes in science, or replacement with other objectives.

Objective Number	Objective Statement	Data Sources	Midcourse Data Availability
Asthma			
RD-1.1	Reduce asthma deaths among children and adults under age 35 years	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census	  
RD-1.2	Reduce asthma deaths among adults aged 35 to 64 years old	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census	  
RD-1.3	Reduce asthma deaths among adults aged 65 years and older	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census	  
RD-2.1	Reduce hospitalizations for asthma among children under age 5 years	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census	 
RD-2.2	Reduce hospitalizations for asthma among children and adults aged 5 to 64 years	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census	 
RD-2.3	Reduce hospitalizations for asthma among adults aged 65 years and older	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census	 
RD-3.1	Reduce emergency department (ED) visits for asthma among children under age 5 years	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census	 
RD-3.2	Reduce emergency department (ED) visits for asthma among children and adults aged 5 to 64 years	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census	 
RD-3.3	Reduce emergency department (ED) visits for asthma among adults aged 65 years and older	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census	 
RD-4	Reduce activity limitations among persons with current asthma	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-5.1	Reduce the proportion of children aged 5 to 17 years with asthma who miss school days	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-5.2	Reduce the proportion of adults aged 18 to 64 years with asthma who miss work days	National Health Interview Survey (NHIS), CDC/NCHS	 

Table 36–1. Respiratory Diseases Objectives—Continued

LEGEND

 Data for this objective are available in this chapter's Midcourse Progress Table.	 Disparities data for this objective are available, and this chapter includes a Midcourse Health Disparities Table.	 A state or county level map for this objective is available at the end of the chapter.
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Not Applicable Midcourse data availability is not applicable for developmental and archived objectives. **Developmental** objectives did not have a national baseline value. **Archived** objectives are no longer being monitored due to lack of data source, changes in science, or replacement with other objectives.

Objective Number	Objective Statement	Data Sources	Midcourse Data Availability
Asthma—Continued			
RD-6	Increase the proportion of persons with current asthma who receive formal patient education	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-7.1	Increase the proportion of persons with current asthma who receive written asthma management plans from their health care provider according to National Asthma Education and Prevention Program (NAEPP) guidelines	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-7.2	Increase the proportion of persons with current asthma with prescribed inhalers who receive instruction on their use according to National Asthma Education and Prevention Program (NAEPP) guidelines	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-7.3	Increase the proportion of persons with current asthma who receive education about appropriate response to an asthma episode, including recognizing early signs and symptoms or monitoring peak flow results, according to National Asthma Education and Prevention Program (NAEPP) guidelines	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-7.4	Increase the proportion of persons with current asthma who do not use more than one canister of short-acting inhaled beta agonist per month according to National Asthma Education and Prevention Program (NAEPP) guidelines	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-7.5	Increase the proportion of persons with current asthma who have been advised by a health professional to change things in their home, school, and work environments to reduce exposure to irritants or allergens to which they are sensitive according to National Asthma Education and Prevention Program (NAEPP) guidelines	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-7.6	Increase the proportion of persons with current asthma who have had at least one routine follow-up visit in the past 12 months according to National Asthma Education and Prevention Program (NAEPP) guidelines	National Health Interview Survey (NHIS), CDC/NCHS	 

Table 36–1. Respiratory Diseases Objectives—Continued

LEGEND

 Data for this objective are available in this chapter's Midcourse Progress Table.	 Disparities data for this objective are available, and this chapter includes a Midcourse Health Disparities Table.	 A state or county level map for this objective is available at the end of the chapter.
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Not Applicable

Midcourse data availability is not applicable for developmental and archived objectives. **Developmental** objectives did not have a national baseline value. **Archived** objectives are no longer being monitored due to lack of data source, changes in science, or replacement with other objectives.

Objective Number	Objective Statement	Data Sources	Midcourse Data Availability
Asthma—Continued			
RD-7.7	Increase the proportion of persons with current asthma whose doctor assessed their asthma control at the last visit according to National Asthma Education and Prevention Program (NAEPP) guidelines	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-7.8	Increase the proportion of adults with current asthma who have discussed with a doctor or other health professional whether their asthma was work related according to National Asthma Education and Prevention Program (NAEPP) guidelines	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-8	Increase the number of states, territories, and the District of Columbia with a comprehensive asthma surveillance system for tracking asthma cases, illness, and disability at the state level	National Asthma Control Program, CDC/NCEH	 
Chronic Obstructive Pulmonary Disease (COPD)			
RD-9	Reduce activity limitations among adults with chronic obstructive pulmonary disease (COPD)	National Health Interview Survey (NHIS), CDC/NCHS	 
RD-10	Reduce deaths from chronic obstructive pulmonary disease (COPD) among adults	National Vital Statistics System—Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census	  
RD-11	Reduce hospitalizations for chronic obstructive pulmonary disease (COPD)	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census	 
RD-12	Reduce emergency department (ED) visits for chronic obstructive pulmonary disease (COPD)	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census	 
RD-13	(Archived) Increase the proportion of adults with abnormal lung function whose underlying obstructive disease has been diagnosed	(Potential) National Health and Nutrition Examination Survey (NHANES), CDC/NCHS	Not Applicable

Table 36–2. Midcourse Progress for Measurable¹ Respiratory Diseases Objectives

LEGEND

	Target met or exceeded ^{2,3}		Improving ^{4,5}		Little or no detectable change ^{6–10}		Getting worse ^{11,12}		Baseline only ¹³		Informational ¹⁴
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Objective Description	Baseline Value (Year)	Midcourse Value (Year)	Target	Movement Toward Target ¹⁵	Movement Away From Baseline ¹⁶	Movement Statistically Significant ¹⁷
Asthma						
 ¹⁴ RD-1.1 Asthma deaths among children and adults (per million population, <35 years)	3.4 (2007)	3.7 (2013)				
 ¹¹ RD-1.2 Asthma deaths among adults (per million population, 35–64 years)	11.0 (2007)	12.0 (2013)	4.9		9.1%	Yes
 ⁴ RD-1.3 Asthma deaths among adults (per million population, 65+ years)	43.4 (2007)	35.7 (2013)	21.5	35.2%		Yes
 ⁶ RD-2.1 Hospitalizations for asthma among children (per 10,000 population, <5 years)	41.4 (2007)	33.1 (2010)	18.2	35.8%		No
 ⁶ RD-2.2 Hospitalizations for asthma among children and adults (age-adjusted, per 10,000 population, 5–64 years)	11.1 (2007)	10.5 (2010)	8.7	25.0%		No
 ⁸ RD-2.3 Hospitalizations for asthma among adults (age-adjusted, per 10,000 population, 65+ years)	25.3 (2007)	25.5 (2010)	20.1		0.8%	No
 ⁶ RD-3.1 Emergency department visits for asthma among children (per 10,000 population, <5 years)	132.8 (2005–2007)	125.8 (2009–2011)	95.7	18.9%		No
 ⁸ RD-3.2 Emergency department visits for asthma among children and adults (per 10,000 population, 5–64 years)	57.0 (2005–2007)	61.5 (2009–2011)	49.6		7.9%	No
 ⁸ RD-3.3 Emergency department visits for asthma among adults (per 10,000 population, 65+ years)	21.9 (2005–2007)	26.8 (2009–2011)	13.7		22.4%	No
 ⁴ RD-4 Activity limitations among persons with asthma (age-adjusted, percent)	12.7% (2008)	10.5% (2014)	10.3%	91.7%		Yes
 ⁸ RD-5.1 Children with asthma who miss school days (percent, 5–17 years)	58.7% (2008)	59.1% (2013)	48.8%		0.7%	No
 ¹¹ RD-5.2 Adults with asthma who miss work days (percent, 18–64 years)	33.2% (2008)	41.2% (2013)	26.7%		24.1%	Yes
 ⁶ RD-6 Persons with asthma receiving patient education (age-adjusted, percent)	12.1% (2008)	12.8% (2013)	14.5%	29.2%		No
 ² RD-7.1 Persons with asthma receiving written asthma plans from health care providers (age-adjusted, percent)	33.4% (2008)	40.5% (2013)	36.8%	208.8%		Yes

Table 36–2. Midcourse Progress for Measurable¹ Respiratory Diseases Objectives—Continued

LEGEND

	Target met or exceeded ^{2,3}		Improving ^{4,5}		Little or no detectable change ⁶⁻¹⁰		Getting worse ^{11,12}		Baseline only ¹³		Informational ¹⁴
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Objective Description	Baseline Value (Year)	Midcourse Value (Year)	Target	Movement Toward Target ¹⁵	Movement Away From Baseline ¹⁶	Movement Statistically Significant ¹⁷
Asthma—Continued						
 ¹⁴ RD-7.2 Persons with asthma receiving proper use instructions with prescribed inhalers (age-adjusted, percent)	95.9% (2008)					
 ² RD-7.3 Persons with asthma receiving education on early signs, symptoms, and responses to asthma episodes (age-adjusted, percent)	64.8% (2008)	68.7% (2013)	68.5%	105.4%		Yes
 ¹¹ RD-7.4 Persons with asthma who do not use more than one beta agonist inhalation canister per month (age-adjusted, percent)	87.9% (2008)	81.8% (2013)	90.2%		6.9%	Yes
 ¹¹ RD-7.5 Persons with asthma receiving advice from health professionals in reducing exposure to environmental risk factors (age-adjusted, percent)	50.8% (2008)	47.3% (2013)	54.6%		6.9%	Yes
 ¹³ RD-7.6 Persons with asthma who have had at least one routine medical follow-up visit in the past 12 months (age-adjusted, percent)	57.2% (2013)		60.4%			
 ¹³ RD-7.7 Persons with asthma whose doctor assessed their asthma control at the last visit (age-adjusted, percent)	52.2% (2013)		55.9%			
 ¹³ RD-7.8 Adults with current asthma who have discussed with a doctor or other health professional whether their asthma was work related (age-adjusted, percent, 18+ years)	14.4% (2010)		17.9%			
 ¹² RD-8 States, D.C., and territories with comprehensive asthma surveillance systems (number)	43 (2009)	38 (2015)	47		11.6%	
Chronic Obstructive Pulmonary Disease (COPD)						
 ⁶ RD-9 Activity limitations among persons with COPD (age-adjusted, percent, 45+ years)	23.2% (2008)	23.1% (2014)	18.7%	2.2%		No
 ¹¹ RD-10 COPD deaths (age-adjusted, per 100,000 population, 45+ years)	113.9 (2007)	116.5 (2013)	102.6		2.3%	Yes
 ⁸ RD-11 Hospitalizations for COPD (age-adjusted, per 10,000 population, 45+ years)	56.0 (2007)	58.7 (2010)	50.1		4.8%	No
 ⁸ RD-12 Emergency department visits for COPD (age-adjusted, per 10,000 population, 45+ years)	81.7 (2007)	103.1 (2011)	56.8		26.2%	No

Table 36–2. Midcourse Progress for Measurable¹ Respiratory Diseases Objectives—Continued

NOTES

See [HealthyPeople.gov](https://www.healthypeople.gov) for all Healthy People 2020 data. The [Technical Notes](#) provide more information on the measures of progress.

FOOTNOTES

¹**Measurable** objectives had a national baseline value.

Target met or exceeded:

²At baseline the target was not met or exceeded and the midcourse value was equal to or exceeded the target. (The percentage of targeted change achieved was equal to or greater than 100%.)

³The baseline and midcourse values were equal to or exceeded the target. (The percentage of targeted change achieved was not assessed.)

Improving:

⁴Movement was toward the target, standard errors were available, and the percentage of targeted change achieved was statistically significant.

⁵Movement was toward the target, standard errors were not available, and the objective had achieved 10% or more of the targeted change.

Little or no detectable change:

⁶Movement was toward the target, standard errors were available, and the percentage of targeted change achieved was not statistically significant.

⁷Movement was toward the target, standard errors were not available, and the objective had achieved less than 10% of the targeted change.

⁸Movement was away from the baseline and target, standard errors were available, and the percentage change relative to the baseline was not statistically significant.

⁹Movement was away from the baseline and target, standard errors were not available, and the objective had moved less than 10% relative to the baseline.

¹⁰There was no change between the baseline and the midcourse data point.

Getting worse:

¹¹Movement was away from the baseline and target, standard errors were available, and the percentage change relative to the baseline was statistically significant.

¹²Movement was away from the baseline and target, standard errors were not available, and the objective had moved 10% or more relative to the baseline.

¹³**Baseline only:** The objective only had one data point, so progress toward target attainment could not be assessed.

¹⁴**Informational:** A target was not set for this objective, so progress toward target attainment could not be assessed.

¹⁵For objectives that **moved toward** their targets, movement toward the target was measured as the percentage of targeted change achieved (unless the target was already met or exceeded at baseline):

$$\text{Percentage of targeted change achieved} = \frac{\text{Midcourse value} - \text{Baseline value}}{\text{HP2020 target} - \text{Baseline value}} \times 100$$

¹⁶For objectives that **moved away** from their baselines and targets, movement away from the baseline was measured as the magnitude of the percentage change from baseline:

$$\text{Magnitude of percentage change from baseline} = \frac{|\text{Midcourse value} - \text{Baseline value}|}{\text{Baseline value}} \times 100$$

¹⁷Statistical significance was tested when the objective had a target and at least two data points, standard errors of the data were available, and a normal distribution could be assumed. Statistical significance of the percentage of targeted change achieved or the magnitude of the percentage change from baseline was assessed at the 0.05 level using a normal one-sided test.

DATA SOURCES

RD-1.1	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census
RD-1.2	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census
RD-1.3	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census
RD-2.1	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census
RD-2.2	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census
RD-2.3	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census
RD-3.1	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census
RD-3.2	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census
RD-3.3	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census
RD-4	National Health Interview Survey (NHIS), CDC/NCHS
RD-5.1	National Health Interview Survey (NHIS), CDC/NCHS
RD-5.2	National Health Interview Survey (NHIS), CDC/NCHS
RD-6	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.1	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.2	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.3	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.4	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.5	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.6	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.7	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.8	National Health Interview Survey (NHIS), CDC/NCHS
RD-8	National Asthma Control Program, CDC/NCEH
RD-9	National Health Interview Survey (NHIS), CDC/NCHS
RD-10	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census
RD-11	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census
RD-12	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census

Table 36–3. Midcourse Health Disparities¹ for Population-based Respiratory Diseases Objectives—Continued

Most favorable (least adverse) and least favorable (most adverse) group rates and summary disparity ratios^{2,3} for selected characteristics at the midcourse data point

Population-based Objectives		Characteristics and Groups																						
		Sex		Race and Ethnicity						Education ⁴					Family Income ⁵			Disability		Location				
Male	Female	American Indian or Alaska Native	Asian	Native Hawaiian or other Pacific Islander	Two or more races	Hispanic or Latino	Black, not Hispanic	White, not Hispanic	Less than high school	High school graduate	At least some college	Associate's degree	4-year college degree	Advanced degree	Poor	Near-poor	Middle	Near-high	High	Persons with disabilities	Persons without disabilities	Metropolitan	Nonmetropolitan	
Summary Disparity Ratio ²		Summary Disparity Ratio ³						Summary Disparity Ratio ³					Summary Disparity Ratio ³			Summary Disparity Ratio ²		Summary Disparity Ratio ²						
Asthma—Continued																								
RD-3.3 Emergency department visits for asthma among adults (per 10,000 population, 65+ years) (2009-2011)																								
		1.394	6.510*						2.048*					2.310*			1.827*							
RD-4 Activity limitations among persons with asthma (age-adjusted, percent) (2014)																								
		1.040	1.191						2.048*					2.310*			1.410*							
RD-5.1 Children with asthma who miss school days (percent, 5–17 years) (2013)																								
		1.064	1.444*						1.467					1.079										
RD-5.2 Adults with asthma who miss work days (percent, 18–64 years) (2013)																								
		1.095	1.318*						1.551*					1.863*			1.625*		1.092					
RD-6 Persons with asthma receiving patient education (age-adjusted, percent) (2013)																								
		1.084	1.152						1.477					1.161			1.087		1.360*					
RD-7.1 Persons with asthma receiving written asthma plans from health care providers (age-adjusted, percent) (2013)																								
		1.006	1.147						1.253					1.165			1.279*		1.220*					
RD-7.2 Persons with asthma receiving proper use instructions with prescribed inhalers (age-adjusted, percent) (2008)																								
		1.000	1.013						1.014					1.021					1.032*					
RD-7.3 Persons with asthma receiving education on early signs, symptoms, and responses to asthma episodes (age-adjusted, percent) (2013)																								
		1.030	1.067						1.249*					1.145*			1.168*		1.092*					

Table 36–3. Midcourse Health Disparities¹ for Population-based Respiratory Diseases Objectives—Continued

Most favorable (least adverse) and least favorable (most adverse) group rates and summary disparity ratios^{2,3} for selected characteristics at the midcourse data point

LEGEND		Characteristics and Groups																													
At the midcourse data point		Group with the most favorable (least adverse) rate			Group with the least favorable (most adverse) rate			Data are available, but this group did not have the highest or lowest rate.			Data are not available for this group because the data were statistically unreliable, not collected, or not analyzed.																				
Population-based Objectives		Sex		Race and Ethnicity						Education ⁴					Family Income ⁵					Disability		Location									
		Male	Female	Summary Disparity Ratio ²	American Indian or Alaska Native	Asian	Native Hawaiian or other Pacific Islander	Two or more races	Hispanic or Latino	Black, not Hispanic	White, not Hispanic	Summary Disparity Ratio ³	Less than high school	High school graduate	At least some college	Associate's degree	4-year college degree	Advanced degree	Summary Disparity Ratio ³	Poor	Near-poor	Middle	Near-high	High	Summary Disparity Ratio ³	Persons with disabilities	Persons without disabilities	Summary Disparity Ratio ²	Metropolitan	Nonmetropolitan	Summary Disparity Ratio ²
Asthma—Continued																															
RD-7.4 Persons with asthma who do not use more than one beta agonist inhalation canister per month (age-adjusted, percent) (2013)				1.027							1.053							1.120*						1.114*			1.181*			1.008	
RD-7.5 Persons with asthma receiving advice from health professionals in reducing exposure to environmental risk factors (age-adjusted, percent) (2013)				1.065								1.063							1.207*						1.086			1.009			1.063
RD-7.6 Persons with asthma who have had at least one routine medical follow-up visit in the past 12 months (age-adjusted, percent) (2013)				1.016								1.109							1.073						1.090			1.165*			1.009
RD-7.7 Persons with asthma whose doctor assessed their asthma control at the last visit (age-adjusted, percent) (2013)				1.011								1.117							1.093						1.217*			1.085			1.276*
RD-7.8 Adults with current asthma who have discussed with a doctor or other health professional whether their asthma was work related (age-adjusted, percent, 18+ years) (2010)				1.189								1.275							1.175						1.115			1.079			1.397
Chronic Obstructive Pulmonary Disease (COPD)																															
RD-9 Activity limitations among persons with COPD (age-adjusted, percent, 45+ years) (2014)				1.116								1.955*							1.751*						1.941*						1.273*
RD-10 COPD deaths (age-adjusted, per 100,000 population, 45+ years) (2013)				1.254*								2.479*																			1.346*

Table 36–3. Midcourse Health Disparities¹ for Population-based Respiratory Diseases Objectives—Continued

Most favorable (least adverse) and least favorable (most adverse) group rates and summary disparity ratios^{2,3} for selected characteristics at the midcourse data point

Population-based Objectives		Characteristics and Groups																												
		Sex		Race and Ethnicity						Education ⁴				Family Income ⁵			Disability		Location											
Male	Female	Summary Disparity Ratio ²	American Indian or Alaska Native	Asian	Native Hawaiian or other Pacific Islander	Two or more races	Hispanic or Latino	Black, not Hispanic	White, not Hispanic	Summary Disparity Ratio ³	Less than high school	High school graduate	At least some college	Associate's degree	4-year college degree	Advanced degree	Summary Disparity Ratio ³	Poor	Near-poor	Middle	Near-high	High	Summary Disparity Ratio ³	Persons with disabilities	Persons without disabilities	Summary Disparity Ratio ²	Metropolitan	Nonmetropolitan	Summary Disparity Ratio ²	
Chronic Obstructive Pulmonary Disease (COPD)—Continued																														
RD-11 Hospitalizations for COPD (age-adjusted, per 10,000 population, 45+ years) (2010)																														
		1.041								1.352*																				
RD-12 Emergency department visits for COPD (age-adjusted, per 10,000 population, 45+ years) (2011)																														
		1.282								1.830																				1.236

Table 36–3. Midcourse Health Disparities¹ for Population-based Respiratory Diseases Objectives—Continued

NOTES

See [HealthyPeople.gov](https://www.healthypeople.gov) for all Healthy People 2020 data. The **Technical Notes** provide more information on the measures of disparities.

FOOTNOTES

¹**Health disparities** were assessed among population groups within specified demographic characteristics (sex, race and ethnicity, educational attainment, etc.). This assessment did not include objectives that were not population-based, such as those based on states, worksites, or those monitoring the number of events.

²When there were only two groups (e.g., male and female), the **summary disparity ratio** was the ratio of the higher to the lower rate.

³When there were three or more groups (e.g., white non-Hispanic, black non-Hispanic, Hispanic) and the most favorable rate (R_b) was the highest rate, the **summary disparity ratio** was calculated as R_b/R_a , where R_a = the average of the rates for all other groups. When there were three or more groups and the most favorable rate was the lowest rate, the summary disparity ratio was calculated as R_a/R_b .

⁴Unless otherwise footnoted, data do not include persons under age 25 years.

⁵Unless otherwise footnoted, the poor, near-poor, middle, near-high, and high income groups are for persons whose family incomes were less than 100%, 100%–199%, 200%–399%, 400%–599%, and at or above 600% of the poverty threshold, respectively.

*The summary disparity ratio was significantly greater than 1.000. Statistical significance was assessed at the 0.05 level using a normal one-sided test on the natural logarithm scale.

^aData are for Asian or Pacific Islander persons.

^bData include persons of Hispanic origin.

^cLocation of the health care provider.

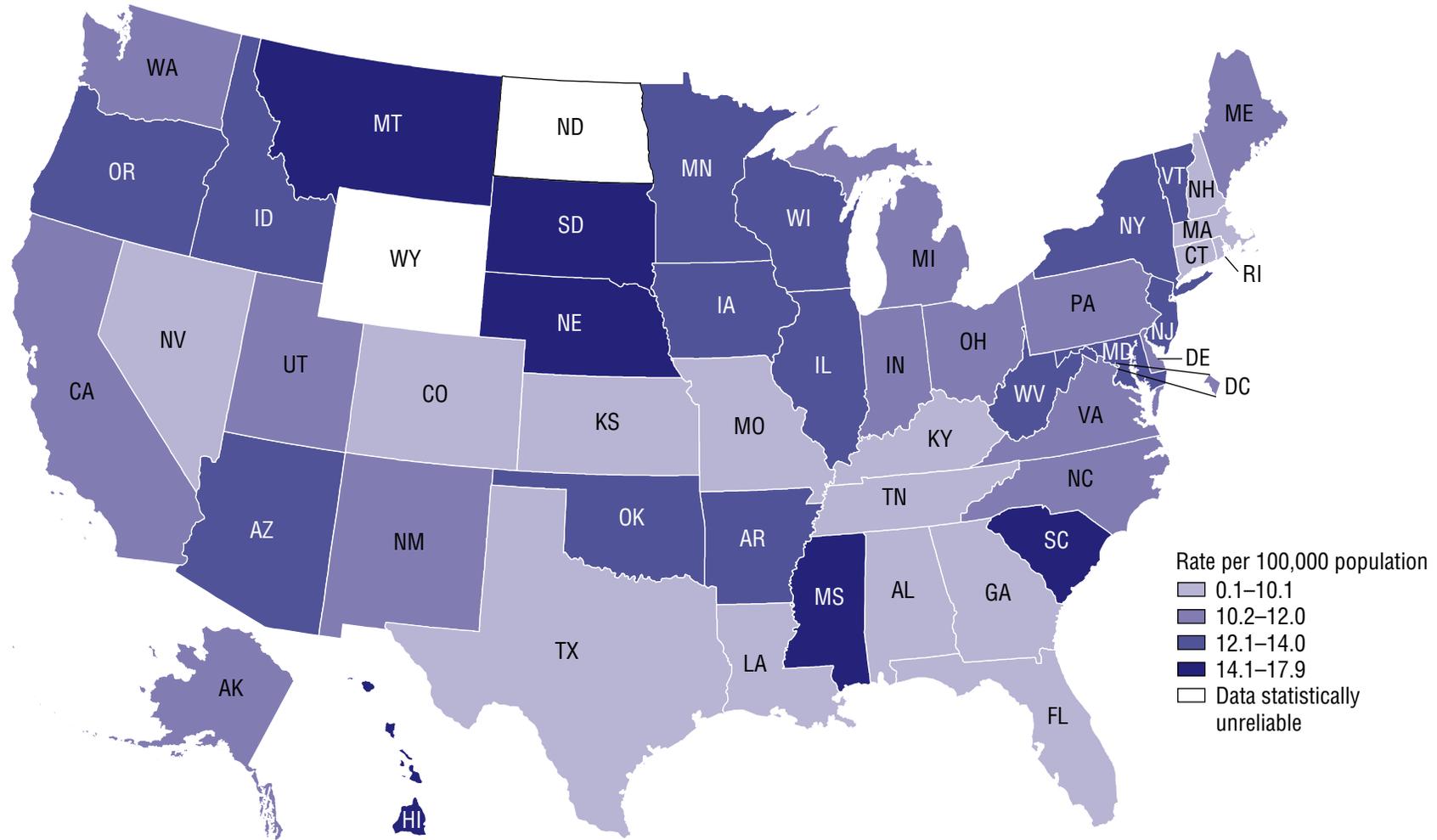
^dData do not include persons under age 18 years.

DATA SOURCES

RD-1.1	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census
RD-1.2	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census
RD-1.3	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census
RD-2.1	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census
RD-2.2	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census
RD-2.3	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census
RD-3.1	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census
RD-3.2	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census
RD-3.3	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census
RD-4	National Health Interview Survey (NHIS), CDC/NCHS
RD-5.1	National Health Interview Survey (NHIS), CDC/NCHS
RD-5.2	National Health Interview Survey (NHIS), CDC/NCHS
RD-6	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.1	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.2	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.3	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.4	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.5	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.6	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.7	National Health Interview Survey (NHIS), CDC/NCHS
RD-7.8	National Health Interview Survey (NHIS), CDC/NCHS
RD-9	National Health Interview Survey (NHIS), CDC/NCHS
RD-10	National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census
RD-11	National Hospital Discharge Survey (NHDS), CDC/NCHS; Population Estimates, Census
RD-12	National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS; Population Estimates, Census

Map 36–1. Asthma Deaths, by State: 2011–2013

Healthy People 2020 Objectives RD-1.1, RD-1.2, RD-1.3 • Related State Data



NOTES: Data are for ICD–10 codes J45–J46 reported as the underlying cause of death. Data are displayed by a Jenks classification for U.S. states which creates categories that minimize within-group variation and maximize between-group variation. The **Technical Notes** provide more information on the data and methods.

DATA SOURCES: National Vital Statistics System–Mortality (NVSS–M), CDC/NCHS; Bridged-race Population Estimates, CDC/NCHS and Census

