Healthy People 2020: Who's Leading the Leading Health Indicators?

Healthy People 2020

Office of Disease Prevention and Health Promotion

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"Who's Leading the Leading Health Indicators?"

- 12th installment of the monthly series, "Who's Leading the Leading Health Indicators?"
- Highlight organizations using evidence-based approaches to address one of the Healthy People 2020 Leading Health Indicator (LHI) topics.

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What are the Leading Health Indicators (LHIs)?

Leading Health Indicators are:

- Critical health issues that, if addressed appropriately, will dramatically reduce the leading causes of preventable deaths and illnesses.

- Linked to specific Healthy People objectives.

- Intended to motivate action to improve the health of the entire population.

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Webinar Participants

- Featured Speakers:

  Dr. Don Wright, MD, MPH

  Deputy Assistant Secretary for Disease Prevention and Health Promotion

  Mr. Bill Wiley

  Director, Maricopa County Air Quality Department

- Panelists:

  Dr. Steven R. Kleeberger, PhD

  Director, Environmental Genetics Group, National Institutes of Health (NIH)

  Mr. David Mintz

  Statistician, Office of Air Quality Planning and Standards, Environmental Protection Agency (EPA)

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Don Wright, MD, MPH
Deputy Assistant Secretary for Disease Prevention and Health Promotion

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Leading Health Indicators: Environmental Quality

- **The Environmental Quality Leading Health Indicators are:**
  - Air Quality Index (AQI) exceeding 100 (Exposure to Unhealthy Outdoor Air)
  - Children aged 3 to 11 years exposed to secondhand smoke

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Impact & Context: Environmental Quality

- Outdoor
  - natural and human-generated
- Indoor
  - secondhand smoke and other sources
- Health effects
  - short-term and long-term
- Decreasing air pollution and eliminating exposure to second-hand smoke are important steps in creating healthy environments and improving the health of all Americans.

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Asthma:
Second-hand Smoke & Air Pollution

- In **2009**, there were**:**
  - **479,300** asthma-related **hospitalizations**
  - **1.9 million** asthma related **emergency department visits**
  - **8.9 million** asthma-related **doctor visits**

- Triggers include:
  - Secondhand smoke
  - Outdoor Air Pollution

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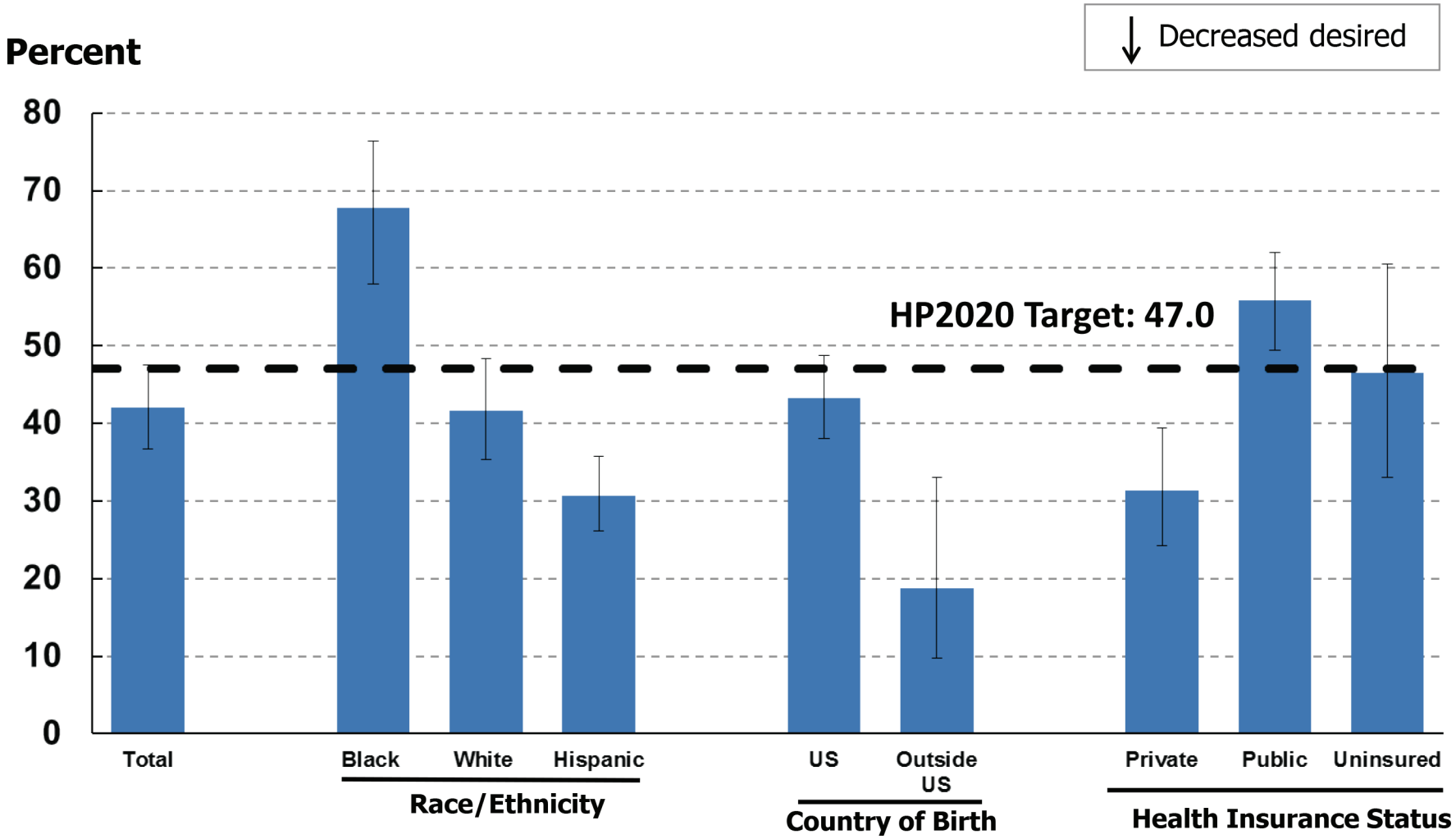
Exposure of non-smokers to secondhand smoke among children aged 3-11, 2009-2010



Notes: I= 95% confidence interval. Children aged 3-11 years are considered to be non-smokers if they had a serum cotinine level of less than or equal to 10 ng/ml. Children are considered to be exposed to second hand smoke if they had a cotinine level greater than or equal to 0.05ng/ml and less than or equal to 10 ng/ml. Black and White exclude persons of Hispanic origin. Persons of Hispanic origin may be any race. Respondents were asked to select one or more races. Single race categories are for persons who reported only one racial group.

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

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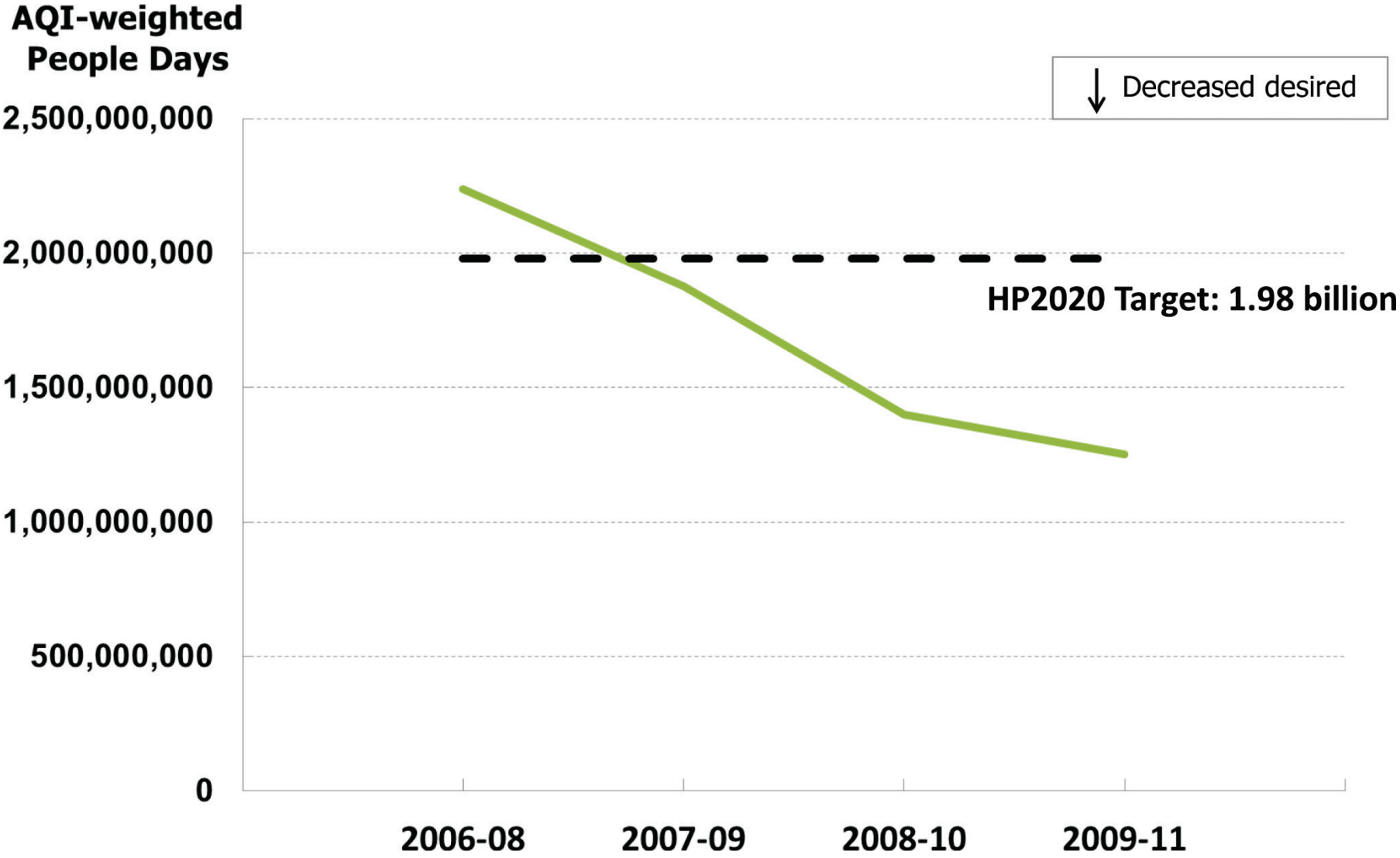
Exposure to Unhealthy Outdoor Air



Notes: The AQI weight is the proportion of the AQI greater than 100. The population of an area is multiplied by the AQI weight to produce weighted people-days. All areas with an AQI greater than 100 are summed by AQI-weighted people-days for each year and averaged for the 3-year period.
Source: Air Quality System (AQS), EPA.

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Maricopa County Air Quality Department

Rapid Response overview

Bill Wiley
December, 2012

WALK MORE USE CFLS MORE CARPOOL MORE BIKE MORE RAKE MORE TELECOMMUTE MORE DRIVE HYBRIDS MORE CONSOLIDATE ERRANDS MORE RIDE PUBLIC TRANSPORTATION MORE USE ENERGY EFFICIENT APPLIANCES MORE CARRY REUSABLE TOTE BAGS MORE CONSIDER SOLAR MORE RUN COLD WATER CYCLES MORE USE REUSABLE CONTAINERS MORE CONSERVE ELECTRICITY MORE REDUCE WOODBURNING MORE RECYCLE MORE USE ELECTRIC LAWN AND GARDEN EQUIPMENT MORE REFUEL AFTER DARK MORE RIDE THE BUS MORE RIDE THE LIGHT RAIL MORE WALK MORE USE CFLS MORE CARPOOL MORE BIKE MORE RAKE MORE TELECOMMUTE MORE DRIVE HYBRIDS MORE CONSOLIDATE ERRANDS MORE RIDE PUBLIC TRANSPORTATION MORE USE ENERGY EFFICIENT APPLIANCES MORE CARRY REUSABLE TOTE BAGS MORE CONSIDER SOLAR MORE RUN COLD WATER CYCLES MORE USE REUSABLE CONTAINERS MORE CONSERVE ELECTRICITY MORE REDUCE WOODBURNING MORE RECYCLE MORE USE ELECTRIC LAWN AND GARDEN EQUIPMENT MORE REFUEL AFTER DARK MORE RIDE THE BUS MORE RIDE THE LIGHT RAIL MORE WALK MORE USE CFLS MORE CARPOOL MORE BIKE MORE RAKE MORE TELECOMMUTE MORE DRIVE HYBRIDS MORE CONSOLIDATE ERRANDS MORE RIDE PUBLIC TRANSPORTATION MORE USE ENERGY EFFICIENT APPLIANCES MORE CARRY REUSABLE TOTE BAGS MORE WALK MORE USE CFLS MORE CARPOOL MORE

CLEAN AIR MAKE MORE

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Air Quality Department

Background

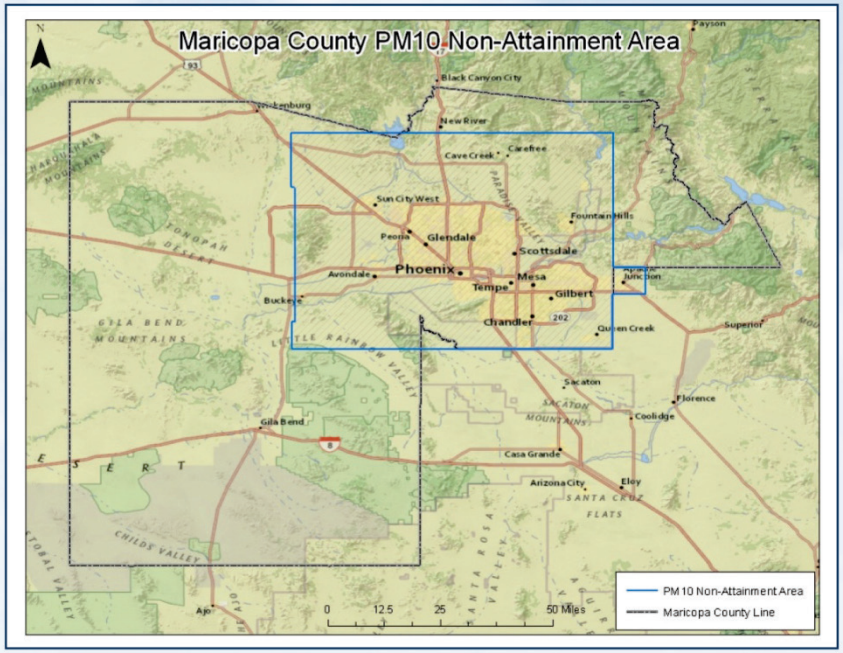
- Maricopa County – 3.8M, 2010 census
- Maricopa County is in “serious” nonattainment for PM10 (dust) since 1996
- People exposed to “natural” and human-caused dust
- County has adopted 130 control measures on sources of particulates
- Rapid Response designed to “prevent” human-caused exceedances
- Natural events such as “haboobs” may be “excused” by EPA

July 5, 2011

SOURCE: National Geographic (2012)

Maricopa County Air Quality Department role

- Monitor network (17 monitors)
- Trip Reduction Program (697,000 employees)
- Permits (6,000)
- Inspections (13,000/year)
- Enforcement (678 cases, $1,704,922)



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PM-10 Rapid Response Program

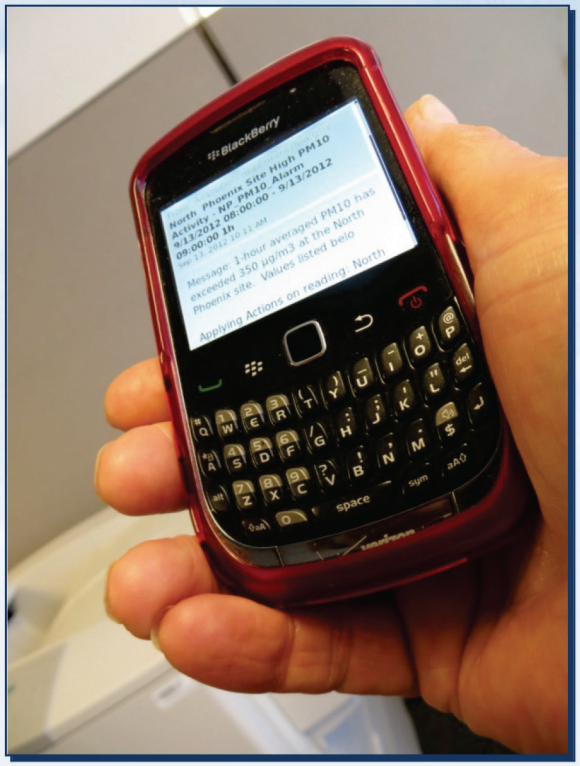
- Developed to augment State Implementation Plan for particulates (5% Plan)
- Intent is to reduce exposure from particles due to human-caused activity

- Goals:
  - Need to prevent human caused pollution/exposure
  - Desire for early warning
  - Engage all stakeholders

- Keys:
  - Real-time air quality data
  - Quick analysis
  - Dispatch system
  - Respond quickly to human caused events
  - Stop or mitigate activities
  - Prevent future exceedances

Structure

- Real-time monitoring (from 1-hour to real time)
- Rapid data assessment (by air quality professional)
- Alerts to those signed up near monitors (on website)
- Follow up by inspector as soon as possible
- Air Quality network of 17 monitors
- Updated from hourly land lines to real time wireless data ports – live on web
- Air quality professional evaluates data 24/7
- Sends alerts to those near offending monitors when human activities suspected



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Response

- Once alerted, stakeholders such as businesses, residents and partnering agencies help maintain compliance by stabilizing loose dirt or even halting dust-generating operations

Image courtesy of momar.com

*Other entities involved**

- ADEQ
- MAG (planning agency)
- Cities/towns
- Health
- Schools
- Media

- Farm Bureau
- Rock products
- Homebuilders
- Contractors
- Off Road Vehicles association

*Selected stakeholders

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Air Quality Department

Outcomes

- Sent out 18 alarms:
  - 12 exceedances avoided
  - 4 were “natural” events
  - 2 exceedances not prevented

Key findings

- Partnerships crucial – get everyone involved
- Lasting relationships
- System improvement crucial (IT)
- Limit alerts to area affected
- Natural events

Recognition

- NACo award (July 15, 2012)
- 2012 EPA Environmental Excellence Award (September 19, 2012)
- Associated General Contractors recognition

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Roundtable Discussion

Please take a moment to fill out our brief survey.

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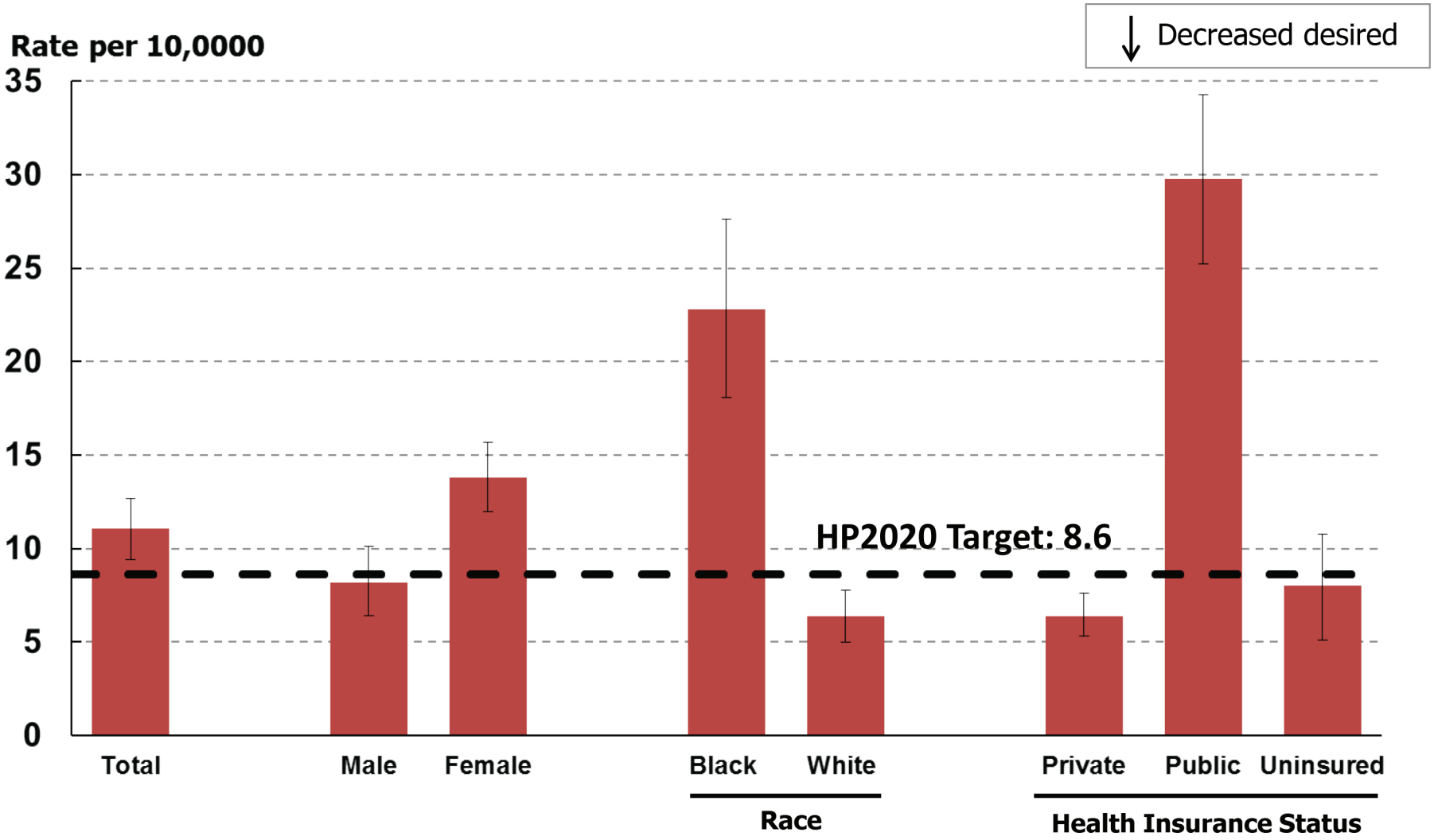
Hospitalizations for asthma among children and adults aged 5–64, 2007



Notes: I= 95% confidence interval. Data includes hospitalizations with a principal diagnosis of asthma (ICD-9-CM code 493) among persons aged 5 to 64 years. Data are age adjusted to the 2000 standard population. Respondents were asked to select either a single race category or an aggregate multiple race category. Single race categories are for persons who reported a single race category.
Source: National Hospital Discharge Survey (NHDS), CDC/NCHS.

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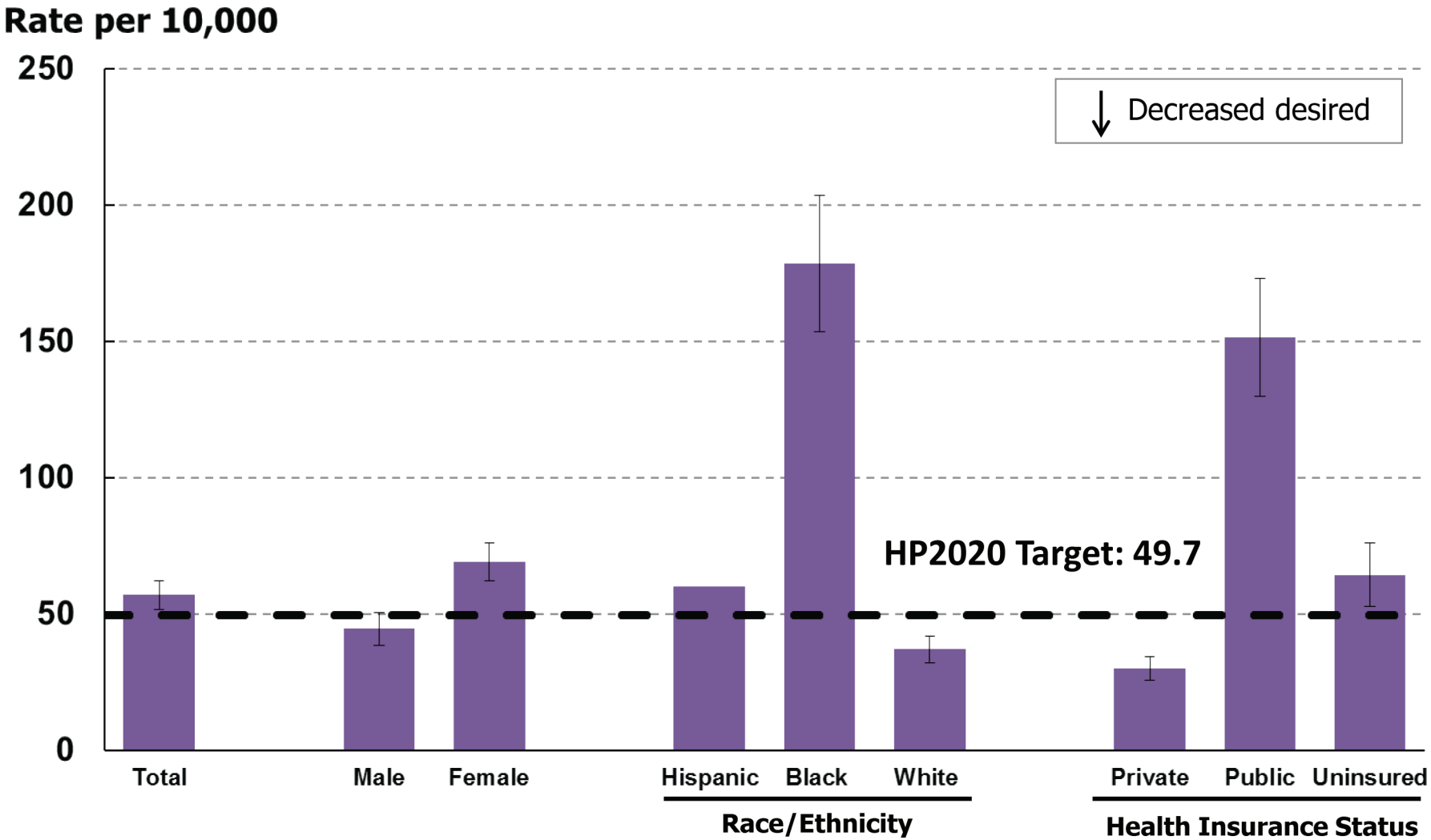
Hospital emergency department visits for asthma among children and adults aged 5–64, 2005–07



Notes: I= 95% confidence interval. Data includes emergency department visits with a principal diagnosis of asthma (ICD-9-CM code 493) among persons aged 5 to 64 years. Black and White exclude persons of Hispanic origin. Persons of Hispanic origin may be any race. Respondents were asked to select either a single race category or an aggregate multiple race category. Single race categories are for persons who reported a single race category.
Source: National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC/NCHS.

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