

# Healthy People 2020 Spotlight on Health: Type 2 Diabetes Prevention

U.S. Department of Health and Human Services



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## Assistant Secretary for Health

### U.S. Department of Health and Human Services





# Today's Presentation

- I. Overview of HP2020 & its Diabetes Objectives
- II. Scope of Diabetes in U.S. and Key Findings of Diabetes Prevention
- III. Roles of Clinicians & Communities in Addressing Diabetes
- IV. Evidence-Based Community Example
- V. Questions & Answers





# What Is Healthy People?

- A **national agenda** that communicates a vision for improving health and achieving health equity
- Creates a comprehensive **strategic framework** uniting health promotion and disease prevention issues under a single umbrella
- A set of science-based, **measurable objectives** with **targets** to be achieved by the year 2020
- Requires tracking of **data-driven outcomes** to monitor progress and to motivate, guide, and focus action



# Overarching Goals

- Attain high quality, longer lives free of preventable disease, disability, injury, and premature death
- Achieve health equity, eliminate disparities, and improve the health of all groups
- Create social and physical environments that promote good health for all
- Promote quality of life, healthy development, and healthy behaviors across all life stages



# How People Use Healthy People

- **Data tool** for measuring program performance
- Framework for **program planning and development**
- **Goal setting and agenda building**
- **Teaching** public health courses
- Benchmarks to **compare** State and local data
- Way to develop nontraditional **partnerships**



# Topic Areas

- Access to Health Services
- Adolescent Health
- Arthritis, Osteoporosis, and Chronic Back Conditions
- Blood Disorders and Blood Safety
- Cancer
- Chronic Kidney Disease
- Dementias, including Alzheimer's Disease
- **Diabetes**
- Disability and Health
- Educational and Community-Based Programs
- Early and Middle Childhood
- Environmental Health
- Family Planning
- Food Safety
- Genomics
- Global Health
- Health-related Quality of Life and Well-being
- Healthcare Associated Infections
- Lesbian, Gay, Bisexual, Transgender Health
- Nutrition and Weight Status
- Occupational Safety and Health
- Older Adults
- Oral Health
- Physical Activity
- Public Health Infrastructure
- Preparedness
- HIV
- Immunization and Infectious Diseases
- Injury and Violence Prevention
- Maternal, Infant, and Child Health
- Medical Product Safety
- Mental Health and Mental Disorders
- Health Communication and Health Information Technology
- Hearing and Other Sensory or Communication Disorders
- Heart Disease and Stroke
- Respiratory Diseases
- Sexually Transmitted Diseases
- Sleep Health
- Social Determinants of Health
- Substance Abuse
- Tobacco Use
- Vision

Home

About Healthy People

2020 Topics &amp; Objectives

Data

Learn

Implement

Get Involved

Leading Health Indicators

## Healthy People 2020 Spotlight on Health Webinar

Join us on November 13 for a Spotlight on Health Webinar focusing on Diabetes.

[Register today!](#)

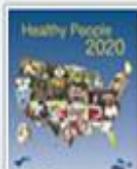

## Get to know the Leading Health Indicators

### Suicide Rate

In 2010, there were 12.1 suicides per 100,000 (age adjusted).



Get the Latest Healthy People News & Events



Healthy People 2020 Brochure: Updated with LHIs! [PDF - 948 KB]

## HHS Prevention Strategies

Healthy People supports prevention efforts across the U.S.

Department of Health and Human Services (HHS) to create a healthier Nation.



## Spotlight

### Healthy People 2020 Public Comment

Participate in the Healthy People 2020 process and comment on proposed new objectives. Open November 13 to December 4, 2013.



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## Diabetes

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[Interventions & Resources](#)
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[National Data](#)

Expand All Objectives



**D-1** Reduce the annual number of new cases of diagnosed diabetes in the population

Close Details ▼

Baseline:	8.0 new cases of diabetes per 1,000 population aged 18 to 84 years occurred in the past 12 months, as reported in 2006–08 (age adjusted to the year 2000 standard population)
Target:	7.2 new cases per 1,000 population aged 18 to 84 years
Target-Setting Method:	10 percent improvement
Data Source:	National Health Interview Survey (NHIS), CDC/NCHS

More Information:



[Data for this objective](#)



The HP2010 objective with the same definition was 05-02. [View on DATA2010](#)



[Search PubMed for Literature Relating to this Objective](#)

Close Details ▲

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## Diabetes



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National Snapshot

National Data

**D-16** Increase prevention behaviors in persons at high risk for diabetes with prediabetes

D-16.1 Increase the proportion of persons at high risk for diabetes with prediabetes who report increasing their levels of physical activity

View Details ▼

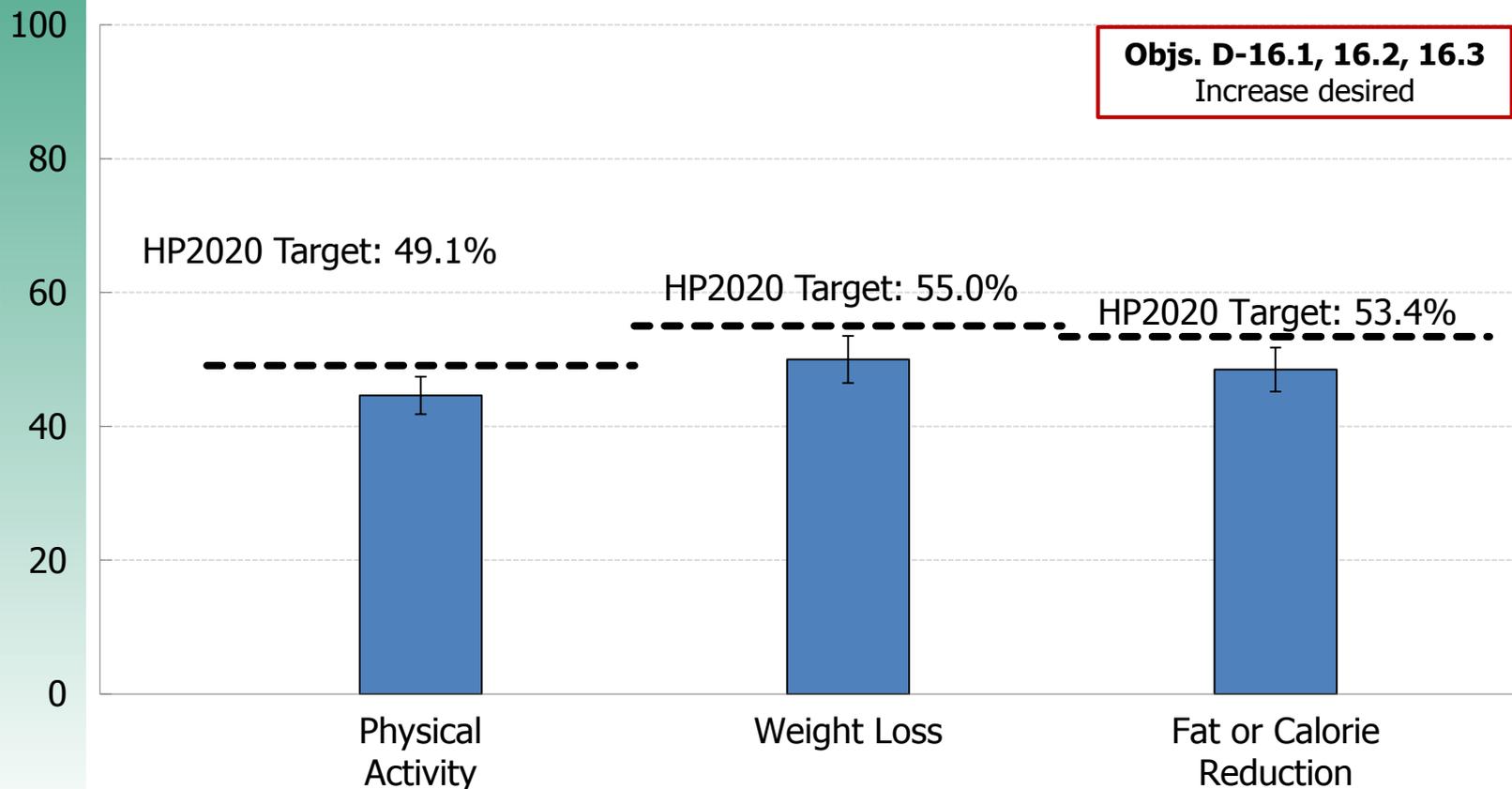
D-16.2 Increase the proportion of persons at high risk for diabetes with prediabetes who report trying to lose weight

View Details ▼

D-16.3 Increase the proportion of persons at high risk for diabetes with prediabetes who report reducing the amount of fat or calories in their diet

View Details ▼

# Prevention Behaviors—Persons at High Risk for Diabetes, 2005-2008



NOTES: I = 95% confidence interval. Data are for adults aged 18 years and over and are age adjusted to the 2000 standard population. Persons are considered at high risk for diabetes if they: did not self report diabetes and had fasting glucose  $\geq 100$  to  $\leq 126$  mg/dl or an HbA1c value  $> 5.7\%$  to  $< 6.5\%$ .

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







**Hospitals**  
e.g., NHDS, NIS

**Household and Exam Surveys**  
e.g., NHANES, NHIS



**CDC**

**National Diabetes Surveillance System**

**Vital Statistics**  
e.g., NVSS



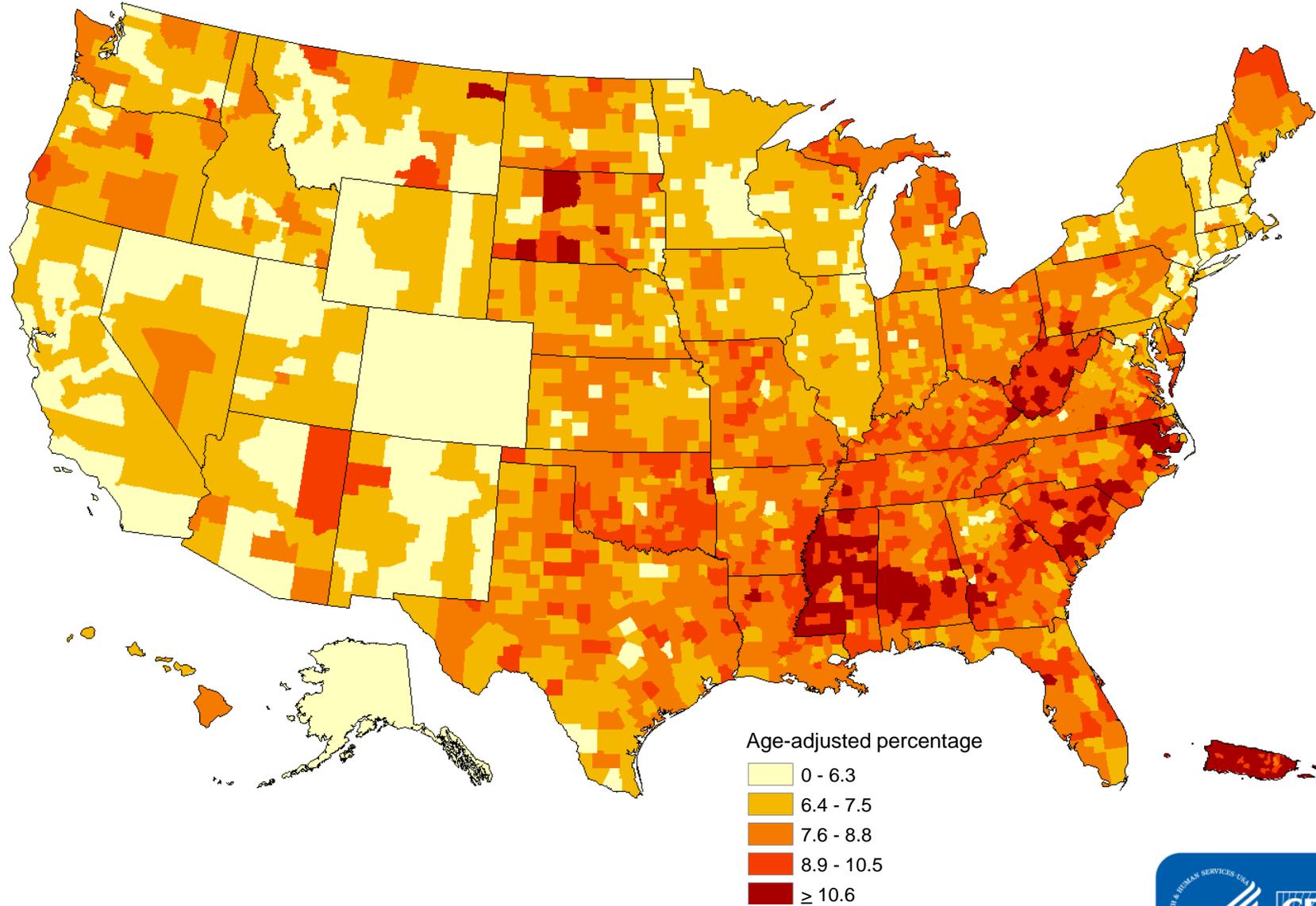
**Telephone and School Surveys**  
e.g., BRFSS



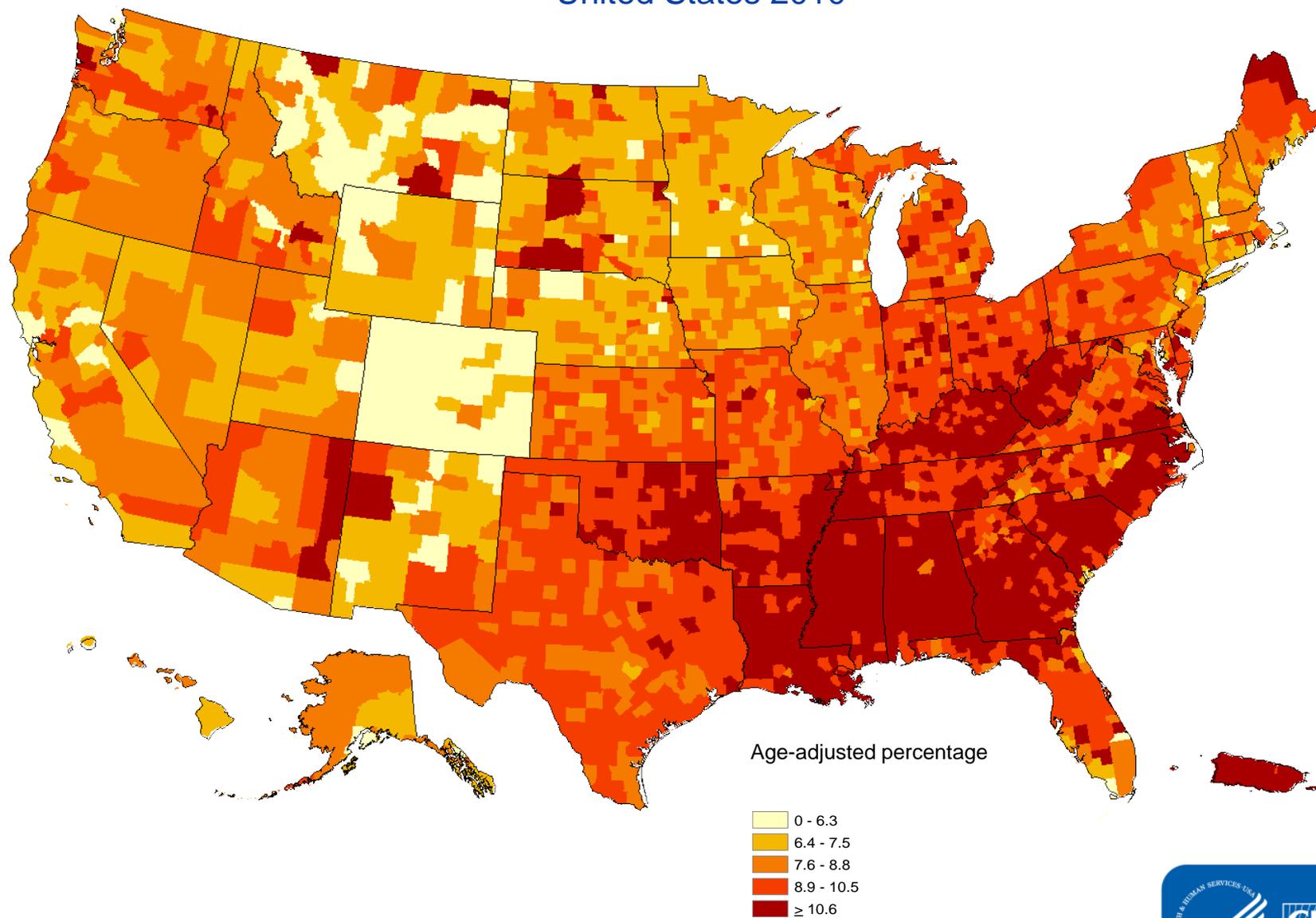
**Registries**  
e.g. SEARCH; USRDS



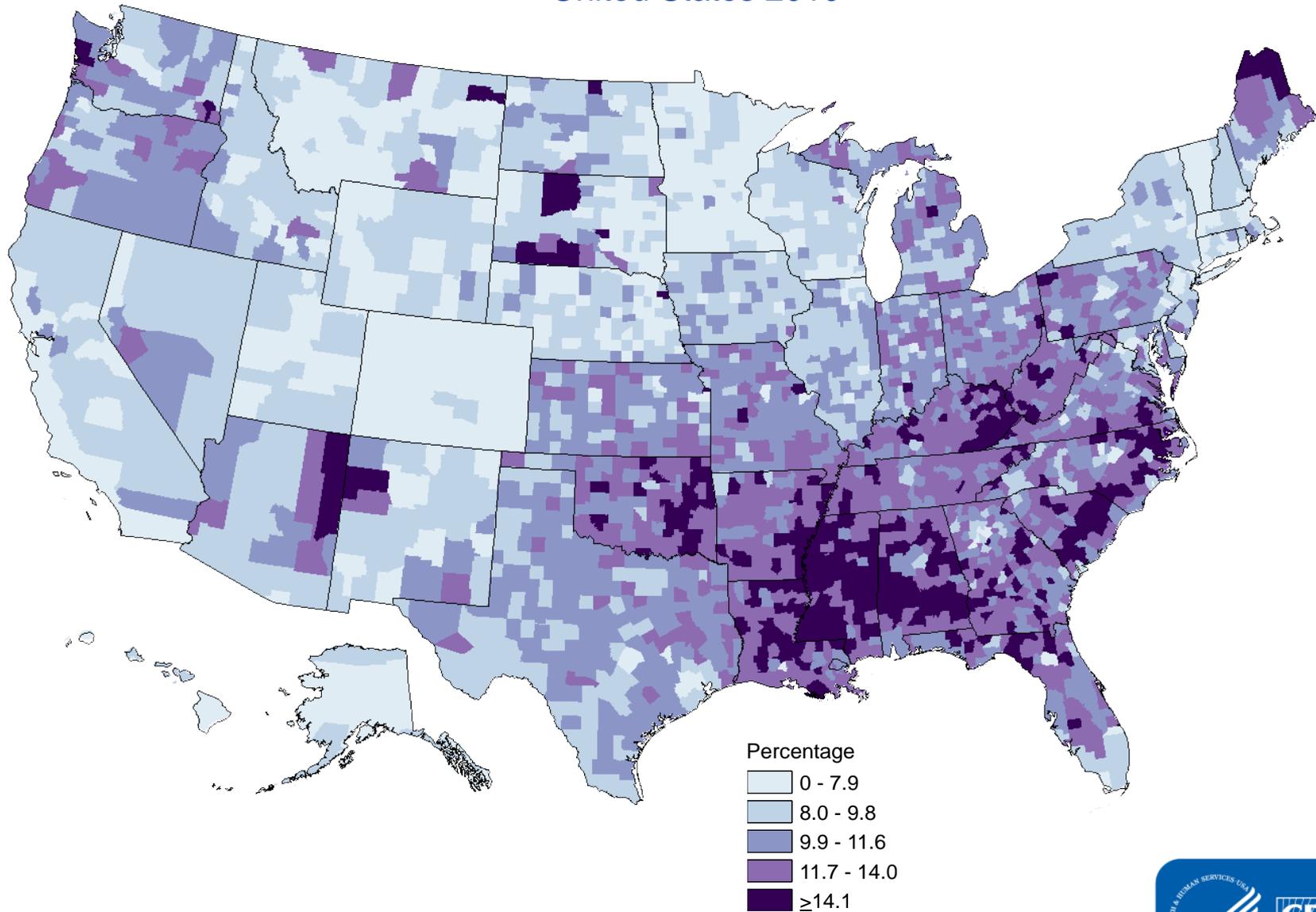
# Age-adjusted County-level Estimates of Diagnosed Diabetes among Adults Aged $\geq 20$ Years: United States 2004



# Age-adjusted County-level Estimates of Diagnosed Diabetes among Adults Aged $\geq 20$ Years: United States 2010



## County-level Estimates of Diagnosed Diabetes Incidence among Adults Aged $\geq 20$ Years: United States 2010



# A Diabetes Epidemiologic Transition

Reductions and improvements



Mortality  
Diabetes Complications  
Preventive Care

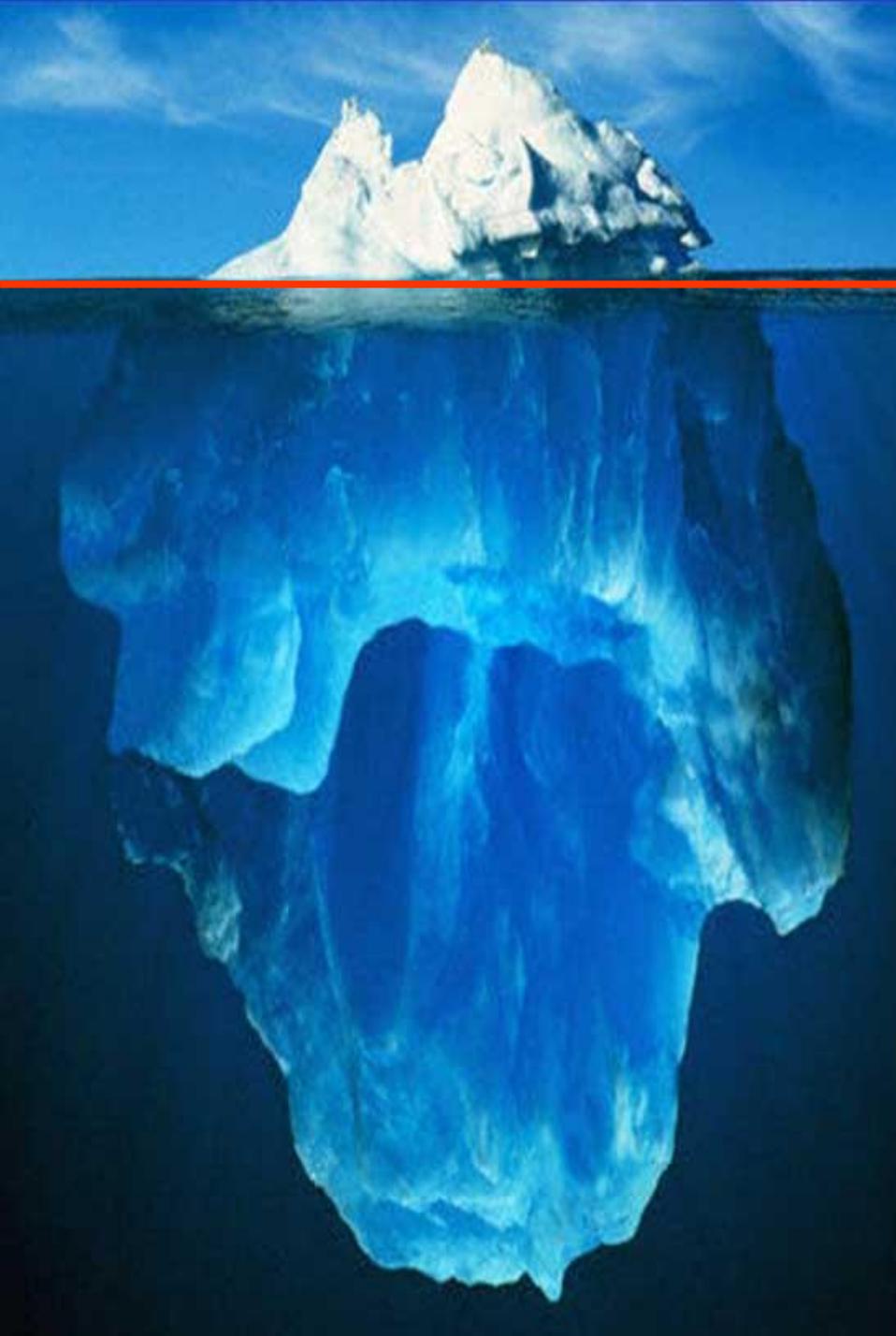
1990 1995 2000 2005 2010

Continued increases  
and stagnation



Risk Factors, Incidence, and  
Prevalence of Diabetes

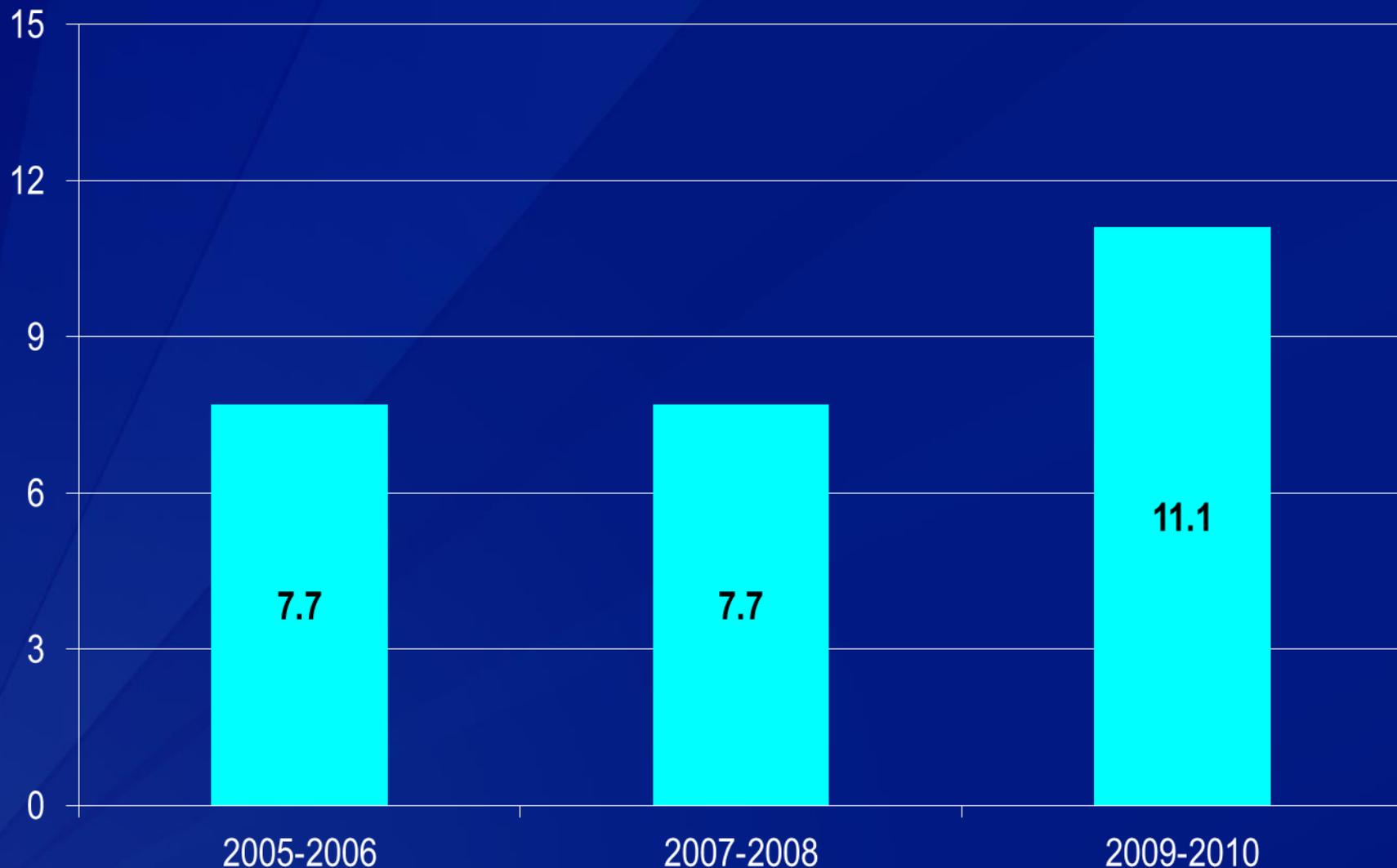
1990 1995 2000 2005 2010



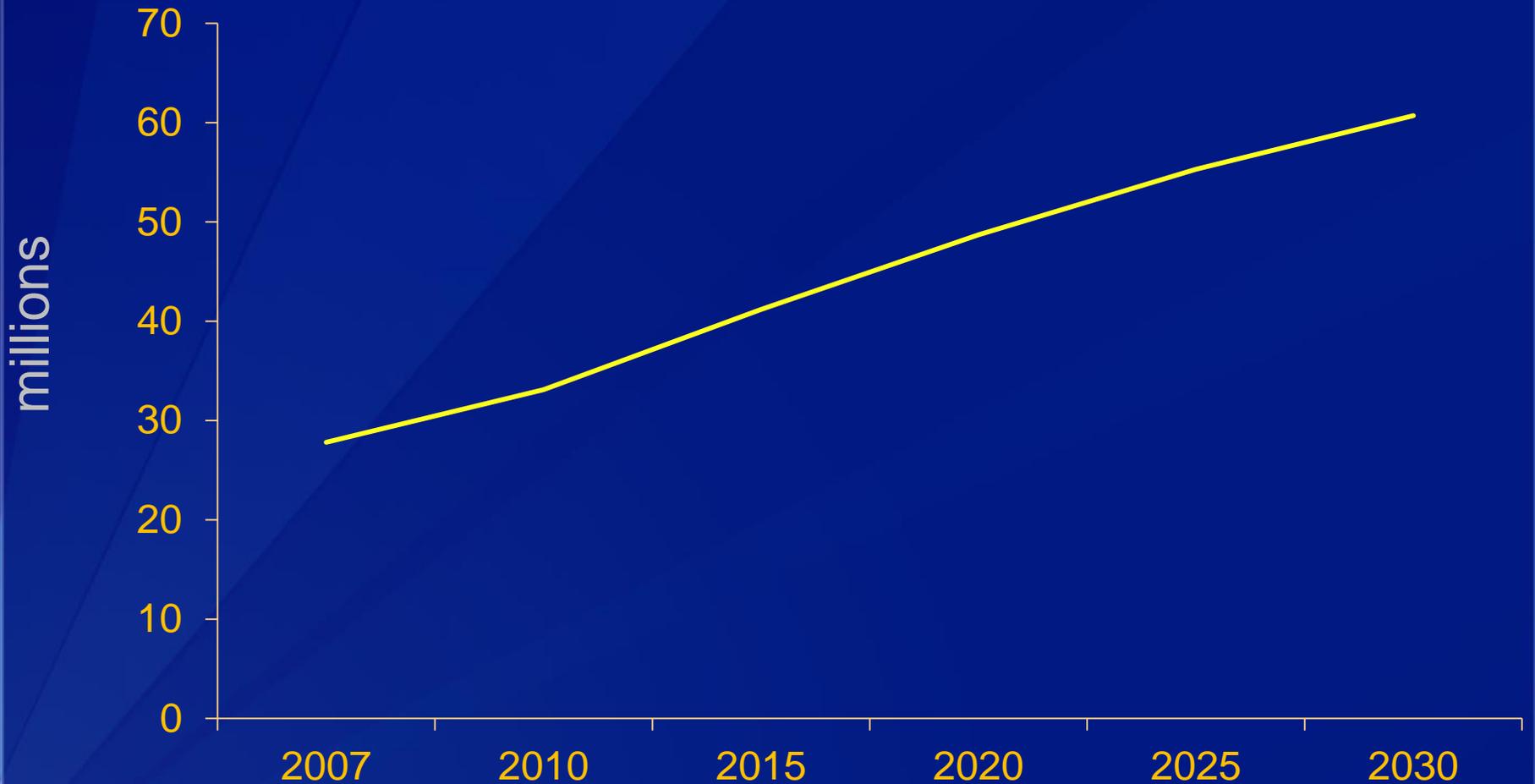
**26 million  
with Diabetes**

**79 million  
with Prediabetes**

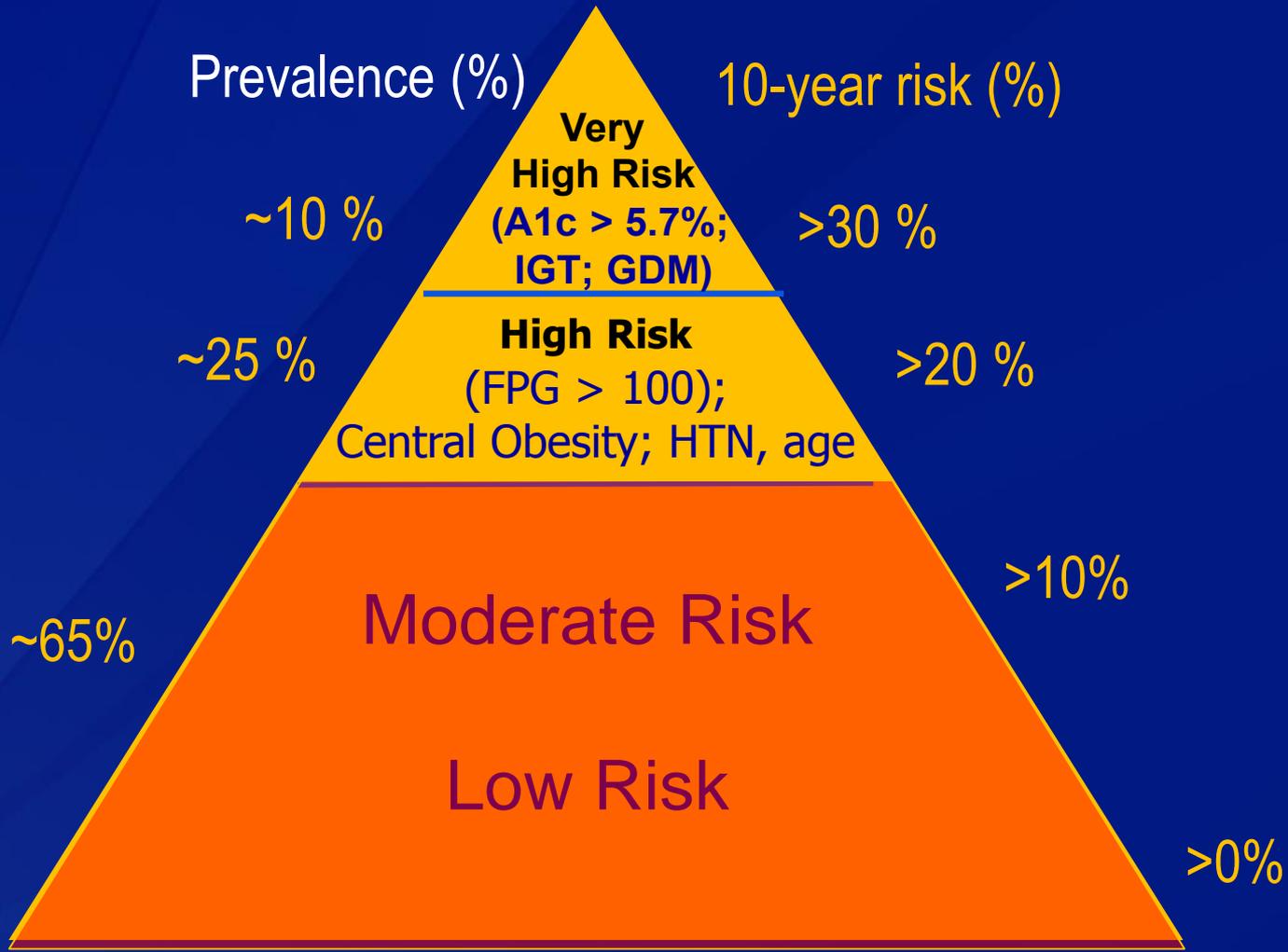
## Proportion of U.S. Adults Aged > 20 with Prediabetes Who Are Aware of Their Risk Status



# Current Projections of Cases of Diabetes in the United States by 2030



# Risk Stratification Pyramid for Diabetes Prevention



# Judith Fradkin, MD

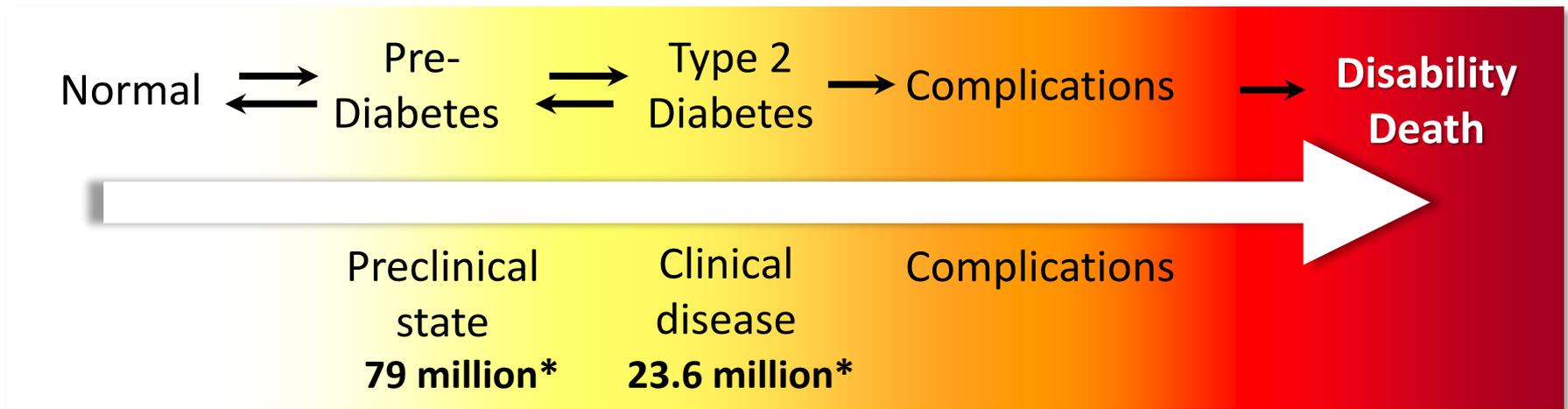
Director, Division of Diabetes, Endocrinology, and Metabolic Diseases  
National Institute of Diabetes and Digestive and Kidney Disorders  
National Institutes of Health



# Feasibility of Preventing Type 2 Diabetes



- There is a long period of glucose intolerance that precedes the development of diabetes
- Screening tests can identify persons at high risk
- There are safe, effective interventions that can address modifiable risk factors



Primary Prevention

Secondary Prevention

Tertiary Prevention

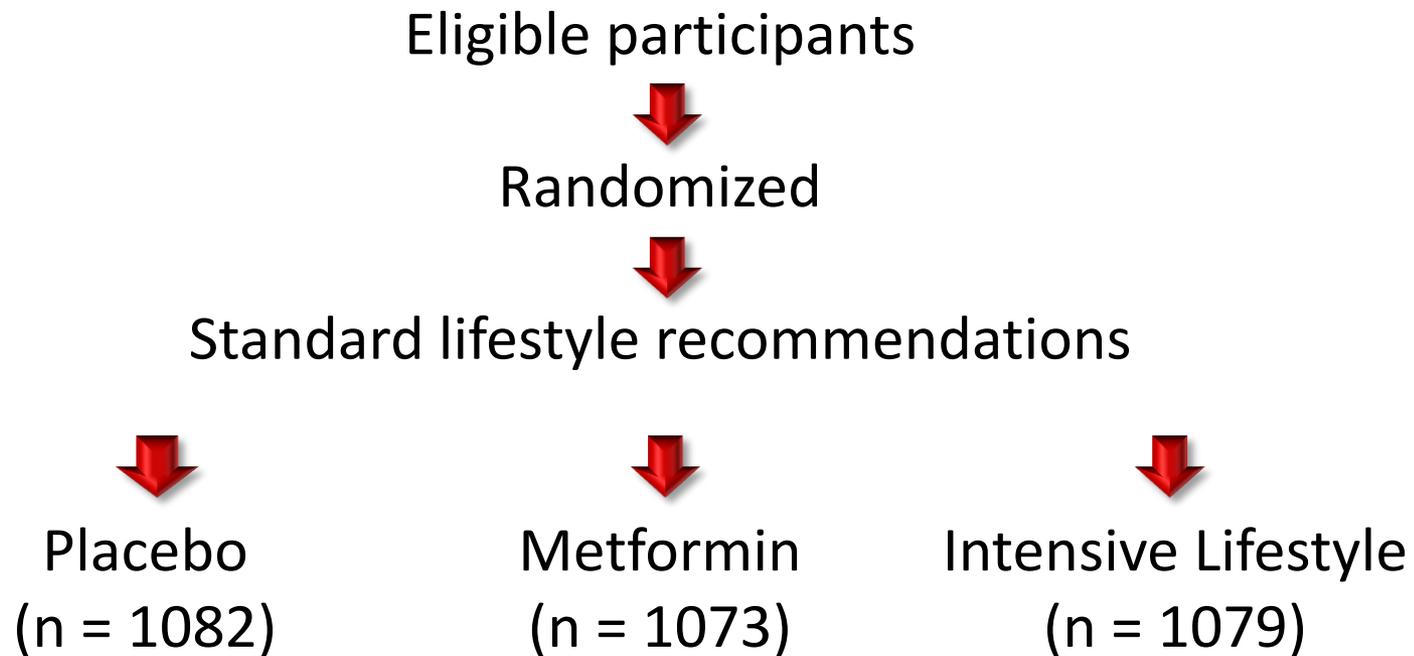


National Institute of Diabetes and Digestive and Kidney Diseases

\*Includes type 1 (5-10%) and type 2 (90-95%) diabetes; diagnosed and undiagnosed cases.

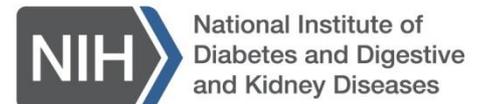
# Diabetes Prevention Program (DPP)

## Study Design



# Lifestyle Intervention

- Intensive behavioral modification program with the following goals
  - 7% weight loss
  - 150 minutes/week physical activity
- Intervention delivery
  - 16 session core curriculum delivered over 24 weeks
  - Monthly visits post core



# Diabetes Prevention Program (DPP)



## Critical Finding

Prevention is achievable for many people at high-risk for type 2 diabetes

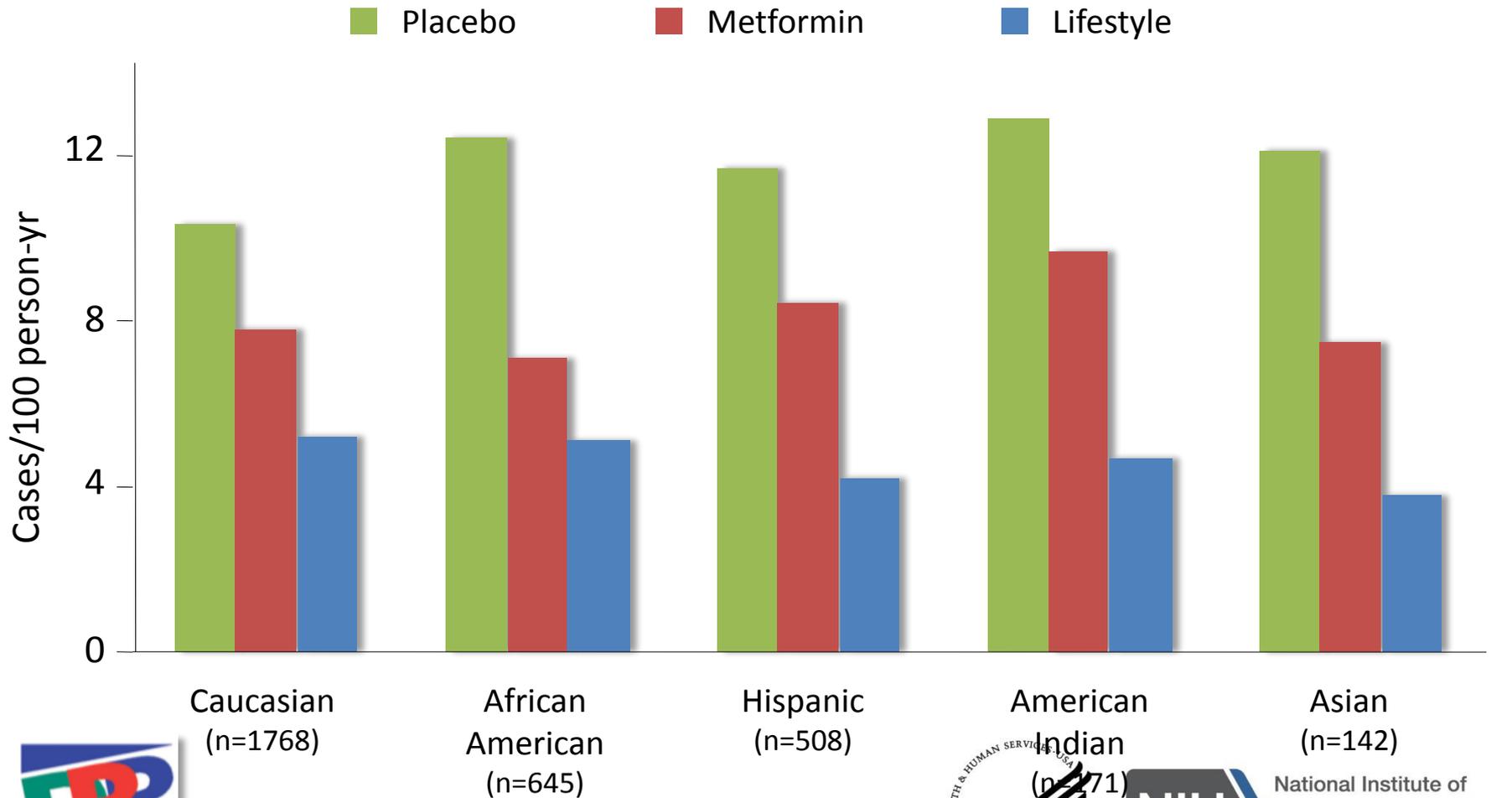
## Major Results

- Lifestyle modification lowered risk by 58%.
- Metformin medication lowered risk by 31%.



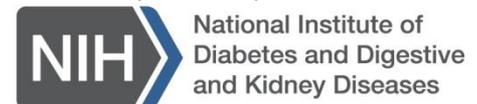
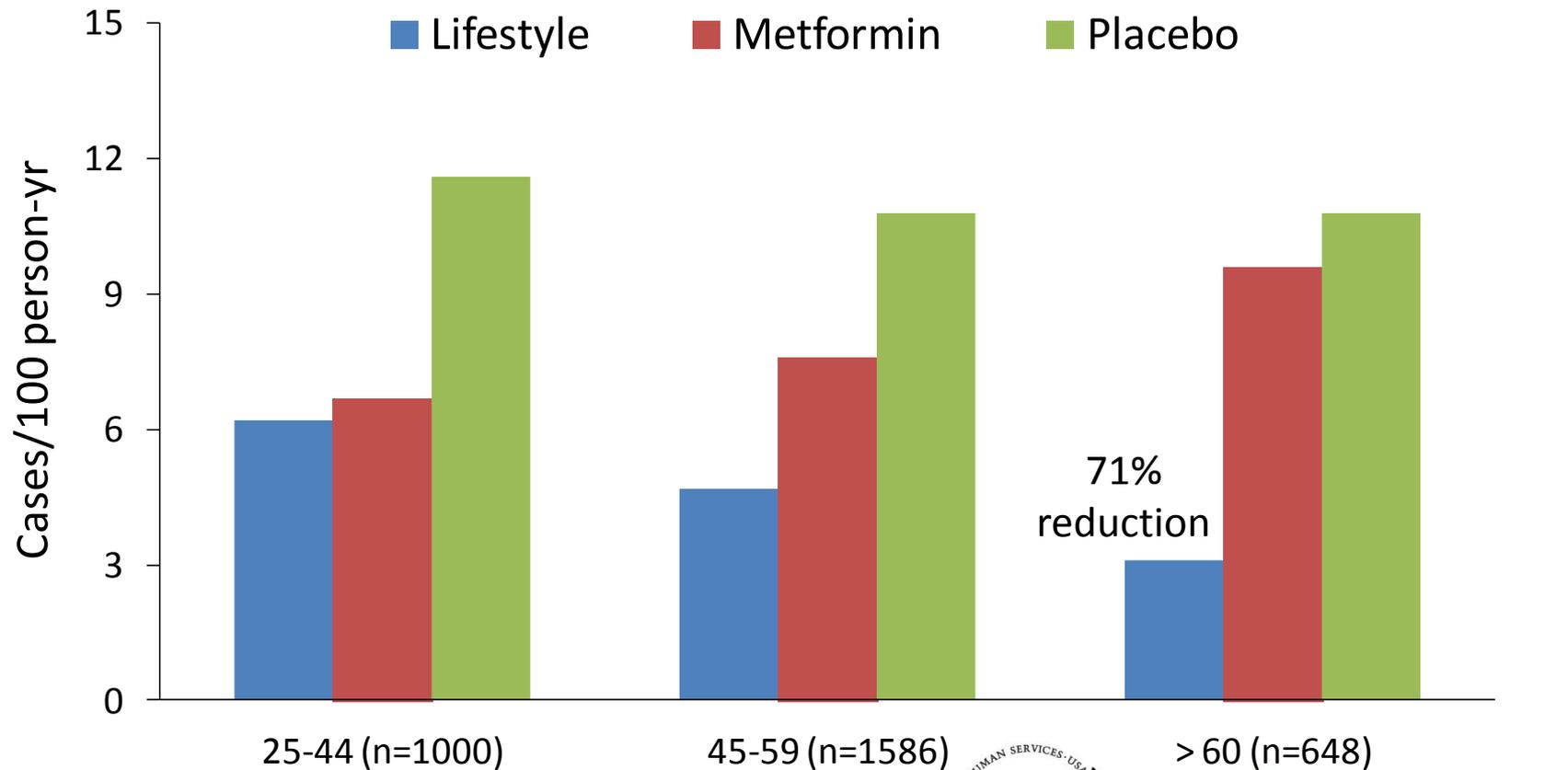
National Institute of  
Diabetes and Digestive  
and Kidney Diseases

# Diabetes Incidence Rates



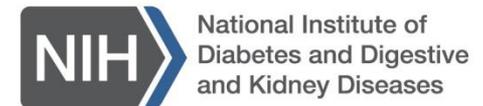
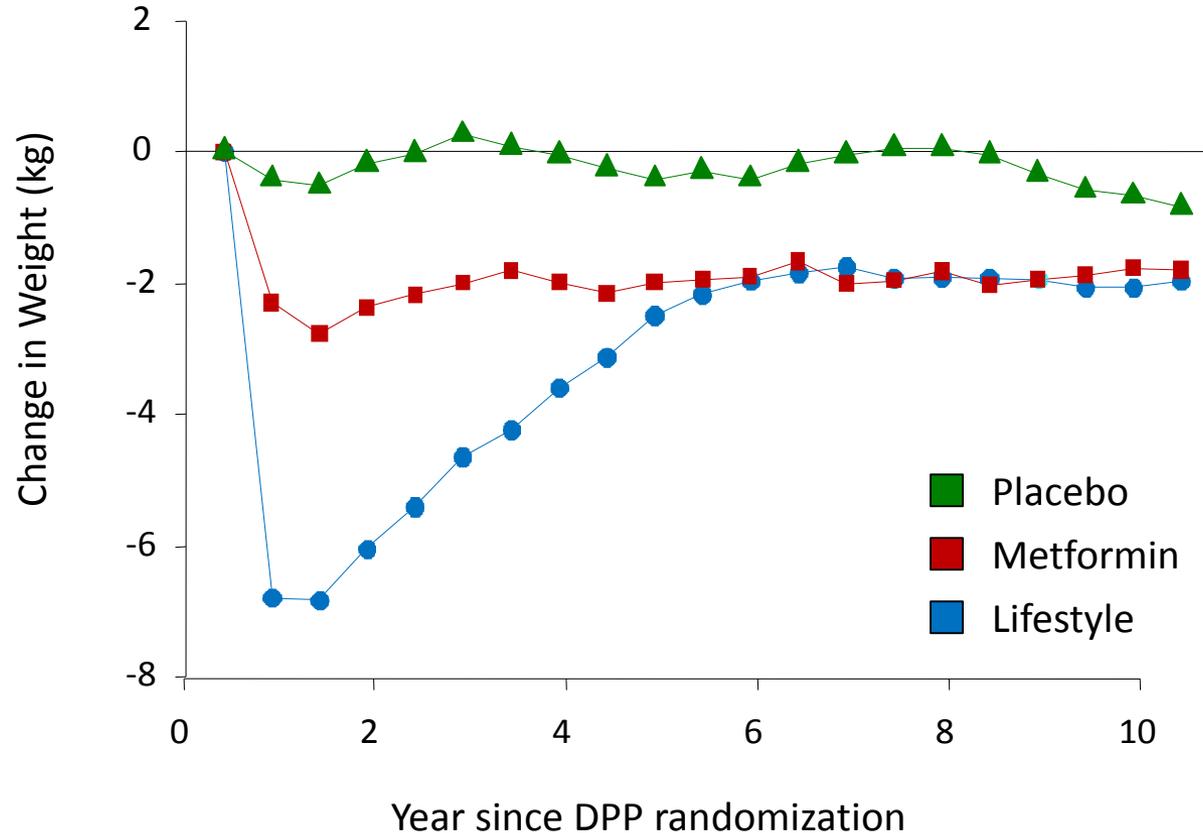
National Institute of Diabetes and Digestive and Kidney Diseases

# Diabetes Incidence Rates by Age

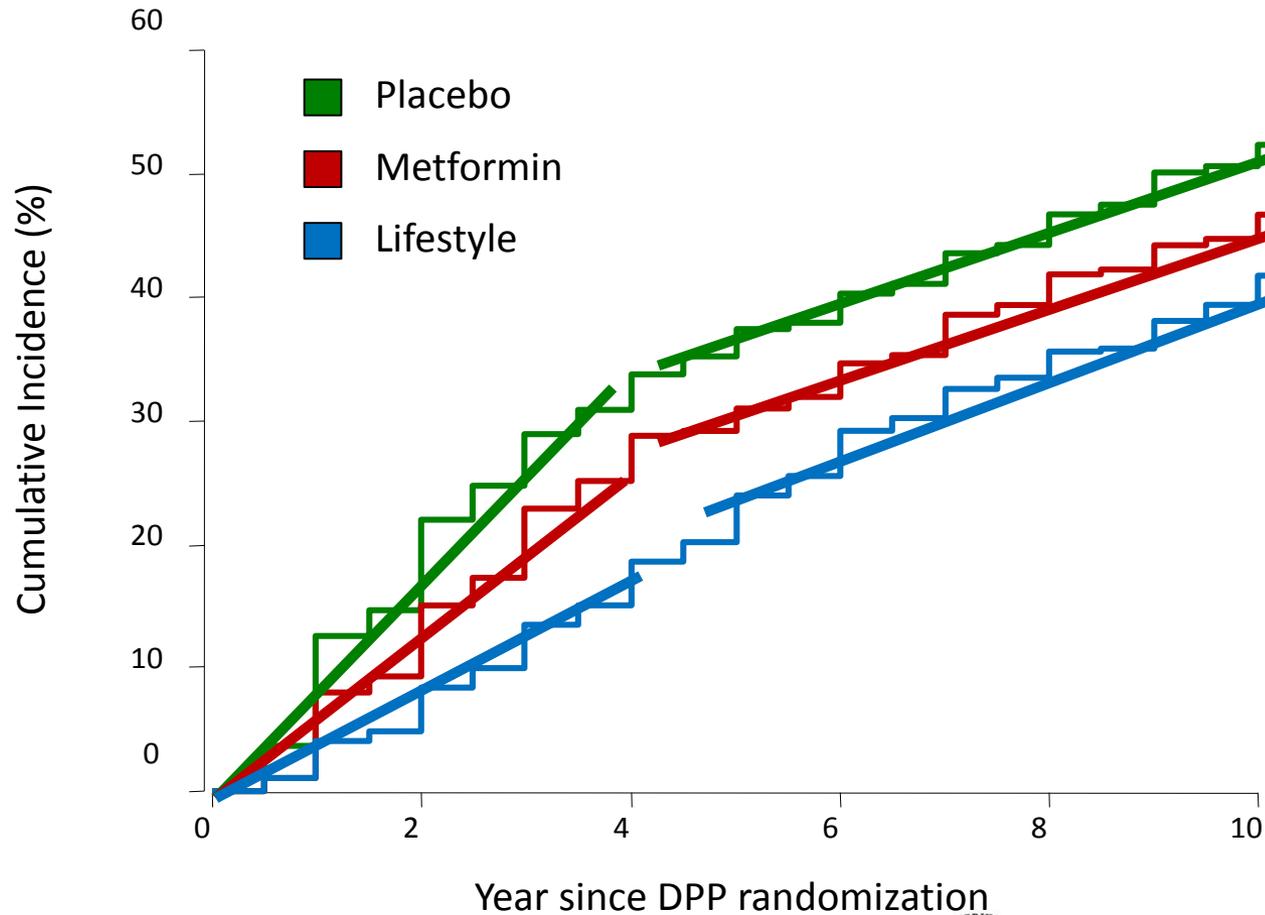


# Weight Change Over Time

Original DPP Clinical Trial Plus Ongoing DPP Outcomes Study



# DPPOS Incidence of Diabetes



# DPP/DPPOS – Cost Effectiveness Study



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## The 10-Year Cost-Effectiveness of Lifestyle Intervention or Metformin for Diabetes Prevention

An intent-to-treat analysis of the DPP/DPPOS

The Diabetes Prevention Program Research Group<sup>4</sup>

<sup>4</sup>Corresponding author: Diabetes Prevention Program Coordinating Center, [dppmail@biostat.bsc.gvu.edu](mailto:dppmail@biostat.bsc.gvu.edu).

### Abstract

**OBJECTIVE** The Diabetes Prevention Program (DPP) and its Outcomes Study (DPPOS) demonstrated that either intensive lifestyle intervention or metformin could prevent type 2 diabetes in high-risk adults for at least 10 years after randomization. We report the 10-year within-trial cost-effectiveness of the interventions.

**RESEARCH DESIGN AND METHODS** Data on resource utilization, cost, and quality of life were collected prospectively. Economic analyses were performed from health system and societal perspectives.

**RESULTS** Over 10 years, the cumulative, undiscounted per capita direct medical costs of the interventions, as implemented during the DPP, were greater for lifestyle (\$4,601) than metformin (\$2,300) or placebo (\$769). The cumulative direct medical costs of care outside the DPP/DPPOS were least for lifestyle (\$24,563 lifestyle vs. \$25,616 metformin vs. \$27,468 placebo). The cumulative, combined total direct medical costs were greatest for lifestyle and least for metformin (\$29,164 lifestyle vs. \$27,915 metformin vs. \$28,236 placebo). The cumulative quality-adjusted life-years (QALYs) accrued over 10 years were

- Over 10 years, from a payer perspective, lifestyle was cost-effective and metformin was marginally cost-saving compared with placebo.
- Investment in lifestyle and metformin interventions for type 2 diabetes prevention in high-risk adults provides good value for the money spent.
- Cost analysis and outcomes are published in the April 2012 issue of Diabetes Care and online at <http://diabetes.org/diabetescare>.

Source: The Diabetes Prevention Program Research Group et al. Diabetes Care 2012;35:723-730



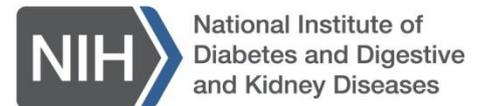
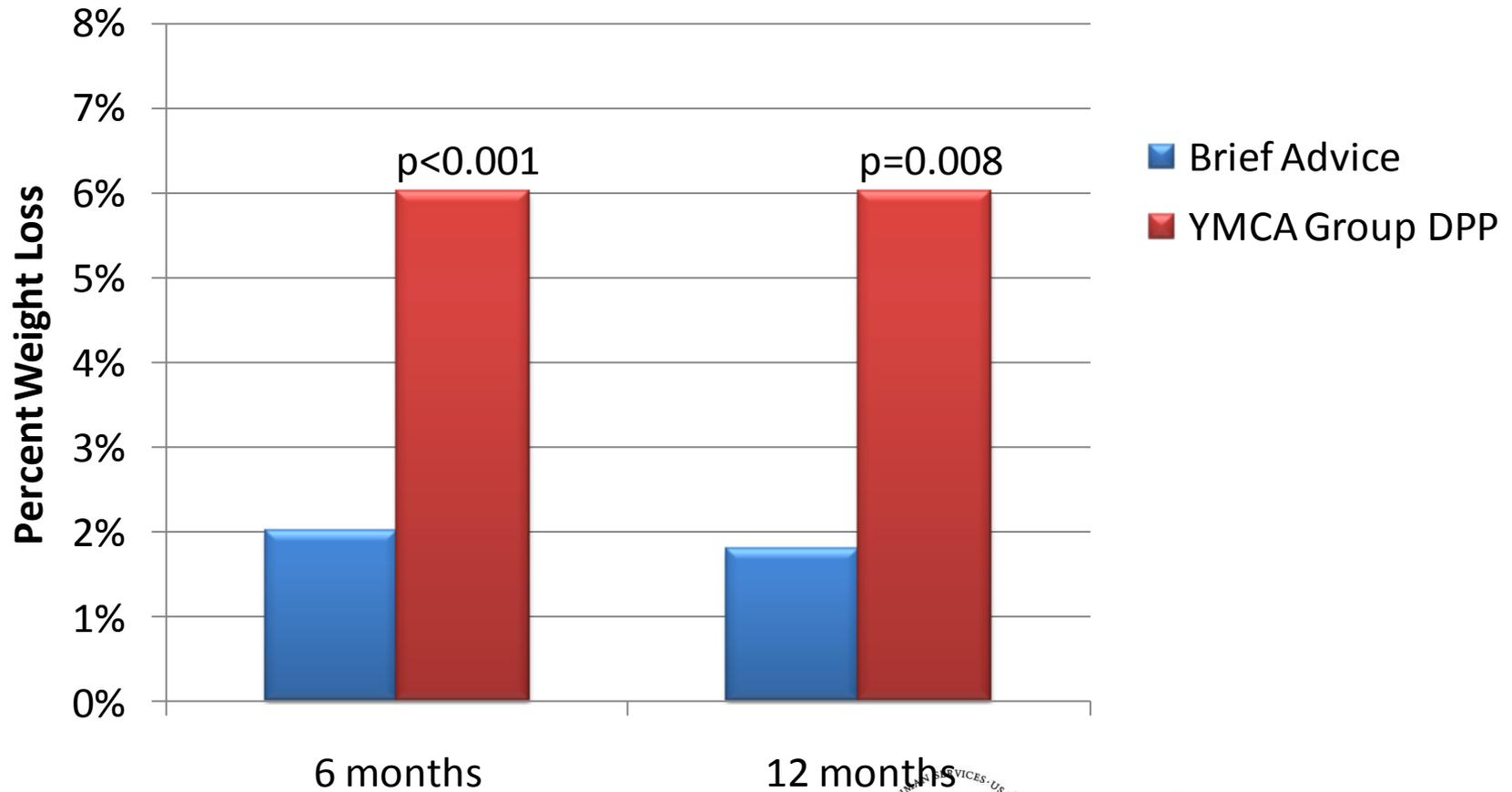
National Institute of Diabetes and Digestive and Kidney Diseases

# Putting Proven Therapies into Practice

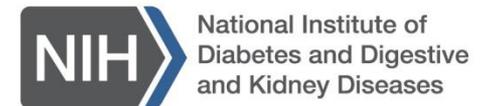
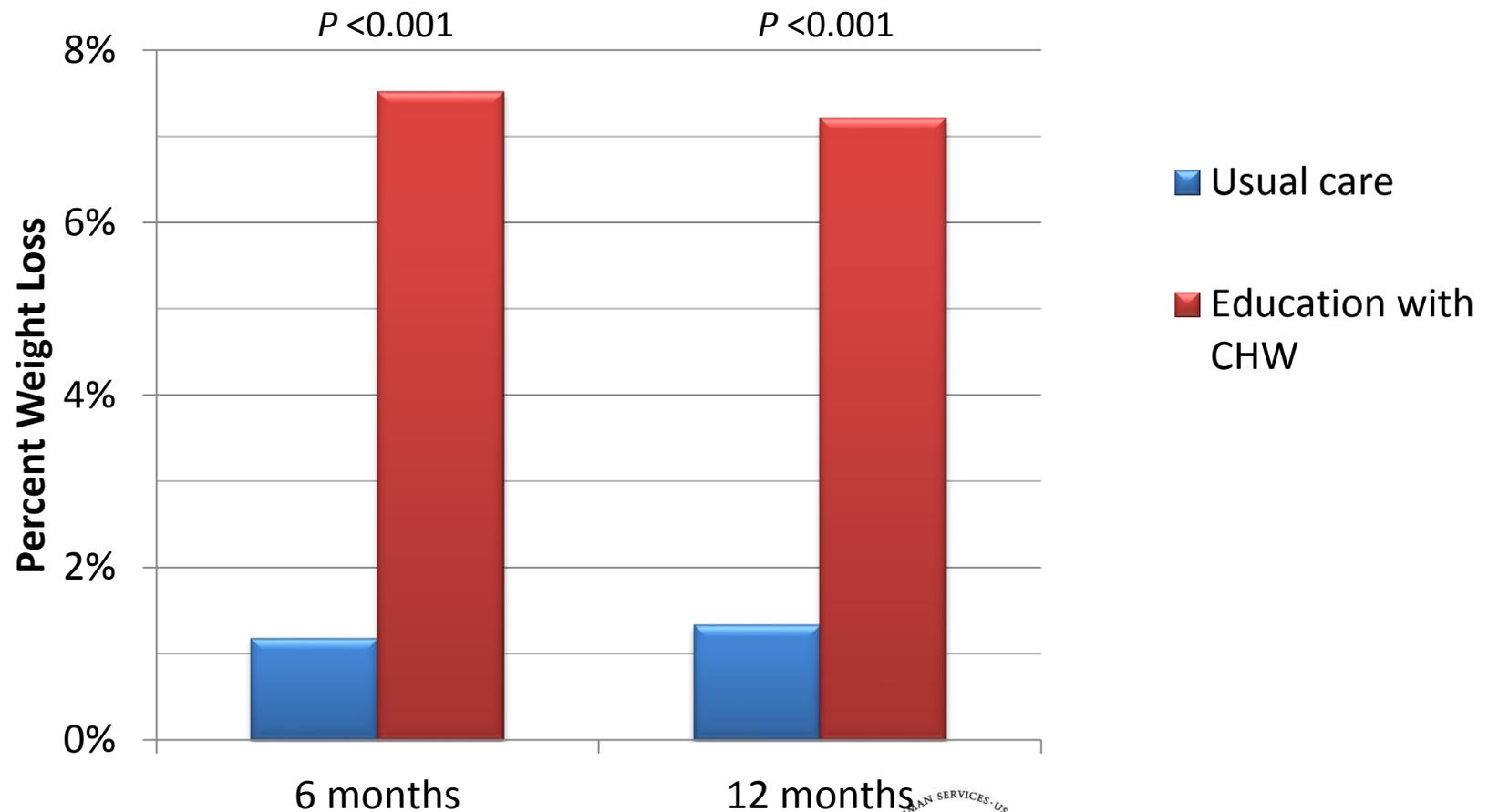
- Diabetes prevention and control awards
- Practical and generalizable approaches to implement therapies with proven efficacy
  - Dissemination potential
  - Cost effectiveness
  - Diverse populations
  - Real world settings (communities, worksites, etc.)



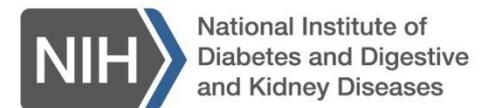
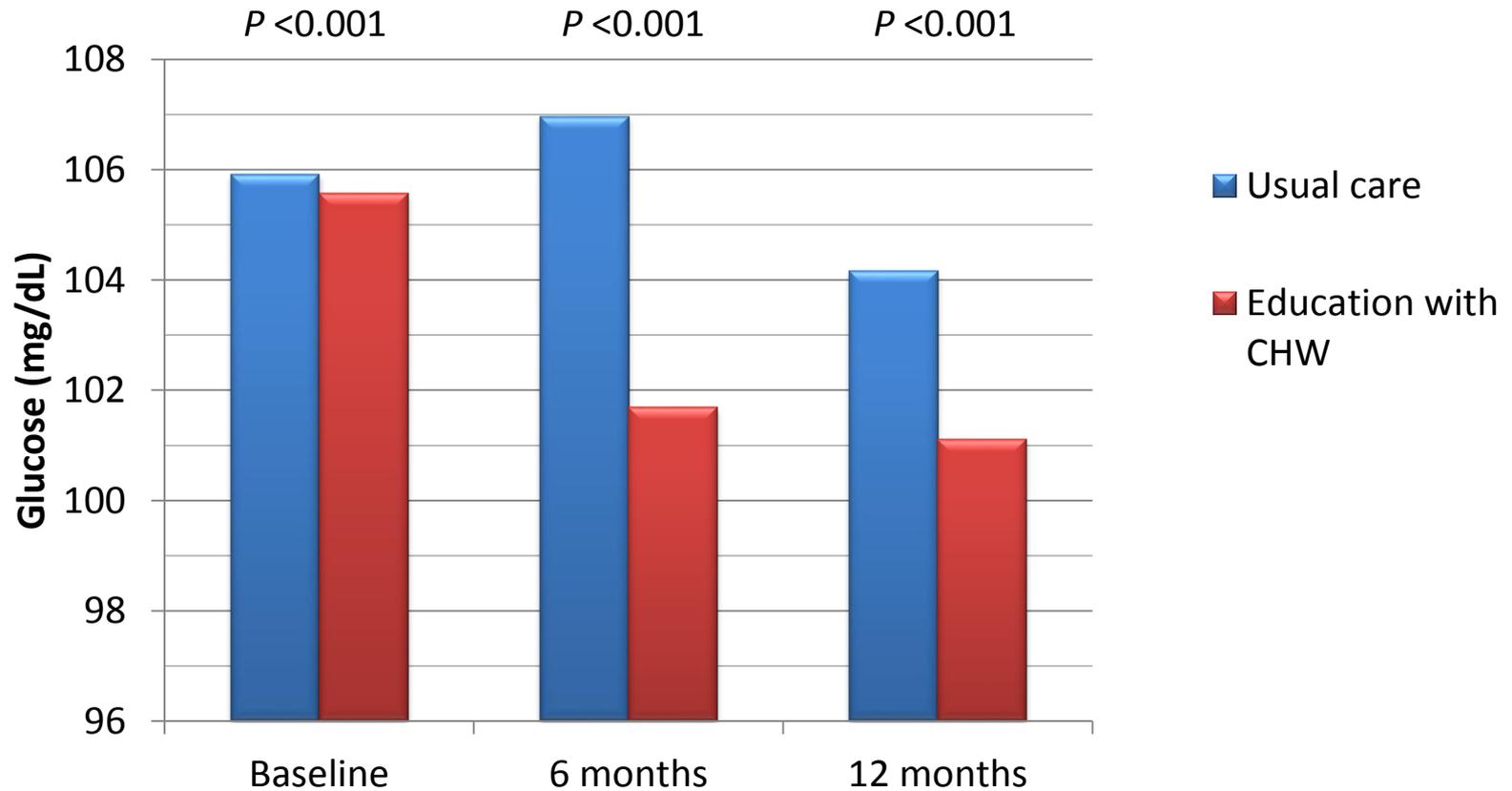
# Community-based Group DPP Delivered at YMCA



# Community-based Group DPP Delivered by Community Health Workers



# Community-based Group DPP Delivered by Community Health Workers



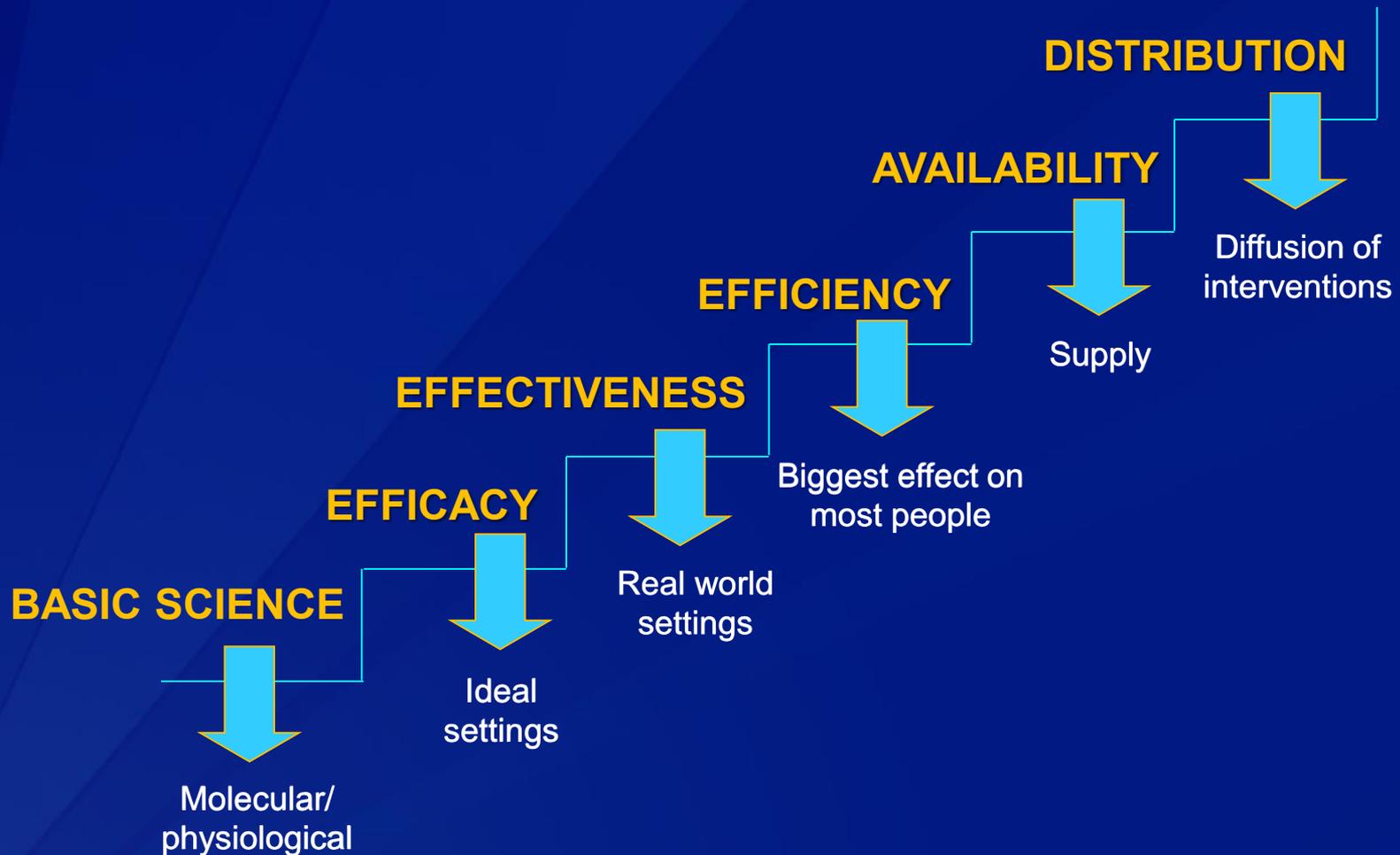
# Type 2 Diabetes Prevention

- Delaying or preventing type 2 diabetes is proven and cost-effective
- Translation of this research into communities can turn the tide on the diabetes epidemic



National Institute of  
Diabetes and Digestive  
and Kidney Diseases





Adapted from information in Sinclair JC, et al. N Engl J Med. 1981;305:489–494. and Detsky AS, et al. Ann Intern Med. 1990;113:147-154.

# National Diabetes Prevention Program

## COMPONENTS



### **Training: Increase Workforce**

Train the workforce that can implement the program cost effectively.



### **Recognition Program: Assure Quality**

Implement a recognition program that will:

- Assure quality.
- Lead to reimbursement.
- Allow CDC to develop a program registry.



### **Intervention Sites: Deliver Program**

Develop intervention sites that will build infrastructure and provide the program.



### **Health Marketing: Support Program Uptake**

Increase referrals to and use of the prevention program.

[www.cdc.gov/diabetes/prevention](http://www.cdc.gov/diabetes/prevention)

Albright A, Gregg EW. *Am J Prev Med.* 2013;44(4S4):S346-S351.

# Increase Workforce

- Trained lifestyle coaches attached to delivery organization
- Lay coaches and health professional coaches can both effectively deliver the program
- Use organizations that train to a CDC-approved curriculum ([www.cdc.gov/diabetes/prevention](http://www.cdc.gov/diabetes/prevention))
- > 1200 coaches trained

# Quality Assurance

## CDC Diabetes Prevention Recognition Program:

- Assure program quality and fidelity to scientific evidence
- Maintain a registry of recognized organizations
- Provide technical assistance to programs to assist staff in delivery and problem-solving to achieve and maintain recognition
- > 500 sites in recognition program

[www.cdc.gov/diabetes/prevention/recognition](http://www.cdc.gov/diabetes/prevention/recognition)

# Deliver Program

- Link health care and community sectors
- Effective business model for program scalability and sustainability
- Programs in 48 states and DC to date – need many more
- Exploring methods to deliver program more widely
- Attendance matters

# Support Program Uptake

- 89% with no diagnosis and no symptoms requires aggressive awareness and testing efforts
- Engage multiple channels: employers, insurers, providers and directly to consumers

# Summary

- Evidence for prevention through lifestyle change is strong
- Lifestyle change program is cost effective
- A coordinated approach, as provided by the National DPP, is critical to achieve scale
- Quality assurance and evaluation are part of National DPP
- Need to act now and think BIG







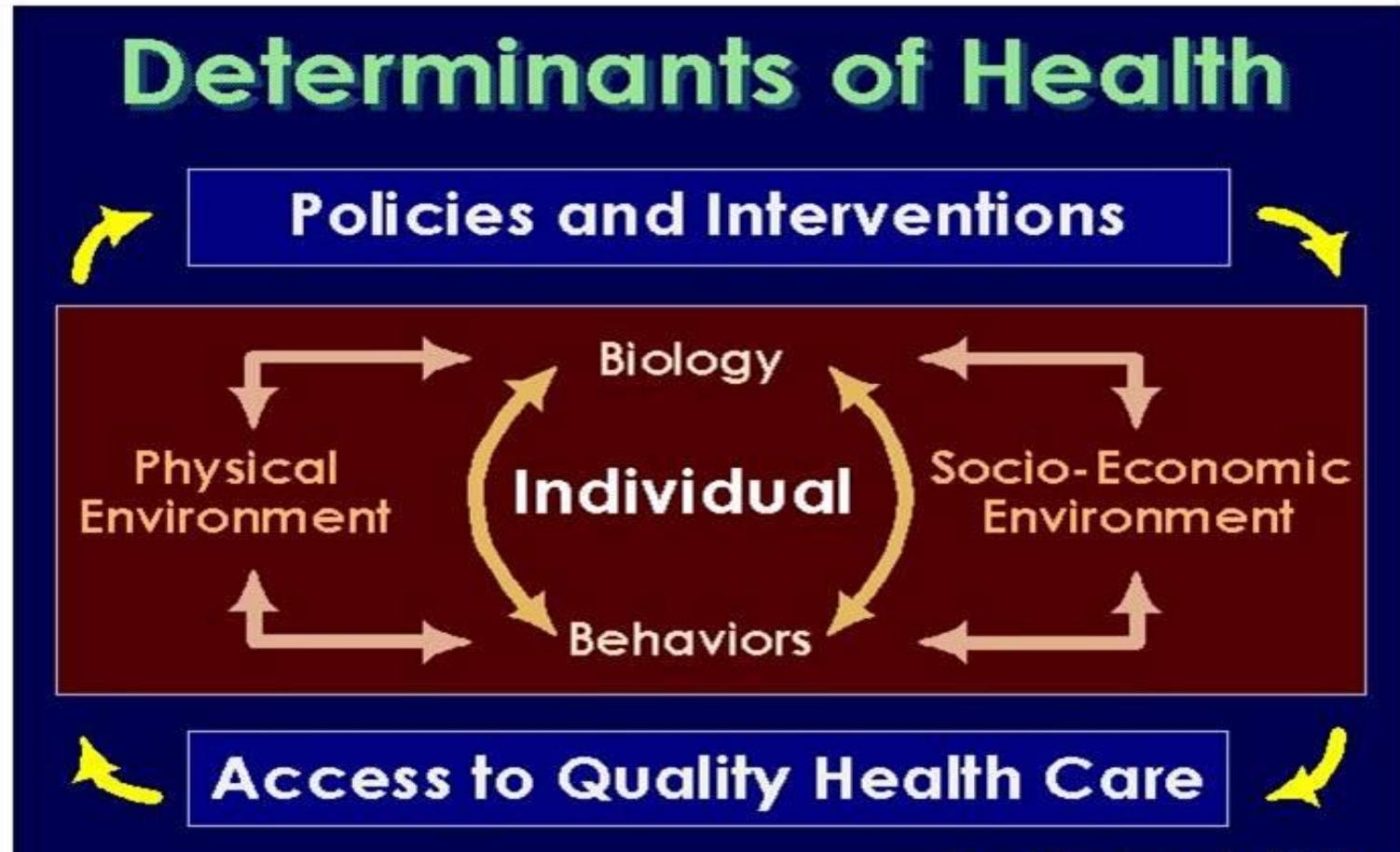


We must consider both:

- Personal responsibility and
- Structural challenges



All Hands  
on Deck



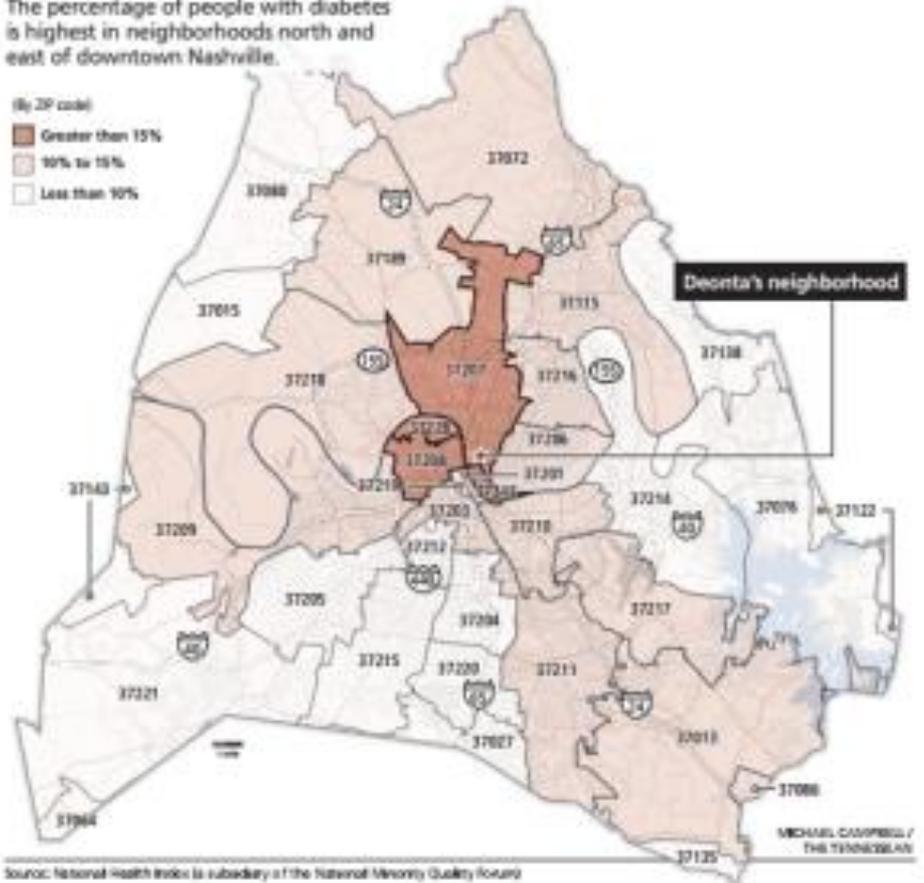
- “Hot zones” in Nashville
- “The problem is simply too big for just physicians to address. We need everybody, with all hands on deck.”

## DIABETES HOT ZONE

The percentage of people with diabetes is highest in neighborhoods north and east of downtown Nashville.

(By ZIP code)

- Greater than 15%
- 10% to 15%
- Less than 10%



# Addressing Structural Challenges



**THIS IS  
PUBLIC HEALTH.**

[whatispublichealth.org](http://whatispublichealth.org)



## Keys to success:

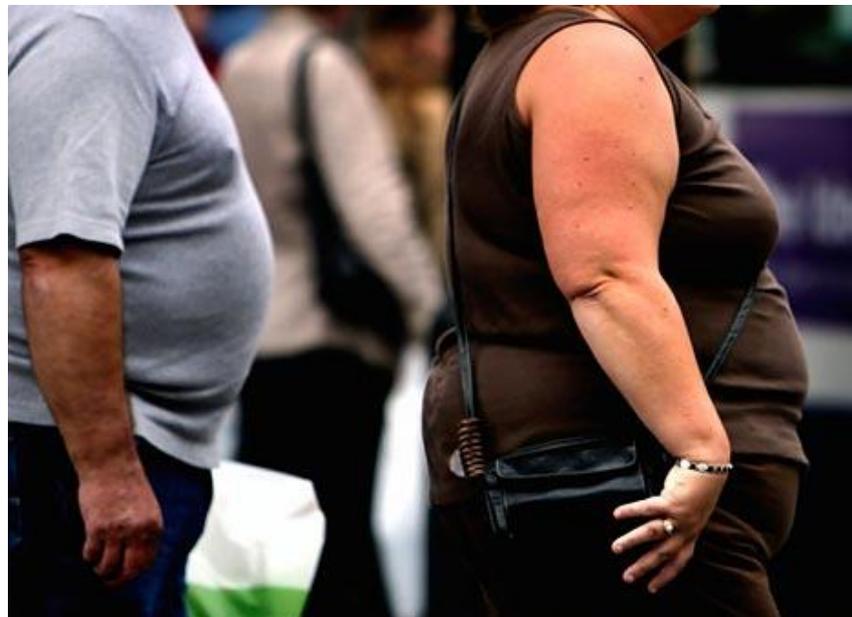
- Strong leadership across disciplines
- Shared information and analyses
- Sustained focus by partners



INSTITUTE OF MEDICINE  
OF THE NATIONAL ACADEMIES

## 1. Collaborate on awareness

Only 11% of people with prediabetes are aware they have it



## 1. Collaborate on awareness

Continue translation of  
Diabetes Prevention  
Program results



## 1. Collaborate on awareness

Do you know your risk for diabetes?

ARE YOU AT RISK FOR  
**TYPE 2 DIABETES?** 

**Diabetes Risk Test**

- 1** How old are you?  
Less than 40 years (0 points)  
40—49 years (1 point)  
50—59 years (2 points)  
60 years or older (3 points)
- 2** Are you a man or a woman?  
Man (1 point) Woman (0 points)
- 3** If you are a woman, have you ever been diagnosed with gestational diabetes?  
Yes (1 point) No (0 points)
- 4** Do you have a mother, father, sister, or brother with diabetes?  
Yes (1 point) No (0 points)
- 5** Have you ever been diagnosed with high blood pressure?  
Yes (1 point) No (0 points)
- 6** Are you physically active?  
Yes (0 points) No (1 point)
- 7** What is your weight status?  
(see chart at right)

Write your score in the box.

↓

Add up your score.

↓

**If you scored 5 or higher:**  
You are at increased risk for having type 2 diabetes. However, only your doctor can tell for sure if you do have type 2 diabetes or prediabetes (a condition that precedes type 2 diabetes in which blood glucose levels are higher than normal). Talk to your doctor to see if additional testing is needed.

Type 2 diabetes is more common in African Americans, Hispanics/Latinos, American Indians, and Asian Americans and Pacific Islanders.

**For more information, visit us at [www.diabetes.org](http://www.diabetes.org) or call 1-800-DIABETES**

 Visit us on Facebook  
[Facebook.com/AmericanDiabetesAssociation](https://www.facebook.com/AmericanDiabetesAssociation)

Height	Weight (lbs.)		
4' 10"	119-142	143-190	191+
4' 11"	124-147	148-197	198+
5' 0"	128-152	153-203	204+
5' 1"	132-157	158-210	211+
5' 2"	136-163	164-217	218+
5' 3"	141-168	169-224	225+
5' 4"	145-173	174-231	232+
5' 5"	150-179	180-239	240+
5' 6"	155-185	186-246	247+
5' 7"	159-190	191-254	255+
5' 8"	164-196	197-261	262+
5' 9"	169-202	203-269	270+
5' 10"	174-208	209-277	278+
5' 11"	179-214	215-285	286+
6' 0"	184-220	221-293	294+
6' 1"	189-226	227-301	302+
6' 2"	194-232	233-310	311+
6' 3"	200-239	240-318	319+
6' 4"	205-245	246-327	328+

(1 Point)	(2 Points)	(3 Points)
-----------	------------	------------

You weigh less than the amount in the left column (0 points)

Adapted from Bang et al., Ann Intern Med 151:775-783, 2009. Original algorithm was validated without gestational diabetes as part of the model.

**Lower Your Risk**

The good news is that you can manage your risk for type 2 diabetes. Small steps make a big difference and can help you live a longer, healthier life.

If you are at high risk, your first step is to see your doctor to see if additional testing is needed.

Visit [diabetes.org](http://diabetes.org) or call 1-800-DIABETES for information, tips on getting started, and ideas for simple, small steps you can take to help lower your risk.



 American Diabetes Association.  
**ALERT!** DAY



 **STOP  
DIABETES.**

# Potential Barriers

- Don't believe diabetes is serious
- Don't believe they could progress to diabetes
- Are ashamed of having prediabetes
- Don't know where/how to get help
- No access to community-based programs
- Unable to afford program

2. Collaborate in advocacy for good public policy to support diabetes prevention

**Make diabetes a national priority**

# Collaborate in Advocacy

## Policymakers must:

- Understand the seriousness of diabetes
- Know that there is scientific support for diabetes prevention
- Know that there is an evidence-based, affordable intervention



3. Collaborate in support of behavior change



# Employers Are Important

- Inform employers that diabetes prevention is proven, possible, and affordable
- Encourage proper incentives



# What We Must Share

Responsibility for communicating:

- Seriousness of diabetes
- Risk factors for type 2 diabetes
- Diabetes can be prevented or delayed through lifestyle intervention

- Increase awareness among health care providers
- Provide info on patient resources
- Encourage clinicians to screen and refer
- Encourage clinicians to help address community issues that contribute to prediabetes



- Engage in community projects
- Screen at-risk patients
- Deliver and discuss test results
- Refer those with prediabetes to programs and resources



# Together, We Can



 American Diabetes Association.







FOR YOUTH DEVELOPMENT®  
FOR HEALTHY LIVING  
FOR SOCIAL RESPONSIBILITY

# CHANGE TODAY FOR A HEALTHIER FUTURE

YMCA'S DIABETES PREVENTION PROGRAM  
OVERVIEW

November 13, 2013



# WHERE WE ARE TODAY



All numbers represent data collected through September 30, 2012.

<sup>1</sup> Includes Indiana's 392 participants from 2005 – June 2010

<sup>2</sup> Does not include # of classes in Indiana prior to June 2010

<sup>3</sup> National Weight Loss as of November 2012

# WHAT WE'RE LEARNING

# THE CHALLENGE

Most individuals do not know their risk status

Changes to our health and health care systems could take decades

If you build it...

Making the healthy choice the easy choice



# THE OPPORTUNITY

In partnership with AMA, we're working to increase diabetes/prediabetes screening by health care providers through changes to health policy, medical training, and systematizing the referral process

Our experience has shown when the program is covered by payors (both private and public), there is significant uptake in participation in prevention programs like the YMCA's Diabetes Prevention Program

If you build it...

Continue efforts in states and communities to build more opportunities for healthy eating and activity where people live, work, learn and play



# COMMUNITY SPOTLIGHT - DELAWARE

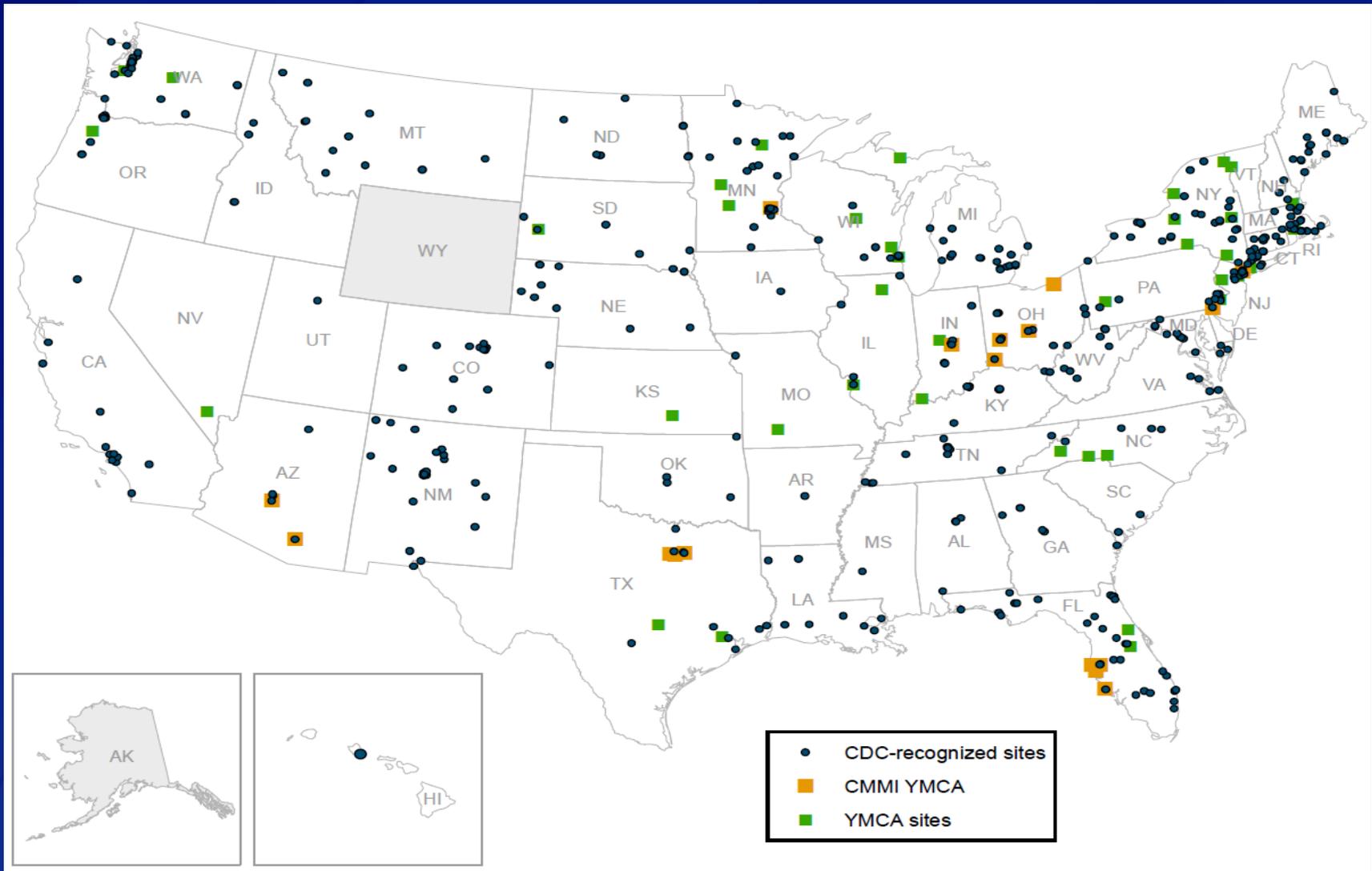
- **Successful engagement strategies:** increasing health care providers referrals, media (print, radio, etc.), health fairs/ community events, other organizations-partnerships
- **Quick wins:** capitalizing on existing relationships by setting up direct referrals to the program, conducting outreach to providers with a high volume of patients - especially Medicare patients, face-to-face initial contact and ongoing follow-up (materials, questions, etc.), being organized and intentional out outreach
- **Referral system building:** the Y prepared to receive direct referrals (Google voice number, E-fax, web link, auto prompts), worked with health care providers to understand benefit of referral (patient connections, improved health, provides patient with tangible next step, etc.)
- **Opportunities:** negotiating with health systems (formal MOU and agreements), EMR referrals, auto prompts







# National Diabetes Prevention Program Sites



June 6, 2013

National Center for Chronic Disease Prevention and Health Promotion  
Division of Diabetes Translation

[www.cdc.gov/diabetes](http://www.cdc.gov/diabetes)



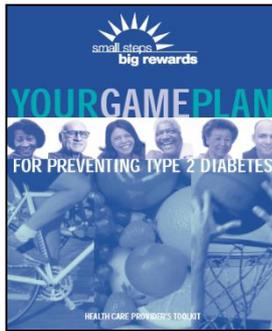


National Diabetes Education Program

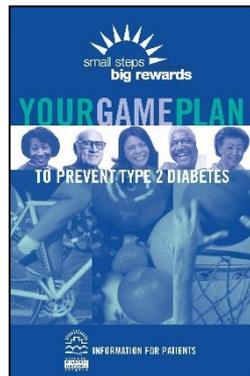
A program of the National Institutes of Health and the Centers for Disease Control and Prevention

# GAME PLAN

# NDEP Diabetes Prevention Materials



Health Care Professional Toolkit



For Patients



[www.YourDiabetesInfo.org](http://www.YourDiabetesInfo.org)  
1-888-93-NDEP (1-888-693-6337)



# Healthy People 2020 Public Comment – Provide Your Input!

***Participate in the Healthy People 2020 process! The public comment period is open from November 13, 2013 through 5:00pm ET on December 4, 2013.***



You will be able to:

- Comment on proposed new objectives to be added to the HIV, Health-Related Quality of Life & Well-Being, and Social Determinants of Health topic areas
- Propose new objectives to be included in one of the 42 existing Healthy People 2020 topic areas

***To participate, visit:***

**<http://www.healthypeople.gov/2020/about/publicComment.aspx>**





# Healthy People 2020 Tobacco LHI Webinar



**Join us on November 21 for a *Who's Leading the Leading Health Indicators?* Webinar to learn how one state is working to reduce tobacco-related health issues.**

**Register now!**

**[www.healthypeople.gov](http://www.healthypeople.gov)**



# Healthy People 2020 Progress Review Webinar

## *Sleeping, Breathing and Quality of Life*

**Thursday, December 5 | 12:00PM EST**

Please join us as we review the progress of select  
Healthy People 2020 objectives in the  
Respiratory Diseases and Sleep Health Topic Areas.

Hear from a community-based organization that is  
partnering to prevent and control asthma.

***To register, visit:  
[www.healthypeople.gov](http://www.healthypeople.gov)***

