

**Disease Management Summit
Philadelphia, Pennsylvania
May 8, 2007**



ZIP-Code Mapping and Diabetes Disease Management

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ZIP-Code Mapping and Diabetes Disease Management



OUTLINE

- Background -- National Minority Quality Forum
- Prevalence -- Ethnic and Racial Minorities
- Surveillance -- ZIP-Code Health Disparity Zones
- Disease Management – Disparity Reduction Focus



The National Minority Quality Forum

- Non-profit, non-partisan research, education
- Leadership: Gary A. Puckrein, PhD, President and CEO
-----Founded in 1998
- Scientific Advisory Board



Scientific Advisory Board Executive Committee

Randall W. Maxey, MD, PhD Former President, National Medical Association (NMA)

Mark B. McClellan, MD, PhD, Former CMS Administrator & FDA Commissioner, Visiting Senior Fellow, Brookings-AEI Joint Center

Rodrigo A. Munoz, MD, Former President, American Psychiatric Association, Clinical Professor of Psychiatry

Keith C. Norris, MD, Associate Dean for Research, Charles Drew Medical School

Jorge A. Quel, MD, Executive Director, Hispanic Asthma and Allergy Medical Association (HAAMA)

Thomas Tsang, MD, MPH, Chief Medical Officer, Charles B. Wang Community Health Center, The Center for the Study of Asian American Health (CSAAH)
New York University School of Medicine



- **MISSION**
Ensure high risk racial and ethnic populations and communities receive optimal health care that eliminates quality of care disparities
- **VISION**
Prepare the US health system for providing optimal health care to a diverse society [2050 no majority population group]
- **GOAL**
Strengthen national and local efforts to eliminate premature death and preventable illness in ethnic and racial minorities and other special populations, including elderly.



CORNERSTONE

- Formulate evidence-based, data-driven initiatives through public and private partnerships



TACTICS

NMQF database: Health Status, Medical, Environment:

- *Assisting* providers, administrators, policymakers, communities & faith-based organizations delivering optimal health care services to high-risk minority communities
- Analyzing data on care delivery, organization of health care networks and management of minority health care resources
- *Building* a surveillance reporting capacity on health care costs, status and quality of care specific to the well being and “death gap” for minorities and special populations



PRIORITIES

- ***Recruiting minority*** leaders willing to participate in the quality and reimbursement debates and decisions, (pay-for-performance, value exchanges)
- ***Conducting and managing zip code level analysis*** that identifies health status, disease incidence, prevalence and minority health disparities
- ***Identifying high-risk minority communities*** to focus on improving care quality, raising the bar to “state-of-the-art” standards



PRIORITIES (CONTINUED)

- ***Convening Minority Technical Expert Panels (M-TEPs)*** to review evidence-based, consensus guidelines and performance measures for proven treatment and therapeutic effectiveness in minorities – clinical trials not powered for minorities
- ***Improving cultural relevance/competency*** in health and medical services delivery
- ***Fostering meaningful community value exchanges*** that include education, training as defined by minority communities



ACTIVITIES

APRIL National Minority Health Month started in 2001 by NMQF CEO Gary Puckrein, working with Dr. David Satcher who was launching *Healthy People 2010*. Today over 24 states conduct related activities

- **Annual National Health Disparities Leadership Summit & Awards Dinner** are held in Washington DC
- **Community-wide programs** involving minority leaders
- **NMQF Health Policy interface** stimulates policy leader debate



HEALTH DISPARITIES

A health disparity population is “a population where there is significant disparity in the overall rate of disease incidence, prevalence, morbidity, mortality, or survival rates in the population as compared to the health status of the general population”¹.

1. Minority Health and Health Disparities Research and Education Act of 2000



VARIABLES: Premise is many impact quality of life, health status and the quality of health and medical services

- **Demographics** of race, ethnicity, gender and culture (country of origin)
- **Geographic location** (more later)
- **Socioeconomic status**
- **Nutrition/diet and exercise**
- **Age**



VARIABLES (CONTINUED)

- **Education level** (can indicate financial well-being – also high stress)
- **Occupation**
- **Housing and physical safety**
- **Family and Community Support** systems
- **Environment**
- **Lifestyle differences**



INTERVENTION OPPORTUNITIES

- Prevention
- Health self-management
- Identify disease risk, diagnosis, progression
- Treatment response
- Monitoring, Self-care and Care giving



Diabetes

OVERALL U.S.

About 20.8 million Americans or 7% of the population (blended rate includes high risk populations)

Diabetes Minority Mortality

The leading cause of death in the US for [combined] minorities (African Americans, Native Americans, Alaska Natives, Asian Americans, Pacific Islanders, Hispanics and Latinos).

Source: Centers for Disease Control, 2006



DIABETES: Minorities and special population prevalence is disproportionately high compared to white populations

15.2% Native Americans, Alaska Natives (118K) ages 20 + years.

13.3% Black non-Hispanic (3.2M) ages 20 + years

9.5% Hispanic (2.5M), calculated Mexican American prevalence and extrapolated to the total Hispanic/Latino population (which is actually quite variable) aged 20 + years

8.7% White, non-Hispanic aged 20 years or older



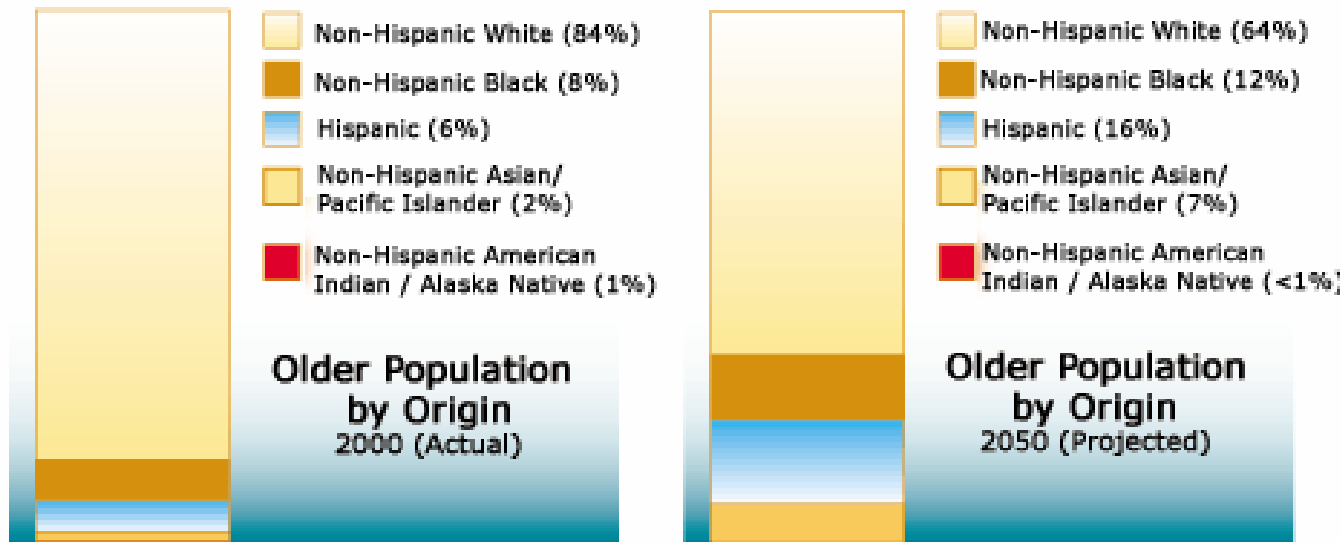
A Diverse Aging Society Requires Major Shifts

Aging baby boomer are being joined by the added dynamic of a racially and ethnically diverse, population of disparate health status and needs

- Health and Medical Policy
- Applied Health Services Research
- Discovery and Innovation in Self-Care, Prevention and
- Medical Treatment
- System organization, delivery and payment
- Patient-centered, non-institutional care giving and service
- Systems of Professional and Institutional responses



The percentages reflect a comparison of chronic disease prevalence in older white and minority populations between 2000 and the year 2050.



Source: National Institute on Aging, 2006



PROBLEM

No national health data warehouse using a geographical (geo-coded) reference point to stratify the ***prevalence of diabetes for minorities***



SOLUTION

The Diabetes Atlas (D-ATLAS)

- Online interacting mapping tool (NMQF web portal)
- Testing adoption for use in local community initiatives
- Advisory Board of non-profit advocacy organizations (e.g. ADA, AAFP etc) licenses to use
- Graphic depictions of ***Type 2 Diabetes Prevalence by ZIP-code*** (by US, state, congressional district, and state legislative district).
- Supported in part by an unrestricted grant from Amylin Pharmaceuticals and Eli Lilly and Company



SOLUTION (CONTINUED)

- US ZIP-code level diabetes prevalence (by sub-groups, age)
- STATE ZIP-code level diabetes prevalence maps reflect Health Disparity Zone's (HDZ's)
- RACIAL, ETHNIC prevalence (over 18)



DIABETES ATLAS (D-ATLAS): Mapping Prevalence

- The Diabetes Atlas (D-ATLAS) is one of several active initiatives currently being conducted through the Forum focused on minority health issues.
- Zip-code level mapping produces Health Disparity Zones (HDZs) -- minority population aggregations
- D-ATLAS maps are NOT based on county (e.g. all CDC), SMSA or HMA (Dartmouth Atlas Hospital Market Areas because methods do not accurately reflect minority population clustering



D-ATLAS drawn from comprehensive NMQF database

- Links vital demographic statistics, hospital discharge data, clinical laboratory values, and other data elements from one centralized data warehouse.
- Synthesizes data to zip code levels and then ratchets up to state legislative districts, Congressional districts, state and national levels.



SOFTWARE TOOLS

The D-ATLAS was created with ArcSDE.9.1 Install, ArcSDE SQL Server (ESRI), Coldfusion (Adobe), and Standard Microsoft SQL Server 2005 software.



D-ATLAS COHORT VIEW

- Gender
- Race/ethnicity (white non-Hispanic, black non-Hispanic, Hispanic, and Other), in the process of adding Native American (Indian Health Service) data
- Age (18-49, 50-64, over 65)
- *5- or 10-year band analysis can provide a complete picture of diabetes prevalence within and across age groups

*Independent of D-ATLAS tool



The D-ATLAS

- Creates color-coded maps that graphically depict diabetes prevalence
- Current version being tested by sponsoring Advisory Board and non-profit advocacy groups implementing community programs with an NMQF web site link (www.nmqf.org), password protected
- D-ATLAS will be updated periodically as new data become available.



NMQF

[■ Authorized Users](#)[■ Atlas User Registration](#)[■ Atlas Login](#)

Eligibility for Access to the Atlases

The atlases and the maps produced by the NMQF database are available for exclusive use by advocacy groups and similar non-profit organizations; government employees, members of local and national judicial, executive and legislative branches and their aides ("Policymakers").

Exclusive use of the atlases will be ensured through the National Minority Quality Forum maintenance of password-protected links from the NMQF web site and maintaining strict control of access to passwords that include only those Authorized Users.

By using any part of the atlases you must ensure that you, your organization, or place of employment meet the qualifications of the defined category of "Authorized Users".



■ Overview

■ Diabetes Atlas Advisory Board

■ Diabetes Resources

■ Disclosure Statement

■ **Diabetes Atlas Homepage**

Member Organizations of the Diabetes Atlas Advisory Board

A Diabetes Atlas Advisory Board has been constructed to provide counsel on the design of the D-ATLAS, the functionality and capability of the D-ATLAS, the educational resources on diabetes included in the D-ATLAS, and the activities related to the promotion of the D-ATLAS. Members of the Diabetes Atlas Advisory Board include representatives from the following organizations:

American Academy of Family Physicians (AAFP)

American Academy of Nurse Practitioners (AANP)

American Academy of Physician Assistants (AAPA)

American Association of Diabetes Educators (AADE)

American Diabetes Association (ADA)

Juvenile Diabetes Research Foundation (JDRF)

NAASO, The Obesity Society

National Black Nurses Association (NBNA)

The Endocrine Society

The National Hispanic Medical Association (NHMA)

National Hispanic Council on Aging (NHCOA)



Diabetes Atlas

[■ Overview](#)[■ Diabetes Atlas Advisory Board](#)[■ Diabetes Resources](#)[■ Disclosure Statement](#)[■ Diabetes Atlas Homepage](#)

Create a National Diabetes Prevalence Map

To create a National Diabetes Prevalence Map, select a demographic category from the list below. Once you have selected a category, click the Submit button to create the prevalence map.

Demographic Categories



Diabetes Atlas

[■ Overview](#)[■ Diabetes Atlas Advisory Board](#)[■ Diabetes Resources](#)[■ Disclosure Statement](#)[■ Diabetes Atlas Homepage](#)

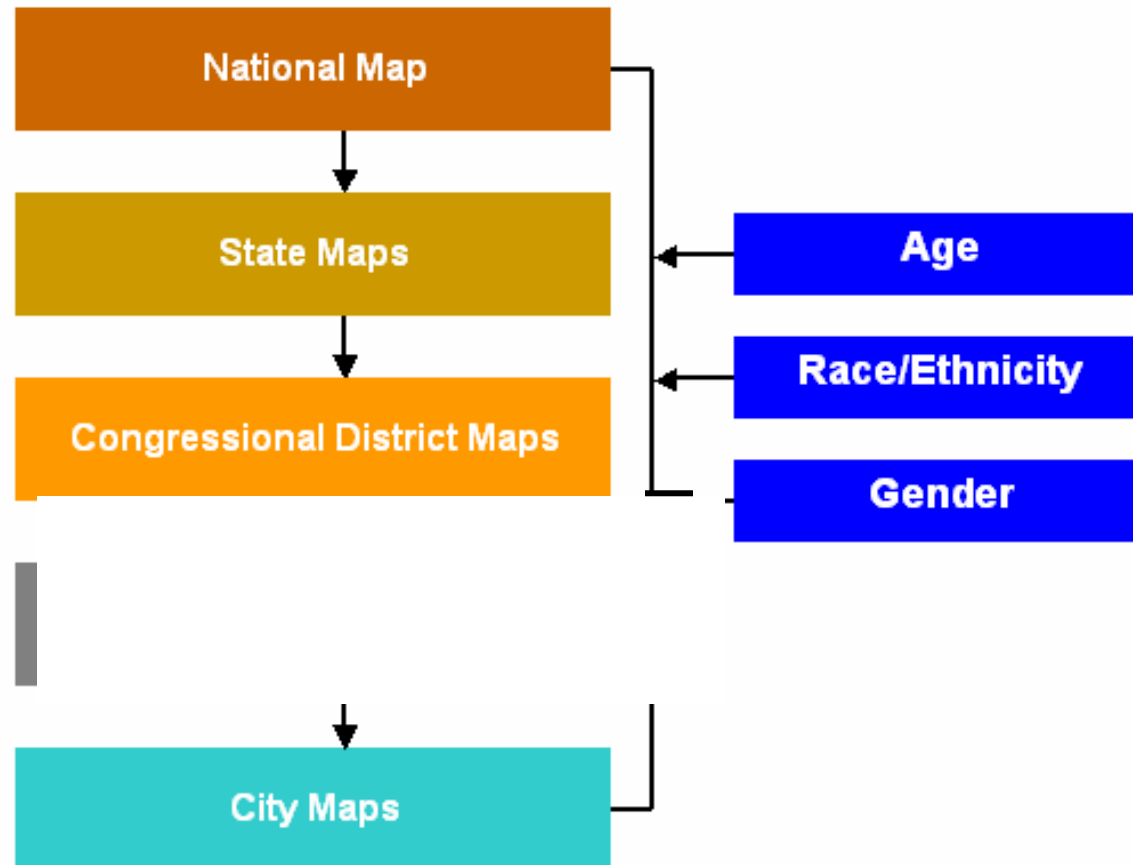
Overall
Overall Prevalence in Males
Overall Prevalence in Females
Overall Prevalence in White Non-Hispanics
Prevalence for Black Non-Hispanics
Prevalence for Hispanics
Prevalence for Other
Age Group 18 - 49
Age Group 50 - 64
Age Group 65+

Diabetes Prevalence

Select a demographic category from the list
and click the Submit button to create the prevalence



D-ATLAS Conceptual Model





- Overview
- Diabetes Atlas Advisory Board
- Diabetes Resources
- Disclosure Statement
- **Diabetes Atlas Homepage**

Resources on Diabetes

[American Academy of Family Physicians \(AAFP\)](#)

[American Academy of Nurse Practitioners \(AANP\)](#)

[American Academy of Physician Assistants \(AAPA\)](#)

[American Association of Diabetes Educators \(AADE\)](#)

[American Diabetes Association \(ADA\)](#)

[American Obesity Association \(AOA\)](#)

[Juvenile Diabetes Research Foundation \(JDRF\)](#)

[National Black Nurses Association \(NBNA\)](#)

[National Diabetes Education Program](#)

[National Diabetes Information Clearinghouse](#)



Understanding the color-coded maps

The prevalence of diabetes is an estimate of the proportion of the population known to have type 2 diabetes based on response to the question, "Has your doctor ever told you that you have diabetes?" from the 2005 Behavioral Risk Factor Surveillance System (BRFSS - conducted by the CDC).

Percentage of the 2005 Population Diagnosed with diabetes

1.47 - 3.35%

3.35 - 5.04%

5.04 - 6.74%

6.74 - 8.44%

8.44 - 10.14%

10.14 - 11.84%

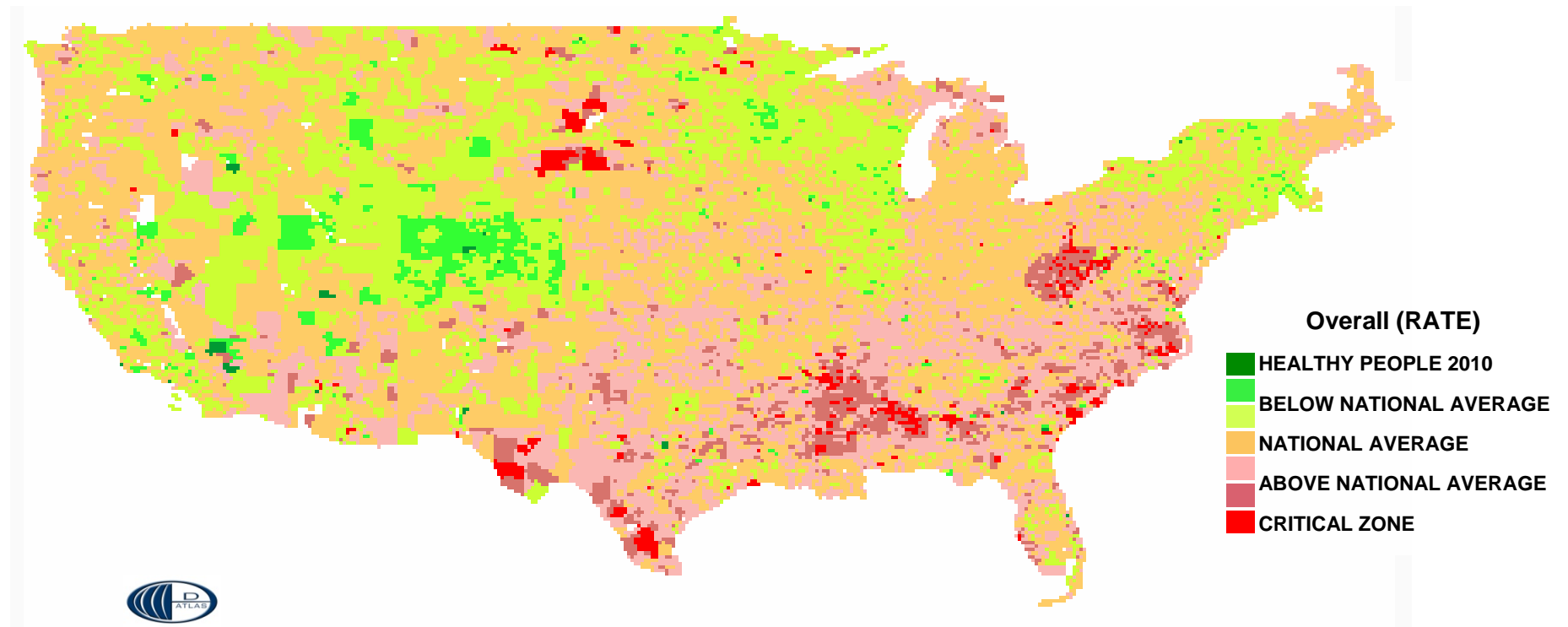
11.84 - 18.86%

Healthy People 2010 (<http://www.healthypeople.gov/>) is a set of health objectives for the Nation to achieve over the first decade of the new century. The Healthy People 2010 target diabetes prevalence suggests that only 2.5% of the US population will be diagnosed with diabetes in that year. The zip codes shaded darkest green (1.47 – 3.35%) are more than 2.5 standard deviations* below the current national average of prevalence, within which the Healthy People 2010 target falls.

The National Average is the average of the estimated prevalence of diabetes across all zip codes in the United States. For 2005, the national average is estimated to be 7.42%. The average of diabetes prevalence in just those zip codes that are composed primarily of minority populations is 8.64%.

The Critical Zone, or the zip codes shaded deep red, have estimated diabetes prevalence of more than 2.5 standard deviations above the national average or 11.84% - 18.86%.

National Diabetes Prevalence Map

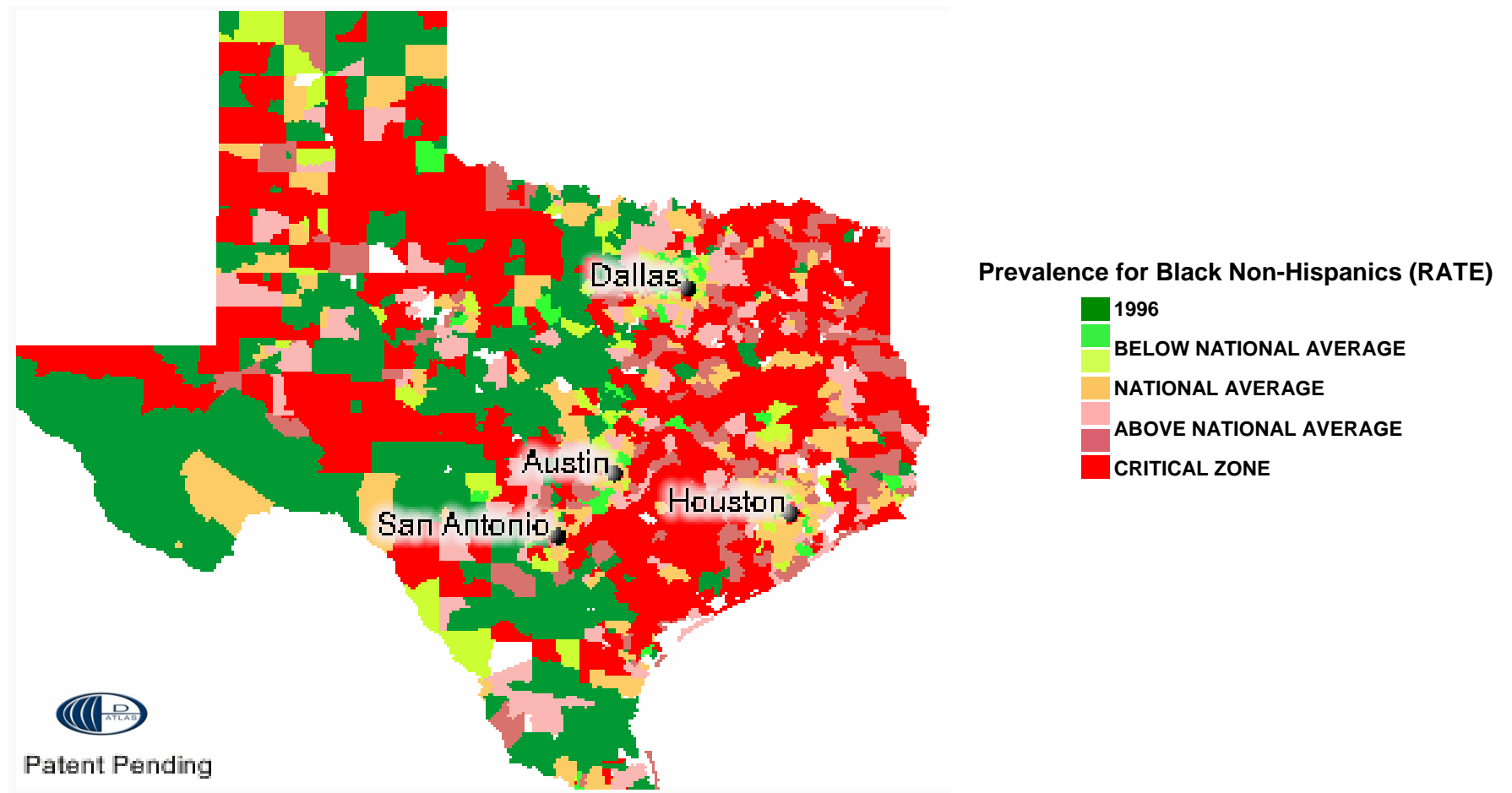


Patent Pending



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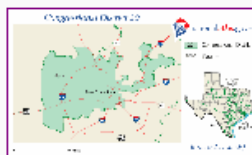
Diabetes Prevalence Map for the State of TX: BLACK NON-HISPANICS



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Congressional District Maps

Click on the image below
to view a congressional district index map

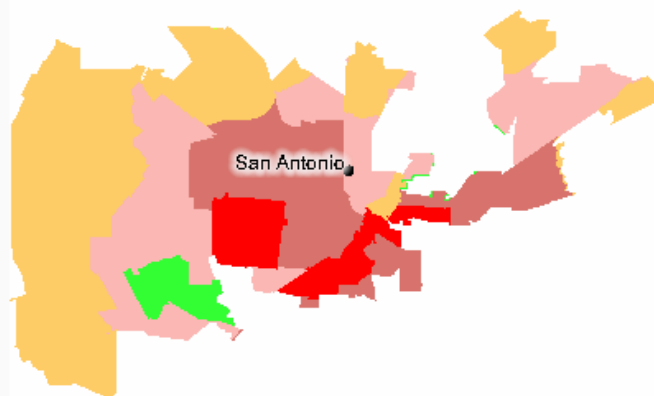


Congressional Representative

Charles A. Gonzalez, Texas, District 20
327 CHOB Washington, D.C. 20515-4320
727 East Durango Blvd., B-124 San Antonio, TX 7820
www.house.gov/qonzalez



Diabetes Prevalence Map for the State of TX Congressional District 20 - Overall (RATE)



Patent Pending

Overall (RATE)

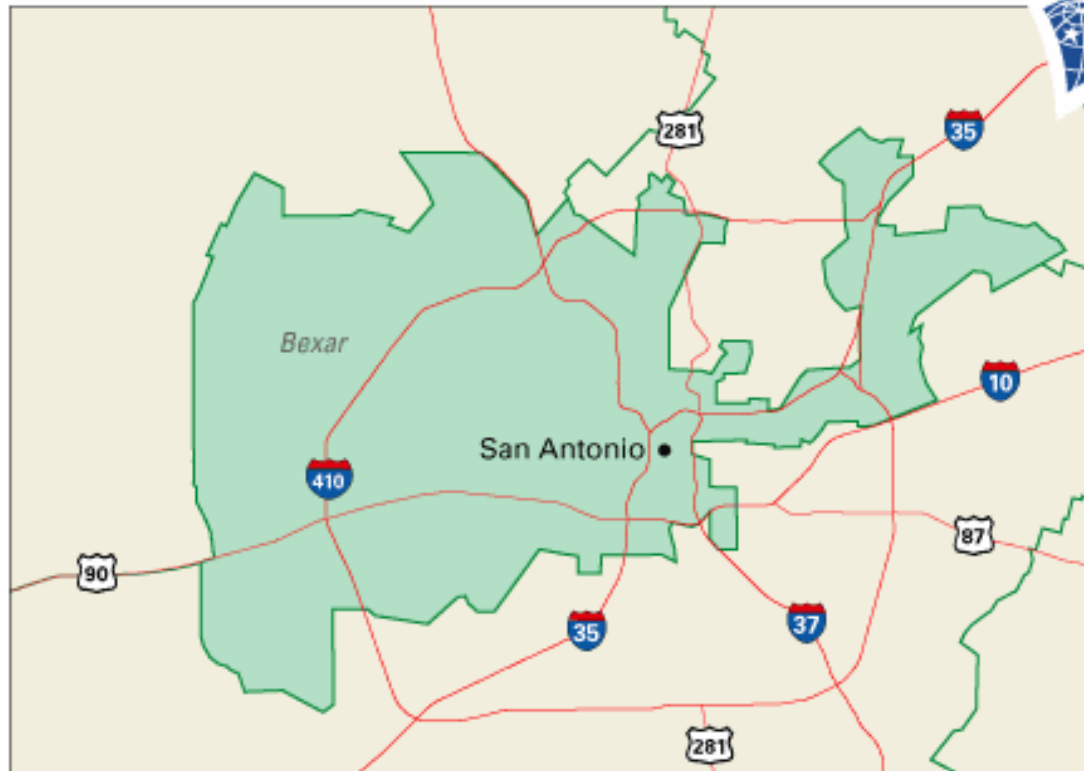
- HEALTHY PEOPLE 2010
- BELOW NATIONAL AVERAGE
- NATIONAL AVERAGE
- ABOVE NATIONAL AVERAGE
- CRITICAL ZONE

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Congressional District 20



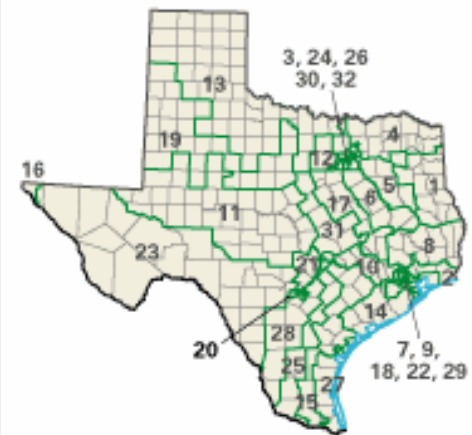
0 5 10 Miles



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20 Congressional District

Bexar County



Texas (32 Districts)



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Welcome and thank you for visiting the new and improved website for the 20th Congressional District of Texas. We have created a new website to enhance the information available to constituents. I hope you find it helpful and easy to use, and that you return often. As always, if I can ever be of assistance, please feel free to contact my office in San Antonio or in Washington, DC.

Sincerely,

Charlie Gonzalez

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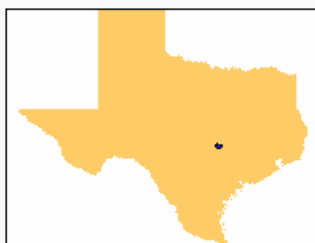
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Legislative District Maps

State Index Map

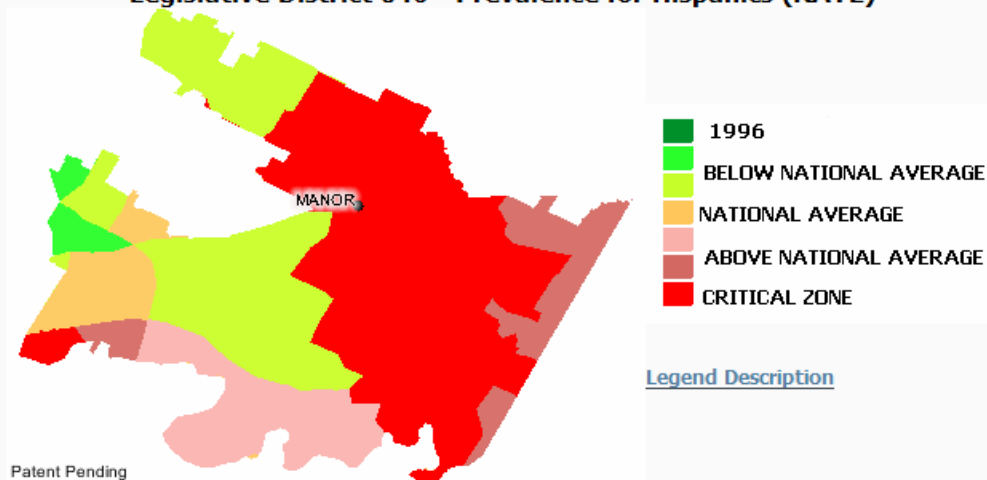


Legislative Representative



Dawwna Dukes, Texas, District 46
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(512) 463-0506
<http://www.house.state.tx.us/members/email.php?dist=46&rep=dawwna.dukes>

Diabetes Prevalence Map for the State of TX Legislative District 046 - Prevalence for Hispanics (RATE)



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Congressional District 53



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53 Congressional District

San Diego County



California (53 Districts)



Congresswoman Susan A. Davis

Representing the 53rd District of California

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Thank you for visiting my official congressional Web site. It is truly an honor to represent the people of the 53rd District in the House of Representatives. This Web site is just one of many ways that you and I can keep in touch.

I hope that this Web site is helpful to you. Enjoy.

[Take my online survey on the environment!](#)

Latest Press Releases

[September 27, 2006 — Congresswoman Susan Statement on the Navy Broadway Complex Redevelopment Proposal](#)

[September 27, 2006 — Congresswoman Susan Davis Introduces Veterans Entrepreneurship Legislation](#)

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Upcoming Events

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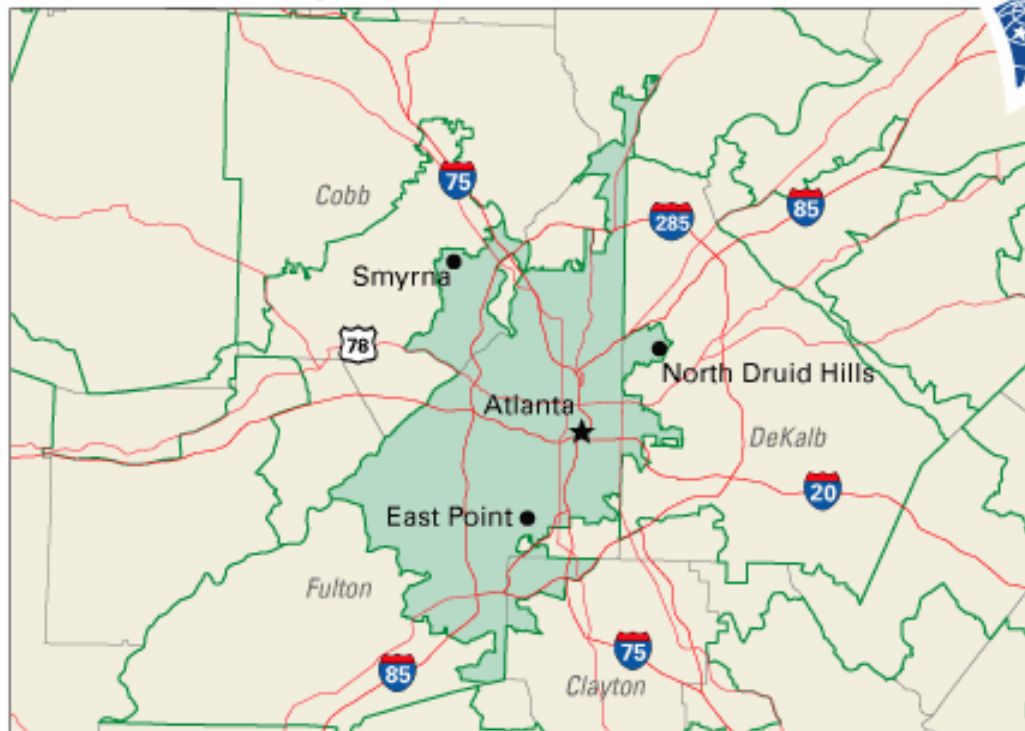
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Congressional District 5



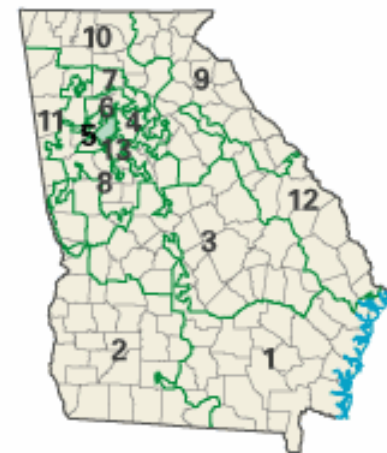
0 10 20 Miles



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5 Congressional District

Fulton County



Georgia (13 Districts)



Congressman John Lewis

Georgia's 5th Congressional District



RECENT NEWS

Tuesday, October 17, 2006

[Voting Rights Act](#)

[Rep. John Lewis Says Ads Corrupt King Legacy](#)

September 22, 2006 - "The radio ads issued by the National Black Republican Association," said Rep. Lewis, "claiming that Martin Luther King Jr. was a Republican are deceptive and misleading."

[Rep. Lewis Says Katrina And March On Washington Highlight Problems Of race And Class](#)

August 29, 2006 - America remembered two pivotal moments in its history this week, the 43rd anniversary of the March on Washington for Jobs and Justice (August 28, 1963) and the first year since the Gulf Coast's devastation by Hurricane Katrina (August 29, 2005), with particular concern for the continued debilitation of one of the world's great cities—New Orleans. The coincidence of these defining moments in American history highlights the consistent relevance of the Civil Rights Movement and the lingering challenges this nation must face.

[Rep. John Lewis Calls For Peace In Middle East](#)

July 28, 2006 - Rep. John Lewis, a long-time proponent of non-violence, called for peace in all Middle East conflicts. Rep. Lewis is more than an advocate for non-violence, he practiced non-violent resistance during the Civil Rights Movement, was arrested and jailed over 40 times and was beaten by police during the Freedom Rides and several non-violent protests against legalized segregation and discrimination.

Visit
House Democrats.gov

Currently, the U.S. Debt is estimated at:

\$8,516,025,371,087

Since you first logged on to the Congressmen Lewis' site, the public debt has increased by:

\$793,319,842,038

Interest accumulated since you first logged on:

\$446,122,034,274

Your share of today's public debt is:

\$30,306



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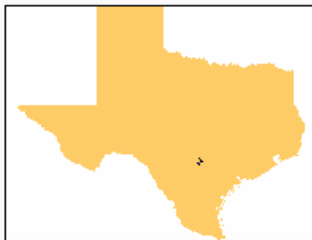
The Issues

Multimedia

5th District

Legislative District Maps

State Index Map

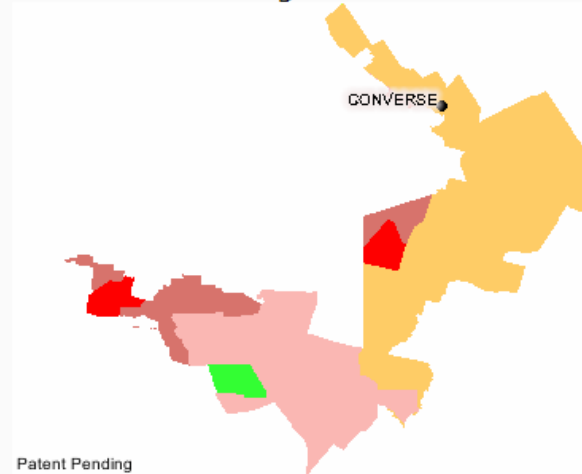


Legislative Representative



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<http://www.house.state.tx.us/members/email.php?dist=119&rep=robert.puente>

Diabetes Prevalence Map for the State of TX Legislative District 119 - Overall (RATE)



Patent Pending

Overall (RATE)

- HEALTHY PEOPLE 2010
- BELOW NATIONAL AVERAGE
- NATIONAL AVERAGE
- ABOVE NATIONAL AVERAGE
- CRITICAL ZONE

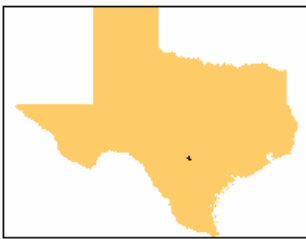
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Legislative District Maps

State Index Map

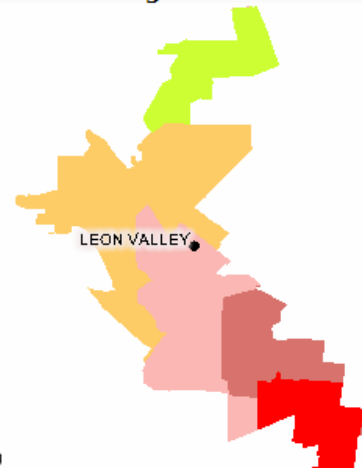


Legislative Representative



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<http://www.house.state.tx.us/members/email.php?dist=125&rep=joaquin.castro>

Diabetes Prevalence Map for the State of TX
Legislative District 125 - Overall (RATE)



Overall (RATE)

- HEALTHY PEOPLE 2010
- BELOW NATIONAL AVERAGE
- NATIONAL AVERAGE
- ABOVE NATIONAL AVERAGE
- CRITICAL ZONE

Patent Pending

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Additional ATLAS'S

-
- Chronic Kidney Disease (CK-ATLAS), End Stage Renal Disease (ESRD) Incidence
 - HIV AIDS
 - Obesity
 - Cardiovascular Disease
 - Alzheimer's Disease



Summary

- Health disparities exist in almost all minority populations.
- The number of older adults will increase exponentially over time in most of these groups.
- The D-ATLAS is an online tool that can, for the first time, allows community leaders to graphically illustrate where the prevalence of type 2 diabetes exists by race/ethnicity, gender, and age.



Thank You!

For more information please contact:

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