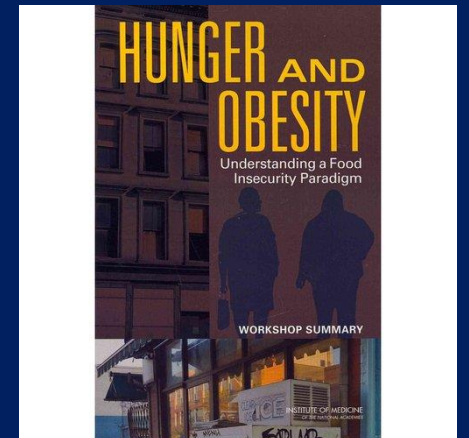


# Diabetes, Obesity & Food insecurity

SUSAN J. PERRY, PHD, CDE, LPCC

PAM ROY, EXECUTIVE DIRECTOR, FARM TO TABLE,

COORDINATOR FOR NEW MEXICO FOOD AND AGRICULTURAL  
POLICY COUNCIL



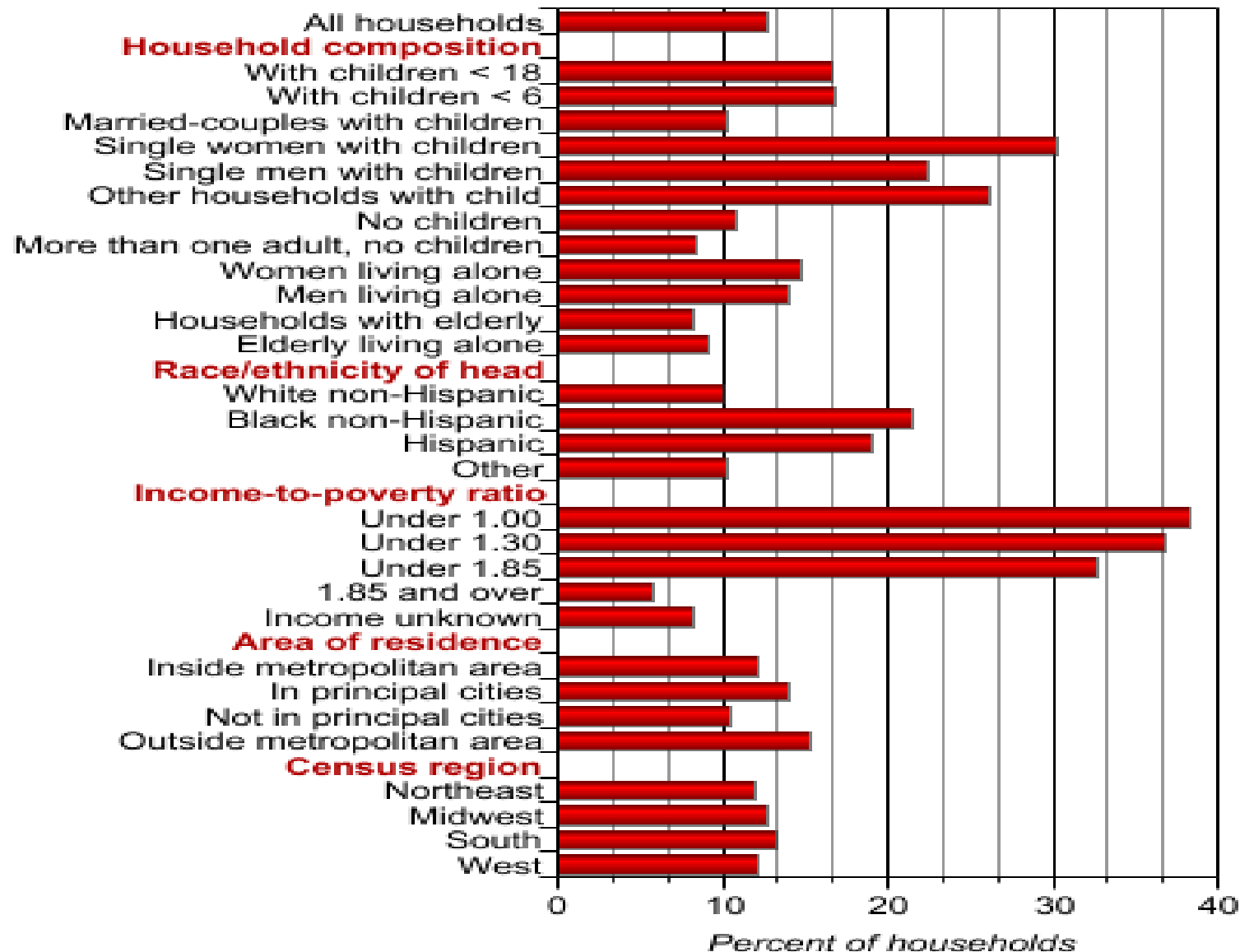
# Objectives

- ▶ Review data that shows a link between food insecure people, obesity and type 2 diabetes.
- ▶ Discuss physiological and behavioral issues that compound the problem that leads to diabetes
- ▶ Implications for health care professionals and others
- ▶ Resources and Responses in New Mexico

# Food Insecurity vs Hunger

- ▶ Hunger-Feeling hunger—the uncomfortable physical feeling that accompanies lack of food—is neither necessary nor sufficient to be considered food-insecure. physical sensation
- ▶ Food insecurity: Absence of “ability to have access to sufficient, safe, nutritious food to maintain a healthy and active life at all times”. Includes physical and economic access to food that meets people's dietary needs as well as their food preferences. (WHO, 1996)

## Prevalence of food insecurity, 2015

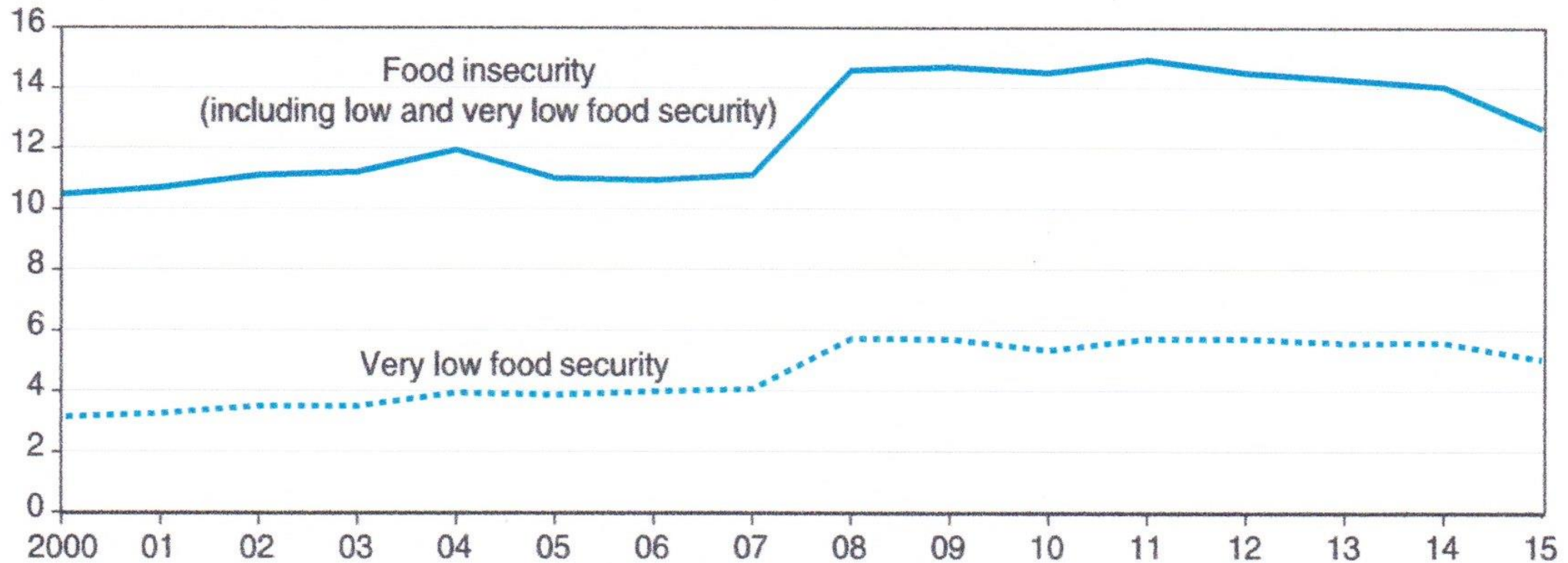


US

Source: Calculated by ERS, USDA, using data from the December 2015 Current Population Survey Food Security Supplement.

## Prevalence of food insecurity and very low food security in 2015 is down from 2014

Percent of households



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey Food Security Supplement.

# USDA 2015

- ▶ 12.7% US Households are food insecure (42.2 million people)
- ▶ 5.0% VERY food insecure
- ▶ 3.0 million households unable at times during the year to provide adequate nutritious food for their children

(USDA Economic Research Service, October 2016)

- ▶ 15% of pts with private insurance & almost 1:5 out of control people with diabetes with some college education were food insecure  
(Berkowitz et al, DM Care, 2013)

# New Mexico hungry households:

- ▶ 83% live in poverty
- ▶ 53% have at least 1 person in household who has not worked for 12 months or more
- ▶ 59% have to choose between paying for medicine or medical care and food in the past year
- ▶ 57% use SNAP benefits
- ▶ 68% already plan to obtain food thru Road Runner Food Bank and network partners



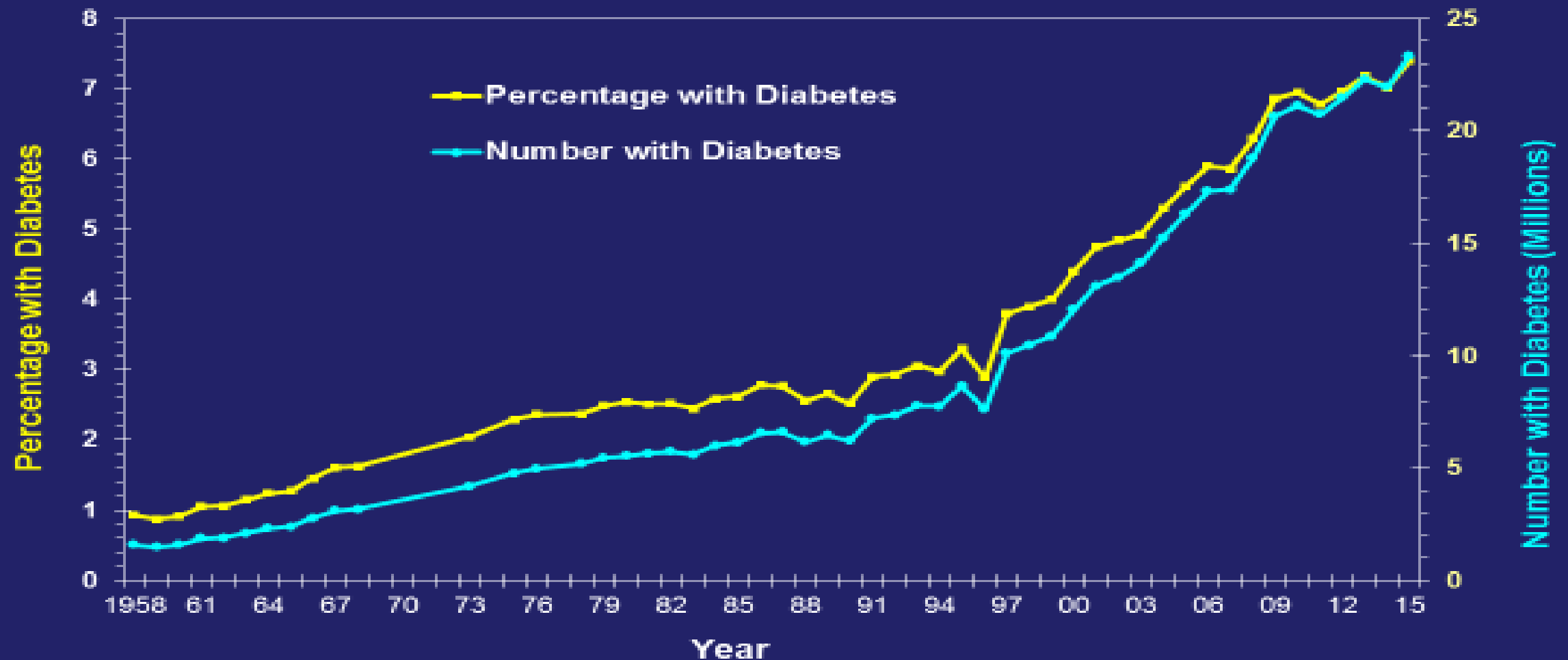
# How Do We Compare With the U.S.?

In 2014, the top five states with the highest rate of food-insecure children under 18 were:

- Mississippi
- New Mexico
- Arizona
- Alabama
- Arkansas



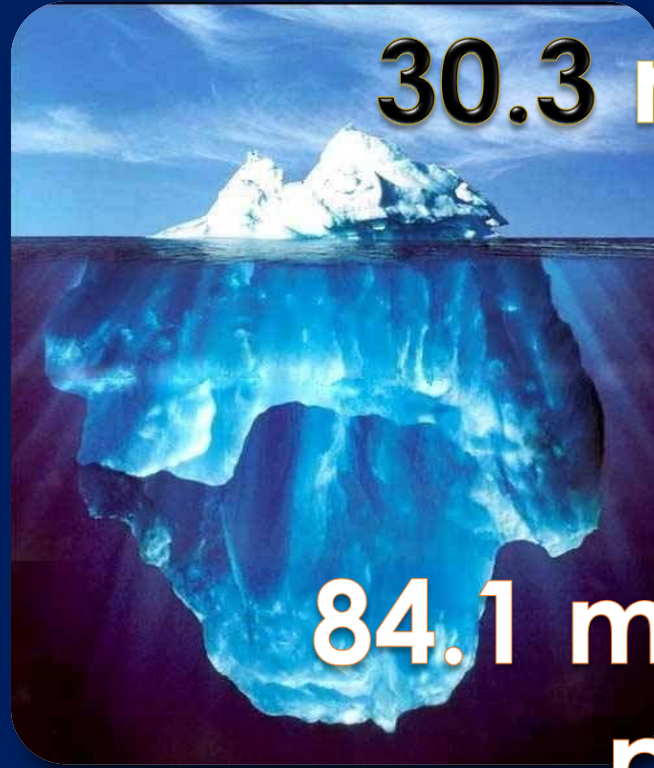
# Number and Percentage of U.S. Population with Diagnosed Diabetes, 1958-2015



CDC's Division of Diabetes Translation, United States Diabetes Surveillance System  
available at <http://www.cdc.gov/diabetes/data>



# Prevalence US



**30.3 million diabetes**

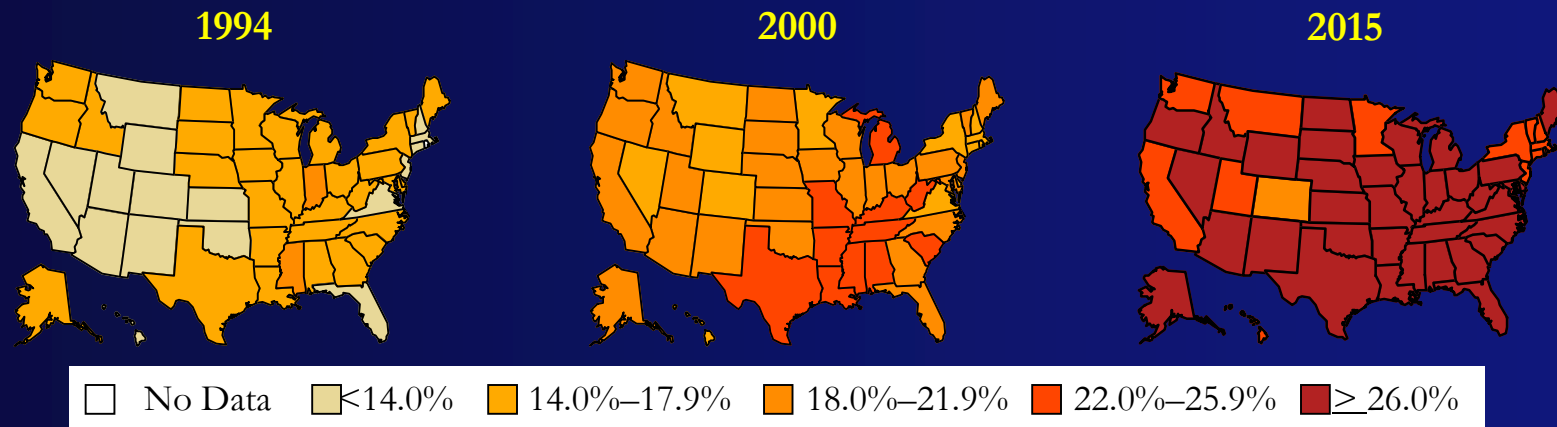
**84.1 million adults with  
prediabetes**

# Overall Numbers, Diabetes and Prediabetes

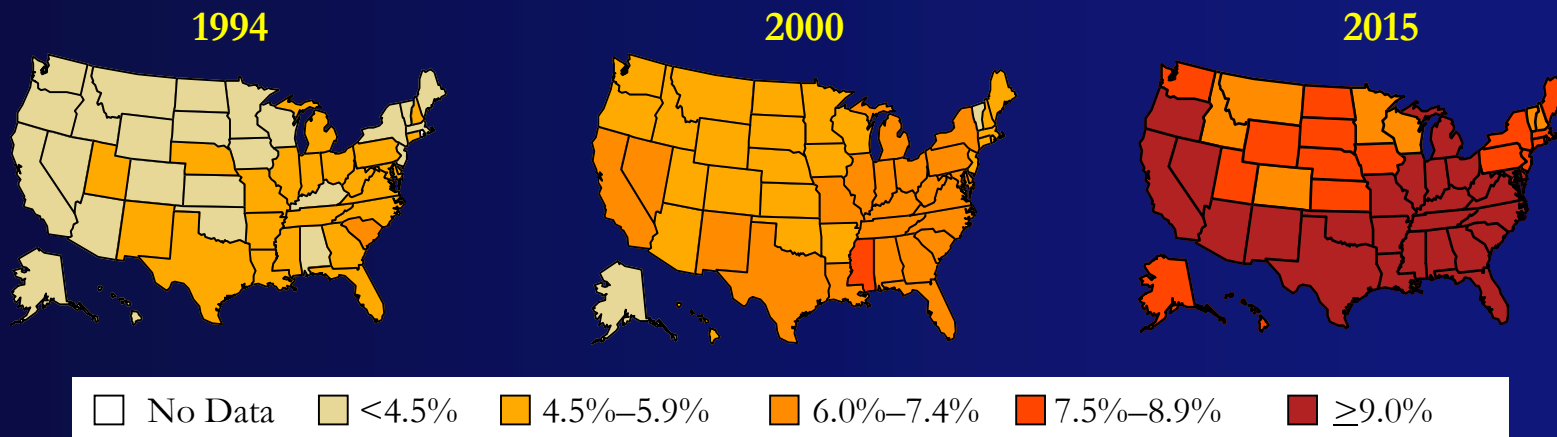
- ❖ Prevalence: In 2015, 30.3 million Americans, or 9.4% of the population, had diabetes.
- ❖ Approximately 1.25 million American children and adults have type 1 diabetes.
- ❖ Undiagnosed: Of the 30.3 million adults with diabetes, 23.1 million were diagnosed, and 7.2 million were undiagnosed.
- ❖ Prevalence in Seniors: The percentage of Americans age 65 and older remains high, at 25.2%, or 12.0 million seniors (diagnosed and undiagnosed).
- ❖ New Cases: 1.5 million Americans are diagnosed with diabetes every year.
- ❖ Prediabetes: In 2015, 84.1 million Americans age 18 and older had prediabetes.
- ❖ Deaths: Diabetes remains the 7th leading cause of death in the United States in 2015, with 79,535 death certificates listing it as the underlying cause of death, and a total of 252,806 death certificates listing diabetes

# Age-adjusted Prevalence of Obesity and Diagnosed Diabetes Among US Adults

## Obesity (BMI $\geq 30$ kg/m<sup>2</sup>)



## Diabetes



CDC's Division of Diabetes Translation. United States Surveillance System available at  
<http://www.cdc.gov/diabetes/data>



# Prevalence New Mexico (adults $\geq 18$ yrs)



233,000  
Diabetes

635,000 prediabetes

# New Mexico diabetes prevalence and food insecurity

County	Food Insecurity %*	DM prevalence %**
New Mexico	17.2	10.5
Bernalillo	15.4	7.4
Luna	20.3	10.6
McKinley	27.2	13.6
Cibola	19.7	13.4
Sierra	20.2	10.1
Roosevelt/San Juan	19	9.4/10
Chavez	14.7	9.2
Los Alamos	15.1	7

\* 2017 Feeding America. \*\*CDC (USA.gov)



# NHANES- low income population n=3871; adults $\geq 55$ years of age

- ▶ Associations between hypertension, hyperlipidemia and diabetes (self report, clinical diagnosis) and food insecurity
- ▶ Food secure households Diabetes prevalence 16.8% vs 25.2% Food insecure household (2017)

*Gerontology & Geriatric Medicine 2017*

- ▶ Food insecurity associated with self report of hypertension (ARR 1.20 [1.04-1.38])
- ▶ Food insecurity associated with self report of hyperlipidemia (ARR 1.30 [1.09-1.55])

*Seligman et al, J Nutrition, 2010*



# Food insecurity and Diabetes

- ▶ Even after adjusting for socioeconomic status, food insecure adults 48% more likely to have diabetes. (Seligman & Schillinger 2010 N Engl J Med. 2010;363:6–9.)

# NHANES- low income population n=5094, 18-65 years of age

## Inadequate Disease control

	B/P > 140/90	TC >200.3 or LDL > 140.4	A1C > 7%
Food Secure	34.8%	73.8%	*48.7%
Food insecure	34.3%	75.6%	*69.5%

\*ARR 1.35 [1.05-1.74]

# NHANES

n = 2557 with DM (cross sectional)

- ▶ > 12 % food insecure
- ▶ Association of poor metabolic control and food insecurity
  - ▶ A1 C > 9% (27% vs 13%)  $p < .001$
  - ▶ LDL > 100 (68.8% vs 49.8%)  $p = .002$
  - ▶ No significant association with blood pressure

# Relationship between Food Insecurity, Obesity & Diet-Related Disease (Lariaia, 2013)

- ▶ Can coexist in the same individual, family, and community (i.e. Mississippi, highest food insecurity rate (22%) and obesity rate (34%) in 2010.
- ▶ Similar risk factors (limited resources; lack of access to healthy, affordable foods; cycles of deprivation & overeating; high levels of stress )
- ▶ Low-income households and communities disproportionately affected.
- ▶ Risk of obesity higher for food insecure women & children

# Food Insecurity in Relation to Changes in HemoglobinA1c, Self-Efficacy, and Fruit/Vegetable Intake During a Diabetes self management Educational Intervention (3 arms) n=665

Measure	Baseline		End of Study	
	Food Sec	Food Insec	Food Sec	Food Insec
A1C > 9%	21%	32%	19%	*22%
Low self efficacy	21%	47%	15%	*26%
Fruit < 0.35 servings/day	20%	33%	20%	*25%
Vegetables < 1.2 servings/day	22%	31%	23%	30%

# Food insecurity and diabetes

n = 325 (FI), n = 386 (FS) (Seligman, 2012)

- ▶ More likely to report difficulty following diabetes meal plan (64% vs. 49%)  $p < .001$
- ▶ Tobacco Use 33.5% vs 17.1%
- ▶ Experienced higher emotional distress related to diabetes ( $3.9 \pm 1.5$  vs.  $3.0 \pm 1.6$ )  $p < .001$

# Episodic Overconsumption & Underconsumption

- ▶ Food insecurity is cyclical & episodic
- ▶ Monthly food stamps (“The Food Stamp Cycle”) or pay checks
- ▶ Seasonal variation (Nord et al, 2006)
- ▶ Periodic, unforeseen expenditures
- ▶ Food insecure households food insecure 7 months of the year on average



# Food insecurity behaviors

- ▶ Food adequate
  - ▶ Binge eating
  - ▶ Overconsumption
- ▶ During food Shortage
  - ▶ Skipped meals
  - ▶ Decreased calories

# Cyclical eating of food insecure persons and diabetes control

- ▶ Overconsumption
  - ▶ Weight gain
  - ▶ Hyperglycemia
  - ▶ Diabetes out of control
- ▶ Food Shortage
  - ▶ Eat less calories
  - ▶ Overtreatment of low blood sugar
  - ▶ Medication problems
  - ▶ High risk of hypoglycemia

# Food Insecurity and Diabetes: Hypoglycemia

- ▶ Diabetics in community health centers, 38% food insecure (Seligman)
- ▶ 61% of diabetics in an urban, safety net hospital experienced hypoglycemia annually (Nelson)
- ▶ 1/3 of episodes were attributed to the inability to afford food

# Food Insecurity and Diabetes: Hypoglycemia

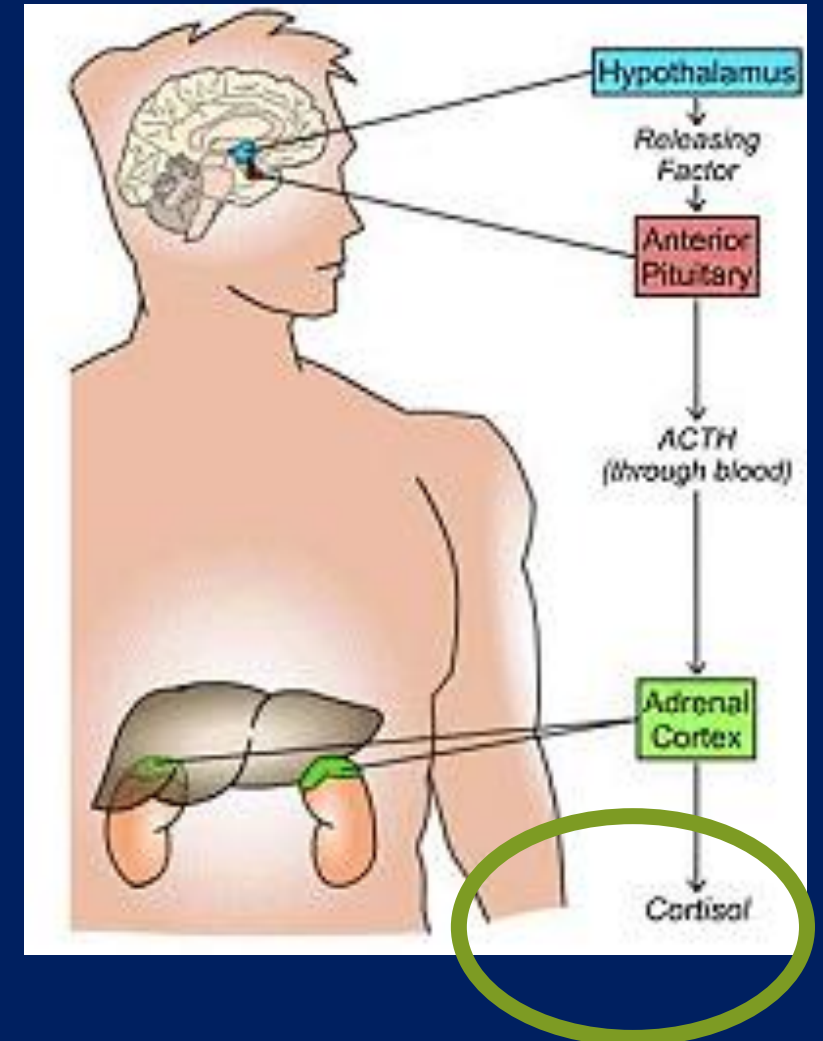
- ▶ More likely to report a hypoglycemic reaction because of an inability to afford food
- ▶ More likely to visit ER due to a hypoglycemic reaction
- ▶ More likely to put off purchasing blood testing supplies so they would have enough money for food

# Food Insecurity and Diabetes: Hyperglycemia

- ▶ Increase in availability of fast food restaurants
- ▶ Increase in exposure to marketing of obesity-promoting products
- ▶ Decrease in physical activity
- ▶ Decrease in access to full service grocery stores
- ▶ Cheaper foods tend to be those that are high fat and high sugar, processed food that contributes to obesity, high blood sugars

# Food insecurity and physiological response

- ▶ Stress-pathway releases cortisol
  - ▶ Cortisol ↑ glucose
- ▶ Desire to consume high energy dense food, altered metabolism
- ▶ Promotes accumulation of visceral fat



# Food insecurity and Stress

## *Chronic Health Problems Among U.S. Adults, by Poverty Status -- 2011*

Poverty status is based on Gallup's best estimate of those in poverty according to the U.S. Census Bureau's 2011 thresholds

	<b>In poverty</b>	<b>Not in poverty</b>	<b>Difference (pct. pts.)</b>
% Depression	30.9	15.8	15.1
% Asthma	17.1	11.0	6.1
% Obesity	31.8	26.0	5.8
% Diabetes	14.8	10.1	4.7
% High blood pressure	31.8	29.1	2.7
% Heart attack	5.8	3.8	2.0
% Cancer	6.3	7.1	-0.8
% High cholesterol	25.0	26.0	-1.0

Jan. 2-Dec. 31, 2011

Gallup-Healthways Well-Being Index

GALLUP®



# Relationship between Food Insecurity and Depression (and diabetes)

- ▶ Increased risk of depression among food insecure mothers (Whittaker et al, Pediatrics, 2006)
- ▶ Causal relationship between household food insecurity and depression and bidirectional (Huddleston-Casas et al Public Health Nutrition, 2008)
- ▶ Depression 2x as common among DM compared with the general population; associated with adverse effects on glycemic control , complications, and higher rates of mortality
- ▶ Depression and type 2 DM bidirectional-depression confers a 60% increased T2D risk (Mezuk et al, Diab Care, 2008; AnPan et al, Arch IM, 2010)

# Food insecurity & depression among adults with diabetes: results from NHANES

- Food insecurity common among adults with diabetes and prediabetes.
- 1 in 3 adults with diabetes experienced food insecurity in past year
- 10% of individuals with diabetes & 8.5% with prediabetes had severe food insecurity in past year
- 20.3% with diabetes and 14.3% with prediabetes had mild food insecurity
- Among those with diabetes: association between food insecurity and depression.
  - May be explained by diet (high fat, high caloric food) , physical inactivity, social and environmental factors.
- Depression 2x as common among DM compared with the general population; associated with adverse effects on glycemic control , complications, and higher rates of mortality

# Food insecurity and Diabetes self management behaviors

- ▶ Self care behaviors
  - ▶ Healthy eating
  - ▶ Physical Activity
  - ▶ Monitoring
  - ▶ Health Coping
  - ▶ Risk Reduction
  - ▶ Medication Taking

# Diabetes self management: Food Insecurity and Healthy Eating

- ▶ Low fruit and vegetable intake
- ▶ High soda intake
- ▶ Increased proportions of total calories from fats and refined carbohydrates
- ▶ Increased salt from processed foods
- ▶ Increased glycemic load
- ▶ Cost of healthy food
- ▶ Access to healthy food
- ▶ What to do with vegetables and other 'foreign' foods

# Diabetes Self Management

## Food insecurity and physical activity

- ▶ Fatigue
- ▶ Poor Sleep
- ▶ Decreased energy
- ▶ DM complications?

# Diabetes self management: Food Insecurity and Monitoring

- ▶ Cost of blood glucose monitoring: Strips, lancets, batteries
- ▶ Fear of blood glucose levels
- ▶ Depression
- ▶ Choice between food and \$\$ for monitoring supplies

# Diabetes self management: Food Insecurity and Healthy Coping

- ▶ Stress Response
- ▶ Depression
- ▶ Hunger and irritability
- ▶ Hyperglycemia symptoms



# Diabetes self management: Food Insecurity and Risk Reduction

- ▶ Risk for hypoglycemia due to cyclical eating
- ▶ Hypos states
- ▶ Inadequate nutrition
- ▶ Safety

# Diabetes self management:

## Food Insecurity and Medication taking

- ▶ Types of medications
- ▶ Cost of medications
- ▶ Safety of medications
- ▶ Refills
- ▶ Co-morbid conditions and interactions
- ▶ Fear

# Food insecurity and glycemic control: symptoms

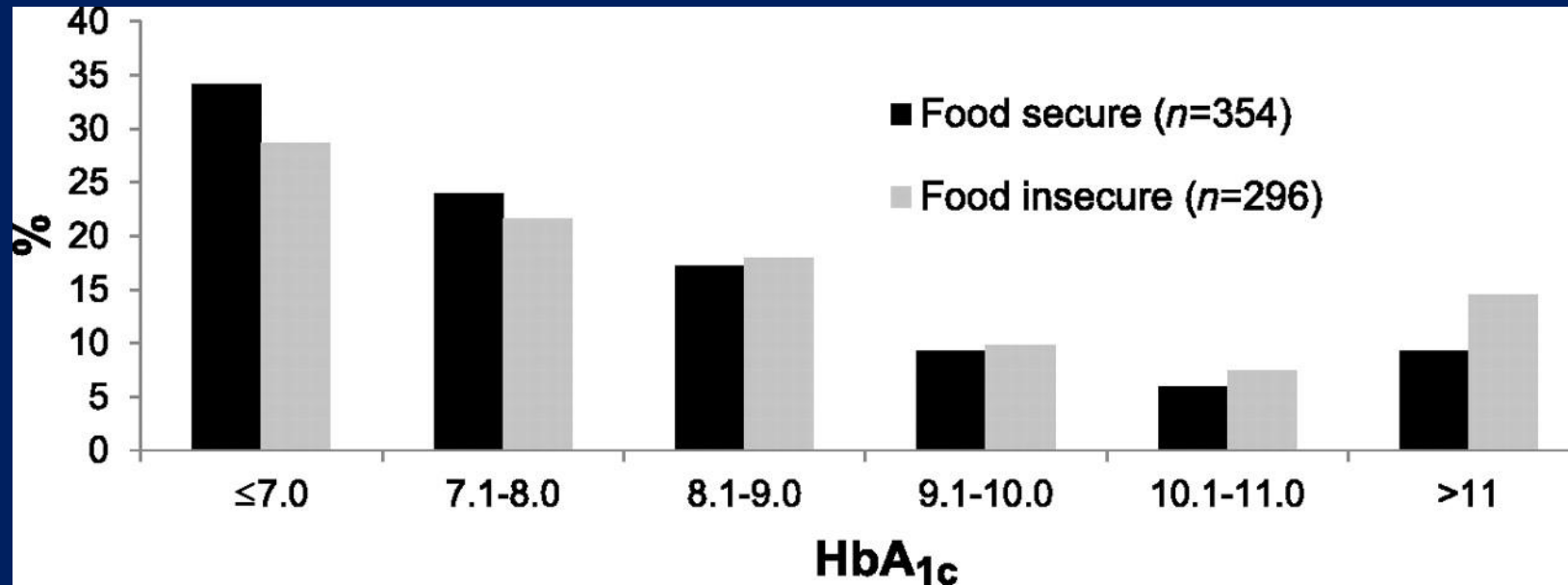
## Hyperglycemia

- ▶ Increased urination and thirst
- ▶ Fatigue
- ▶ Blurry Vision
- ▶ Numbness, tingling in feet
- ▶ Irritability

## Hypoglycemia

- ▶ Shakiness
- ▶ Anxiety
- ▶ Cold Sweats
- ▶ Confusion
- ▶ Hunger

# Association between HbA1c and food security status among patients with diabetes receiving care in safety net clinics (n = 710).



Seligman H K et al. Dia Care  
2012;35:233-238

## Cycle of Food Insecurity & Chronic Disease: Diabetes



# Summary: Food insecurity & diabetes

- ▶ money-saving alterations in dietary intake.
- ▶ compensatory behavioral mechanisms, such as episodic overconsumption during food plenty.
- ▶ high out-of-pocket health care expenditures leaving little money for food.

# Summary: Food insecurity and diabetes

- ▶ Poorer glycemic control may result from:
  - ▶ an inability to manage dietary requirements
  - ▶ reduced ability to afford medications or testing supplies
  - ▶ less aggressive HbA1c targets in the setting of repeated hypoglycemia.
  - ▶ Depression

# Implications for health care professionals (and others)

- ▶ Screen for food insecurity
- ▶ 1) During the last year, did you ever worry whether the food in your house would run out before there was money to get more?,
- ▶ 2) During the last year, was there ever a time when the food in the house just didn't last and there wasn't money to get more?



# ADA Standards of Medical Care for Diabetes-2017-"Tailoring Treatment to Reduce Disparities"

- ▶ "Providers should assess social context, including potential food insecurity, housing stability, and financial barriers, and apply that information to treatment decisions."
- ▶ "Patients should be referred to local community resources when available."
- ▶ Providers should recognize that FI complicates diabetes management and seek local resources that can help patients and the parents of patients with diabetes to more regularly obtain nutritious food."
- ▶ Consider risks of hypoglycemia in medication decisions."

# Implications for health care professionals (and others)

- ▶ Nutritional counseling
  - ▶ Decrease restaurant eating
  - ▶ Purchase frozen veg and fruit or buy when in season
  - ▶ Canned
  - ▶ Non-meat meals
  - ▶ Eating on shoe string budget

# Implications for health care professionals (and others)

- ▶ Address risk for hypoglycemia
- ▶ Sick day rules for decreased food days
- ▶ Medication scheduling and type of medication
- ▶ Referral to community resources

# Implications for health care professionals (and others)

- ▶ Address Risk for hypoglycemia
  - ▶ Review Medications that can cause Hypos
  - ▶ Try to use shorter acting medications
  - ▶ Counsel about small frequent eating

## Table 1. Hunger and Food Insecurity Resources

National Hunger Hotline

1-866-348-6479 (1-866-3-HUNGRY) or  
1-877-842-6273 (1-877-8-HAMBRE) Spanish

Supplemental Nutrition Assistance Program (SNAP)

1-800-221-5689, <http://www.fns.usda.gov/snap>  
Eligibility screening tool: <http://www.snap-step1.usda.gov/fns>

Women, Infants, and Children (WIC)

1-866-348-6479 (1-866-3-HUNGRY) or  
1-877-842-6273 (1-877-8-HAMBRE) Spanish  
<http://www.fns.usda.gov/wic>

Food Distribution Program on Indian Reservations

1-866-348-6479, <http://www.fns.usda.gov/fdd/programs/fdpi>

Senior Farmers' Market Nutrition Program

<http://www.fns.usda.gov/wic/SeniorFMNP/SFMNPcontacts.htm>

Commodity Supplemental Food Program

1-866-348-6479, <http://www.fns.usda.gov/fdd/programs/csfp>

Meals on Wheels

703.548.5558, <http://www.mowaa.org>

Feeding America (a network of food banks across the United States)

<http://feedingamerica.org>

# Selected References

- ▶ “Food Insecurity and its impact on Diabetes Management”;  
<https://www.cdc.gov/diabetes/ndep/training-tech-assistance/webinars.html>
- Berkowitz et al Diabetes Care 36:3093–3099, 2013
- ▶ CDC, diabetes data and trends, 2014
- ▶ Billimek & Sorkin Health Serv Res. December ; 47(6): 2159, 2012
- ▶ Detka et al, 65, 1591.1600Pharmacological Reports, 2013
- ▶ Fitzgerald et al Ethn Dis. 2011;21(3):328–334
- ▶ Laraia, B Adv. Nutr. 4: 203–212, 2013
- ▶ López, & Seligman Diabetes Spectrum 25 (1),2012
- ▶ Lyles et al Diabetes Care 36:1448–1453, 2013
- ▶ Nelson et al, JAMA 1998
- ▶ Nord & Kantor J. Nutr. 136: 2939–2944, 2006.
- ▶ Seligman et al J. Nutr. 140: 304–310, 2010.
- ▶ Seligman et al Diabetes Care 35:233–238, 2012
- ▶ Seligman & Schillinger N Engl J Med. 2010;363:6–9, 2010
- ▶ Seligman, ADA Sci Sessions 2014, San Francisco, 2014



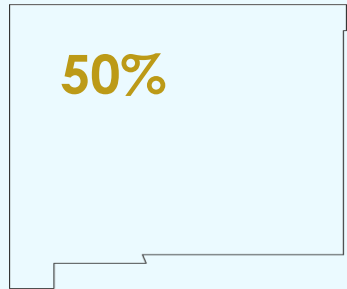
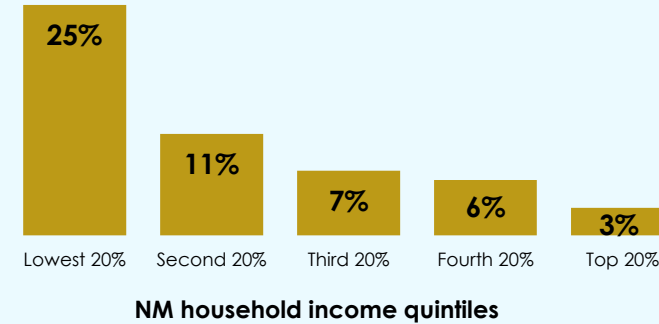
# New Mexico's Economic Backdrop



**28%** of New Mexico's children are food insecure

That's 3 out of every 10 kids

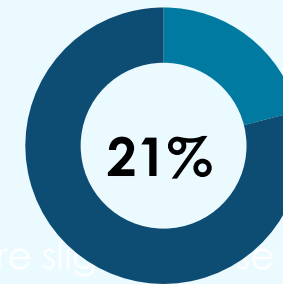
**Low-income families spend a large proportion of their income on food**



**50%**

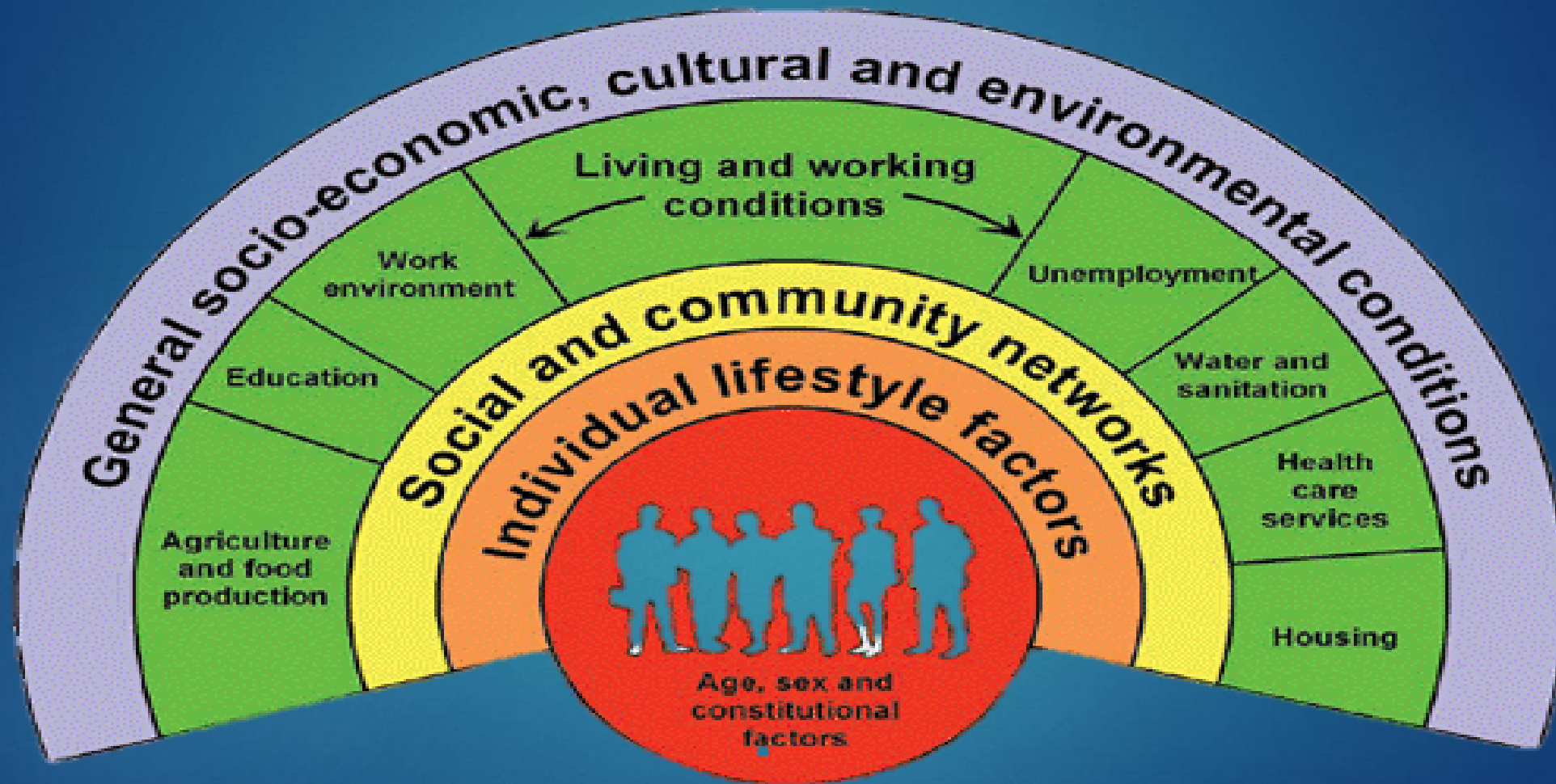
Half of NM is considered a **food desert** but not just rural areas are affected—The Albuquerque metro area is ranked 4<sup>th</sup> in the U.S. in difficulty accessing fresh fruits and vegetables in households with children.

**Only 1 in 5 children & teens in NM eat 5 or more fruit & vegetable servings/day**



Adults fare slightly better at 18%

# Population Health: A Community Effort





# Determinants of Health



# Coming to Terms with Health Inequities

- Limited access to healthy food sources
- Lack of public space, sites for exercise
- Limited transportation options
- Exposure to environmental hazards
- Unsafe neighborhoods
- Poor working conditions
- Health impacts (e.g. chronic stress)
- Inadequate and/or unhealthy housing





# New Mexico Food & Agriculture Policy Council and Local Food Policy Councils Leads the Way

- Building public/private partnerships
- Fostering cross-sector partnerships, and community and regional action groups
- Created to affect to change



# Increasing Healthy Food Access – Innovative Programs In New Mexico

- ❖ In 2015 NM appropriated **\$400,000 for SNAP Double Up Food Bucks (DUFB)**. Future recurring state funds will be able to leverage additional federal USDA funds.
- ❖ SNAP recipients can **use DUFB to match SNAP benefits 1 to 1** at many farmers markets across the state to get more NM grown fresh produce.
- ❖ SNAP benefits added **\$680 million to the NM economy** in 2013 and now NM farmers markets can get a larger share of that.<sup>2</sup>
- ❖ SNAP DUFB can help low-income families better afford a healthier diet, which costs an additional **\$2,200 a year for a family of four** according to a meta-analysis of numerous studies.<sup>3</sup>
- ❖ Program evaluations of similar SNAP voucher and coupon programs at farmers markets across the U.S. have shown that **SNAP transactions usually double and can even quadruple** with these types of healthy food incentive programs.



# Increased Access Through Incentives & Education

WIC & Senior  
Nutrition Programs

SNAP Double Up  
Food Bucks  
Program

Fresh Rx, Fruit & Veggie  
Prescriptions at health  
clinics



# WIC & Senior Farmers' Market Nutrition Programs





# SNAP Double Up Food Bucks

**STRETCH YOUR FOOD DOLLARS AT NM FARMERS' MARKETS**

Get more fruits & vegetables when you use your EBT CARD at farmers' markets

**JUNE 1 - OCT 31**

It's easy with **DOUBLE UP FOOD BUCKS!**

**1 BRING YOUR EBT CARD** to the farmers' market info booth before you shop.

**2 BUY EBT-ELIGIBLE FOODS** at the market with your NM EBT dollars.

**3 WE'LL MATCH WHAT YOU SPEND** with free Double Up Food Bucks.

**YOU SPEND \$2** **WE MATCH \$2**

Use them right away to buy FRESH FRUITS & VEGETABLES grown in New Mexico.

**INFO BOOTH**

**NEW MEXICO GROWN**

Have questions? Call us! (888) 963-4400 or visit [www.doubleupnm.org](http://www.doubleupnm.org)



**EBT TOKENS HERE**

MEXICO FARMERS MARKETING ASSOCIATION

Jose R. Coronado  
Attorney at Law  
575-525-1234  
Criminal Defense  
Auto Accidents

**STRETCH YOUR FOOD DOLLARS: 2**

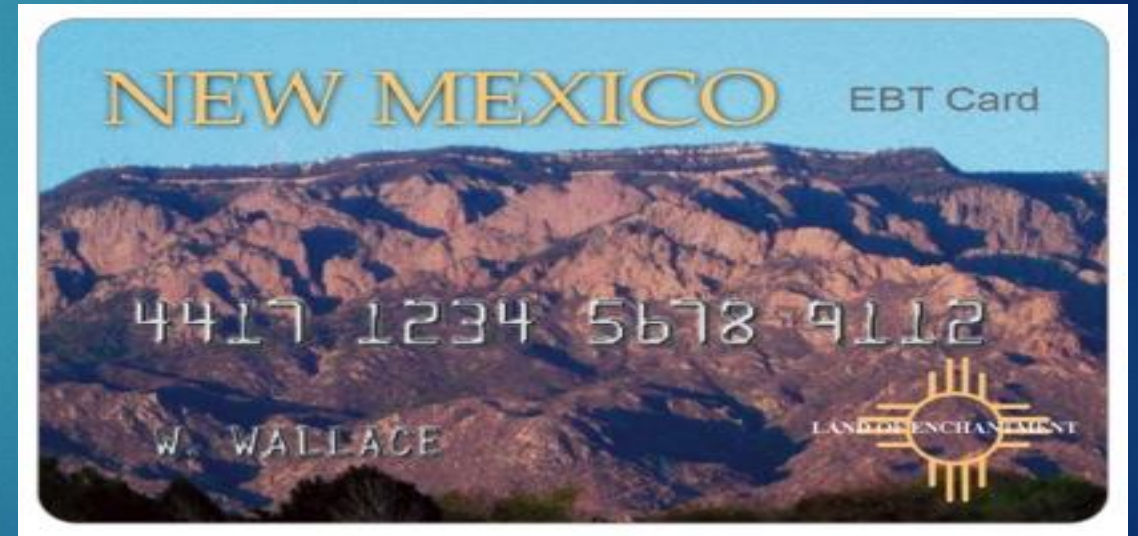
# SNAP Double Up Food Bucks

SNAP purchases are matched 1:1

Markets may decide if they have a daily limit.

DUFB tokens \$2 value each

DUFB tokens only for NM-grown, fresh fruit and vegetables





# SNAP Double Up Food Bucks

Recurring funds will be leveraged with up to \$2.1 million federal USDA grant funds during 2017-2019.



The graphic is a promotional poster for the SNAP Double Up Food Bucks program. At the top, it features a green apple logo with a leaf and a Michigan Bridge Card. The main headline reads "STRETCH YOUR FOOD DOLLARS" in large, bold, white letters on a green background. Below this, an orange banner states: "Get more fruits & vegetables when you use your BRIDGE CARD at farmers markets". A purple circular badge on the right indicates the program runs from "JUNE 1 - OCT 31". The section "HOW IT WORKS" is divided into three parts: 1. "BRING YOUR BRIDGE CARD to the farmers market office or info booth before you start shopping." 2. "Use your Bridge Card dollars to BUY SNAP-ELIGIBLE FOODS at the market." 3. "WE'LL MATCH WHAT YOU SPEND with free Double Up Food Bucks - UP TO \$20, EVERY MARKET DAY." A central circular graphic shows "You Spend \$2" followed by a double arrow pointing to "We Match \$2". Below this, it says "Use them right away or later on, to buy fresh fruits & vegetables grown in Michigan." Placeholder text on the sides reads: "PLACEHOLDER FOR IMAGE OF WOMAN AT INFO BOOTH HOLDING BRIDGE CARD" and "PLACEHOLDER FOR IMAGE OF FARMER WITH SIGN (MICHIGAN GROWN) & BASKET OF PRODUCE".

**STRETCH YOUR FOOD DOLLARS**

Get more fruits & vegetables when you use your **BRIDGE CARD** at farmers markets

**JUNE 1 - OCT 31**

It's easy with **DOUBLE UP FOOD BUCKS!**

**HOW IT WORKS**

**BRING YOUR BRIDGE CARD**  
to the farmers market office or info booth before you start shopping.

Use your Bridge Card dollars to **BUY SNAP-ELIGIBLE FOODS** at the market.

**WE'LL MATCH WHAT YOU SPEND**  
with free Double Up Food Bucks - UP TO \$20, EVERY MARKET DAY.

You Spend **\$2** » We Match **\$2**

Use them right away or later on, to buy fresh fruits & vegetables grown in Michigan.

PLACEHOLDER FOR IMAGE OF WOMAN AT INFO BOOTH HOLDING BRIDGE CARD

PLACEHOLDER FOR IMAGE OF FARMER WITH SIGN (MICHIGAN GROWN) & BASKET OF PRODUCE



# Fresh Rx, Clinic Prescription Programs







## Farm to Cafeteria

Farm to Cafeteria programs create a partnership between local farmers and institutions (schools, senior centers, hospitals, etc.) wherein everyone benefits...farmers get to grow and sell their produce locally; the community benefits from the dollars that are kept locally; and eaters benefit by eating fresh, great tasting nutritional local produce.

[Learn more >>](#)



## Farm to School

Shaped by each unique community, Farm to School establishes relationships between local farmers and school children. Programs assist schools (K-12) in serving healthy meals and snacks in schools, improving student nutrition, providing agriculture, health, and nutrition education opportunities, and supporting local and regional farmers.

[Learn more >>](#)



**Pollinator  
Partners  
Program**

