

# Effects of Material & Relational Deprivation on Community Health Status



David I. Gregorio  
UConn School of Medicine  
May, 2011

## Home is where the health is

Buffalo, NY



# Home is where the health is

## Buffalo, NY



## Hartford, CT



# Home is where the health is

## ERIE COUNTY New York

7,310

14

3.9

3.4

8.3

18

27

519

28

235

years of potential life lost (YPLL)

% fair or poor health

# poor health days

# poor mental health days

% low birth weight infants

% adult smokers

% obese adults

STD rate per 100K

% teen births

HIV prevalence per 100K

## HARTFORD COUNTY Connecticut

6,323

11

3.0

3.1

8.5

17

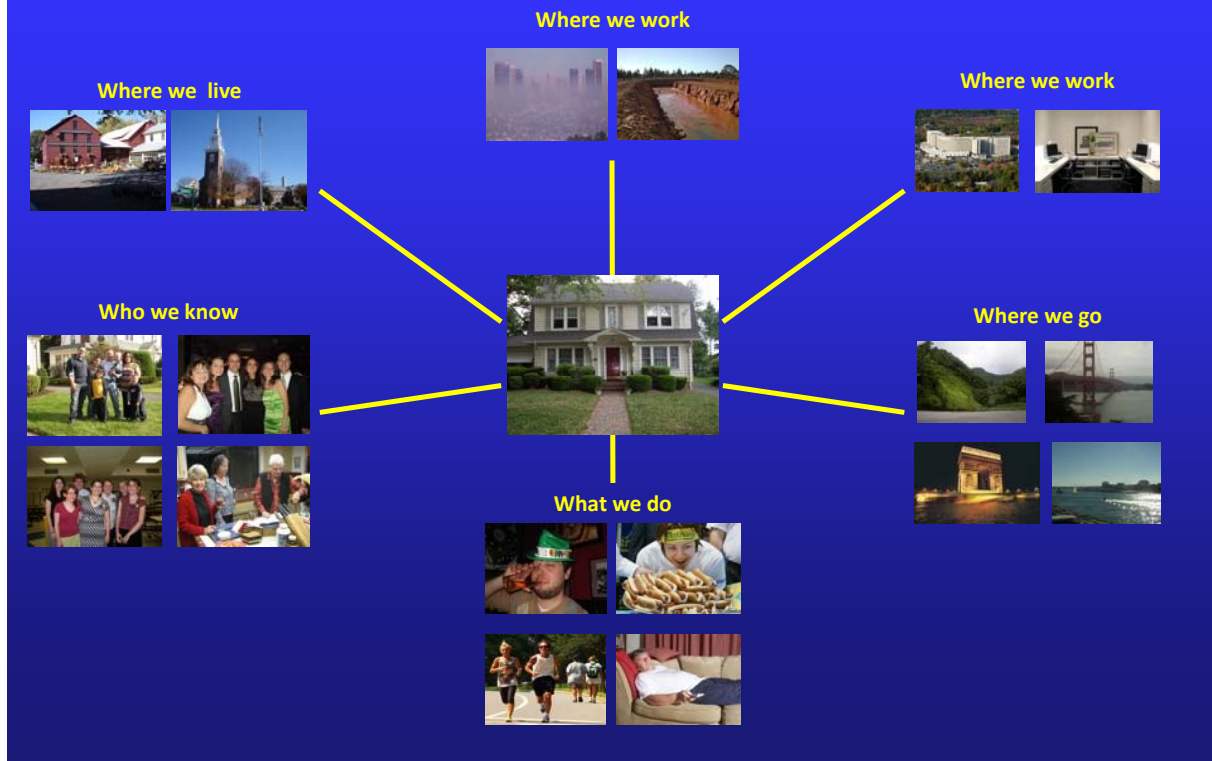
23

489

31

443

# Is home really where the health is?



## The “isms” and “ations” of health

Racism  
Sexism  
Ageism  
Segregation

Deprivation  
Assimilation  
Linguistic  
Isolation

# Townsend Index of Deprivation\*

A state of demonstrable disadvantage relative to the local community or wider society or nation to which an individual, family or group belongs

1. Unemployment rate
2. % Overcrowded households
3. % Households w/o car
4. % Not owner-occupied housing

With greater community deprivation, greater prevalence of...

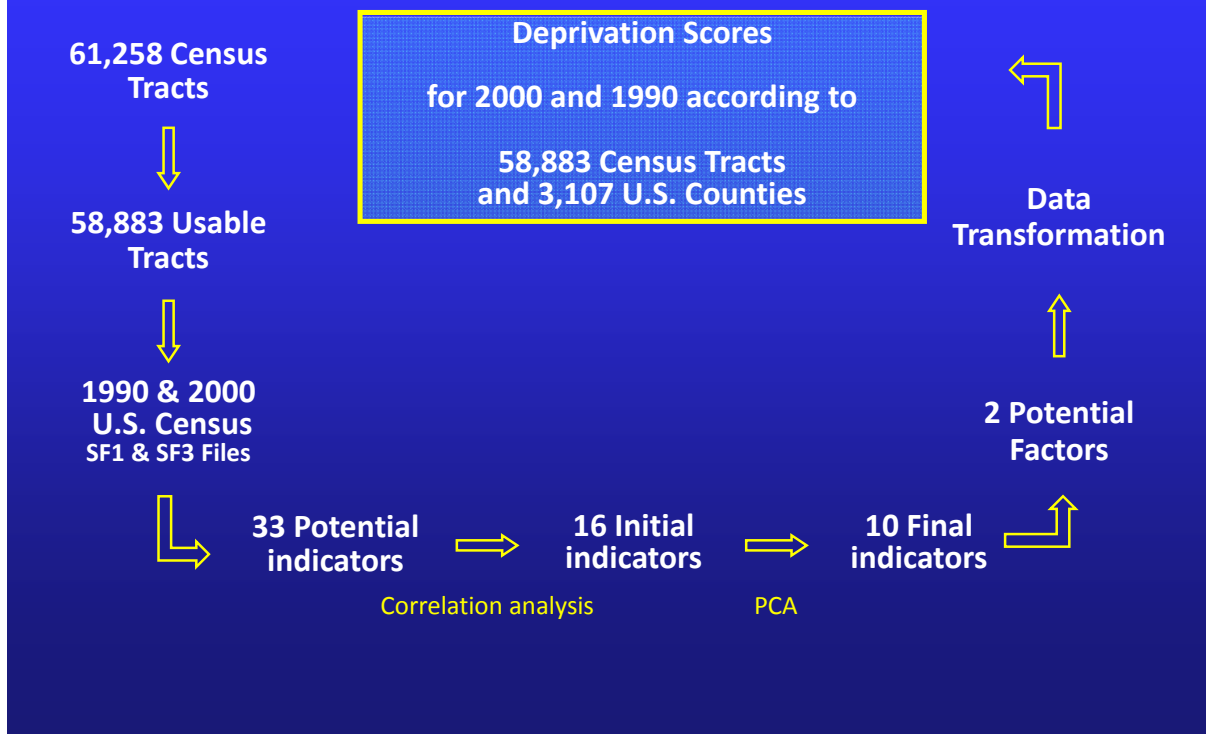
1. Diabetes (Crow, 1991; Meadows, 1995)
2. TB (Spence, 1993)
3. Epilepsy (Morgan, 2000)
4. Colorectal cancer (Haining, 1994)
5. Respiratory illnesses (Spencer, 1996; Watson, 1996)
6. Low birth weight & perinatal death (Spencer, 1999)
7. Out-of-hospital cardiac arrest (Soo, 2001)
8. Depression & organic psychosis (Wilson, 1999)
9. Dental caries & DMFT (Prendergast, 1997)
10. Hospitalizations (Gilthorpe, 1997; Morley, 2000)
11. Fecal contamination (Kaltenthaler, 1995)

*\*Journal of Social Policy, 16, 125-46*

**Look at impoverished lives, and not just  
at depleted wallets.**

**-Amartya Sen**

## Deprivation (area wide) Indexed Geographically



## 2000 Area-wide Deprivation Scores\*

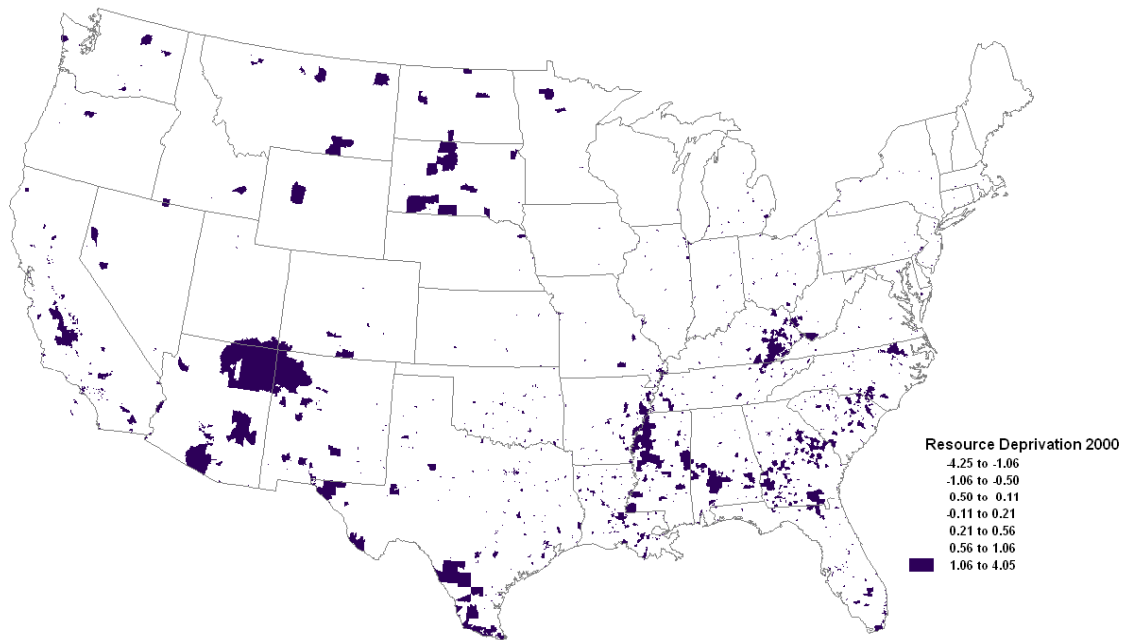
### Factor 1: 49% of variance accounted

Name	Factor	MATDep
PCI	Per capita income	0.91
OccStatus	% persons in Prof& kindred occupations	0.91
NoDiploma	% persons w/o high school diploma	0.88
Value	Median Value of housing units	-0.74
PubAssist	% persons receiving public assistance	0.73
SingMom	% female headed households with children (LT18)	0.71
DivSep	% married persons now divorced/separated	0.40
Tenant	% adults in renter-occupied housing units	0.24
New Home	% persons who relocated residence in past 5 yrs	-0.21
NTradFam	% persons in non-traditional households	-0.03

$$\text{MATDep}_{00} = (\text{PCI})(0.91) + (\text{OccStatus})(-0.91) + (\text{NoDiploma})(0.88) + (\text{Value})(-0.74) + (\text{PubAssist})(0.83) + (\text{SingMom})(0.71) + (\text{DivSep})(0.40) + (\text{Tenant})(0.24) + (\text{NewHome})(-0.21) + (\text{NTradFam})(-0.03)$$

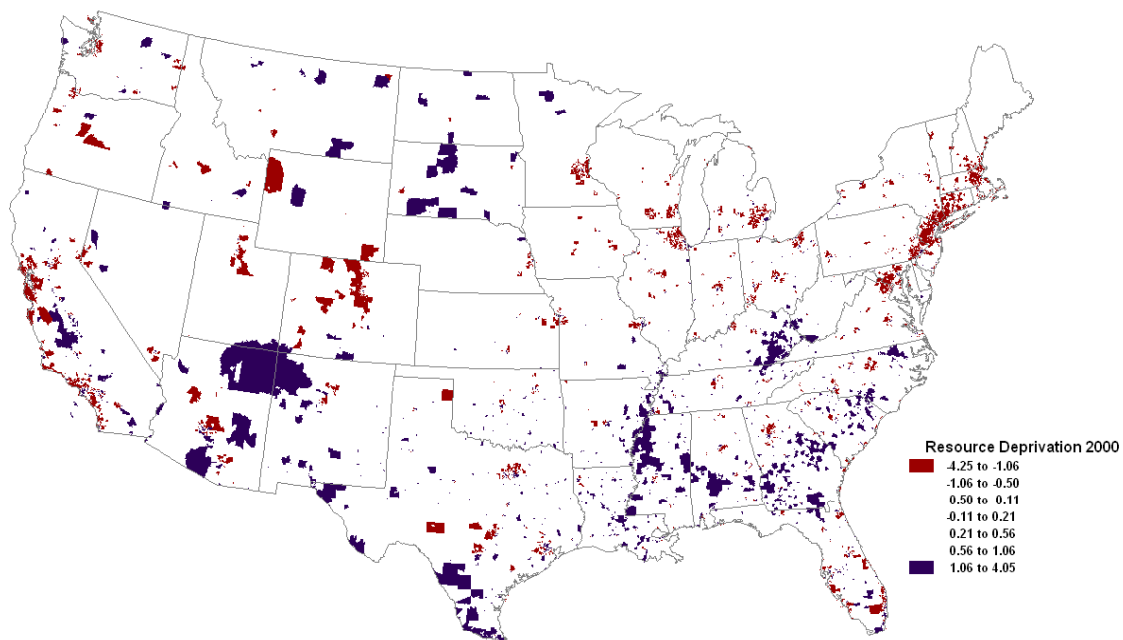
\* Factor extraction method: PCA with varimax rotation

## Category 7 MATDep Scores, U.S. Census Tracts, 2000



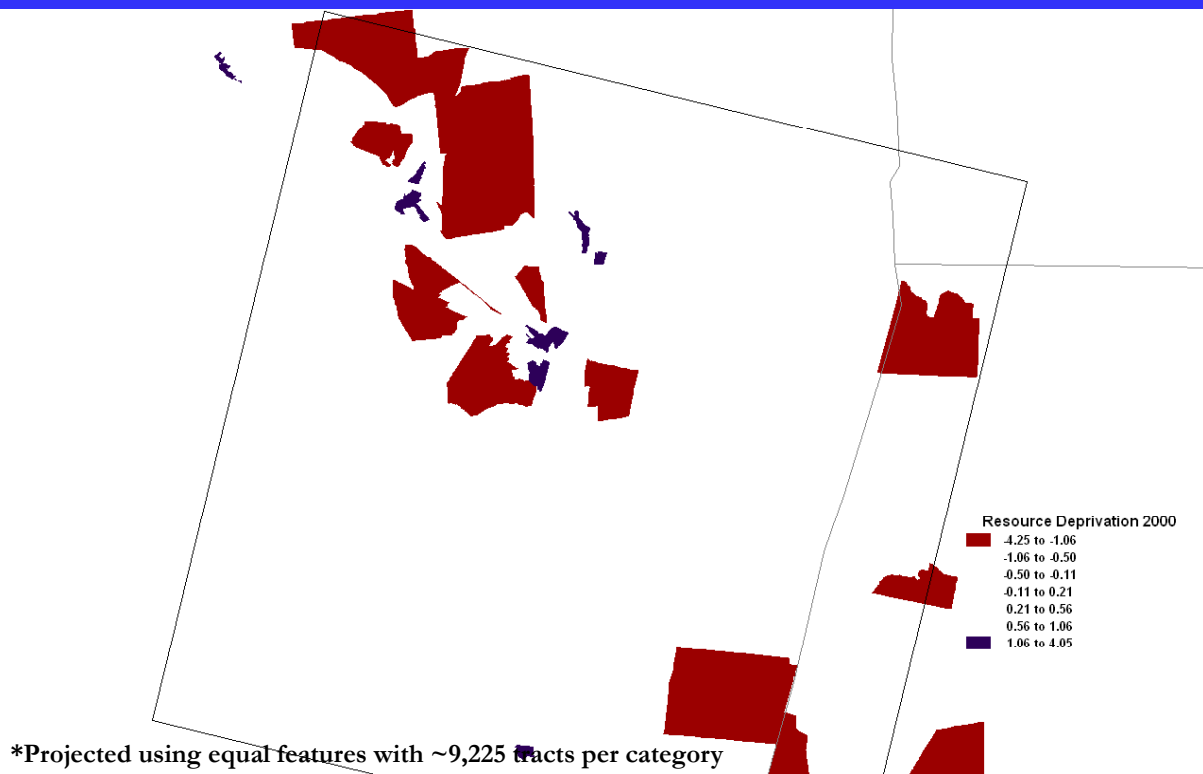
\*Projected using equal features with ~9,225 tracts per category

## Category 1 & 7 MATDep Scores, U.S. Census Tracts, 2000

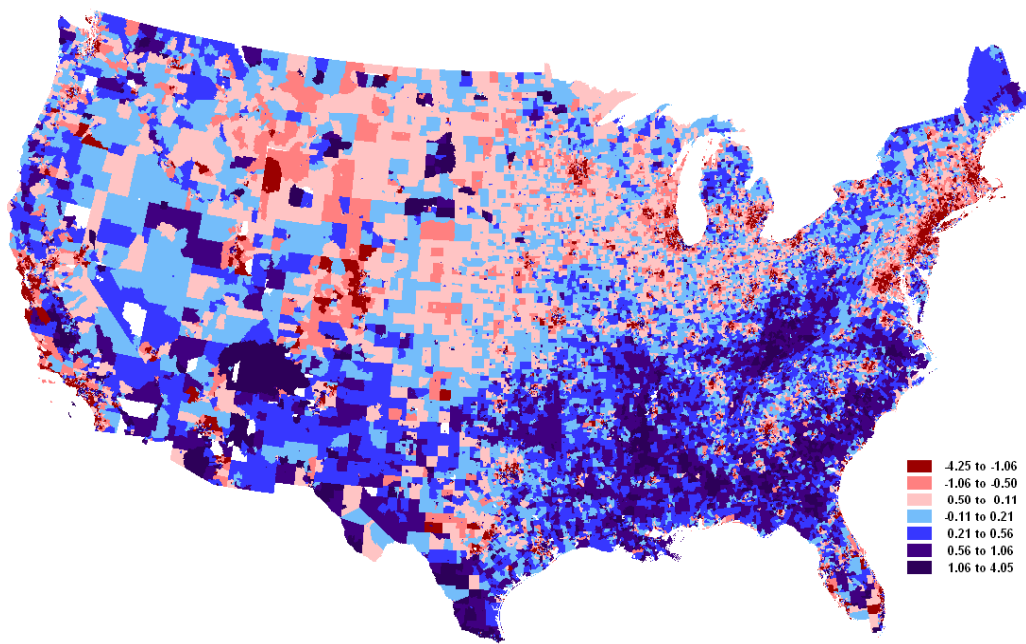


\*Projected using equal features with ~9,225 tracts per category

## Category 1&7 MATDep Scores, Albany NY Region, U.S. Census Tracts, 2000



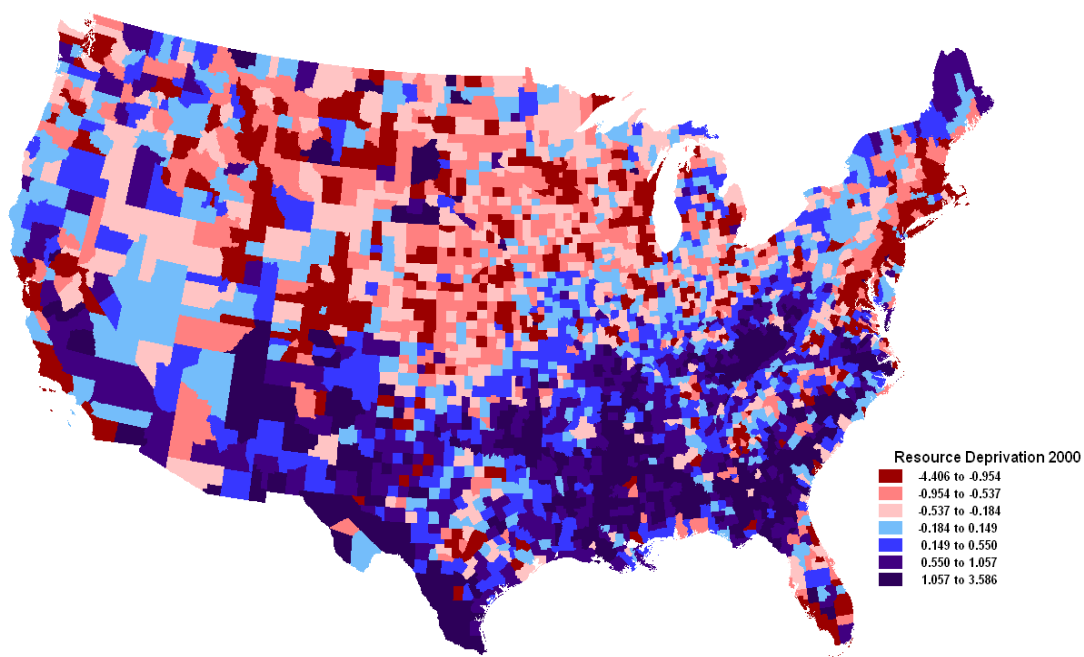
## MATDep Scores, U.S. Census Tracts, 2000



## Material Deprivation, Poverty and Location, U.S. Census Tracts, 2000

	MATDep	Poverty	Townsend	Latitude
MATDep	1.00			
Townsend Index	0.72	1.00		
Poverty Level	0.75	0.76	1.00	
Census Tract Latitude	-0.08	-0.15	-0.11	1.00
Census Tract Longitude	0.05	-0.02	-0.06	0.12

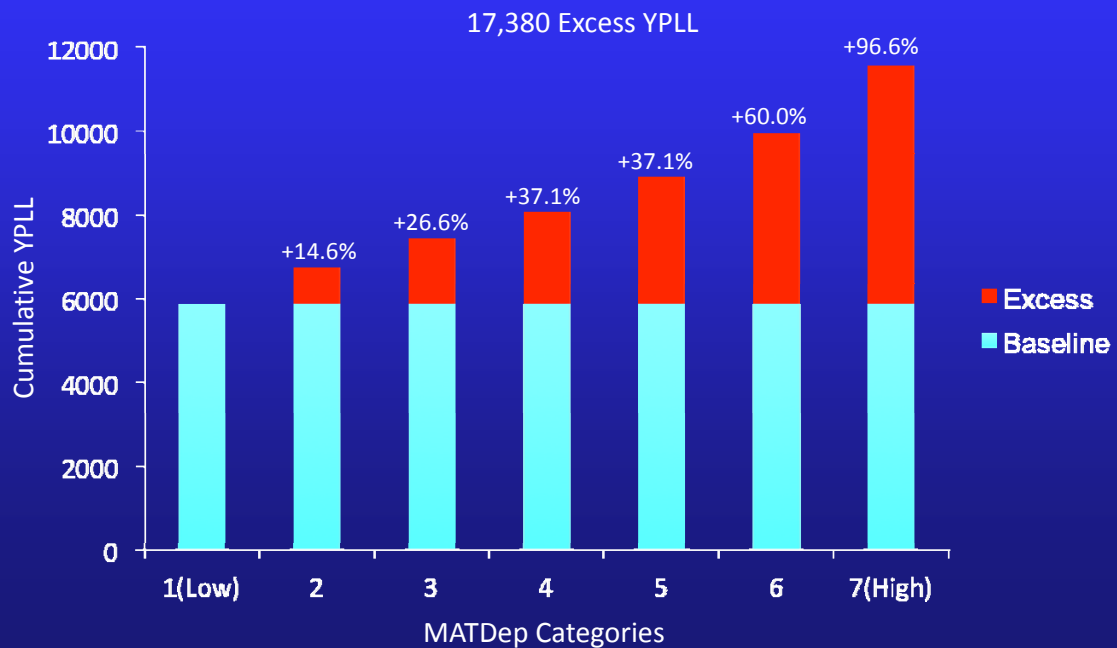
## Area-wide Deprivation Scores for U.S. Counties\*, 2000



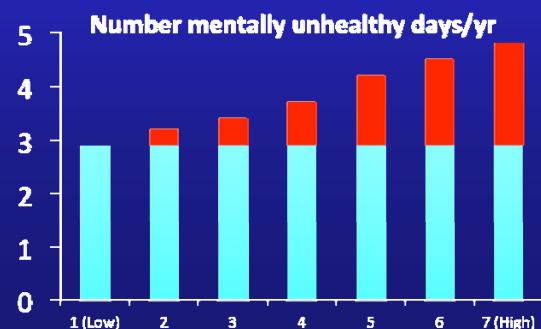
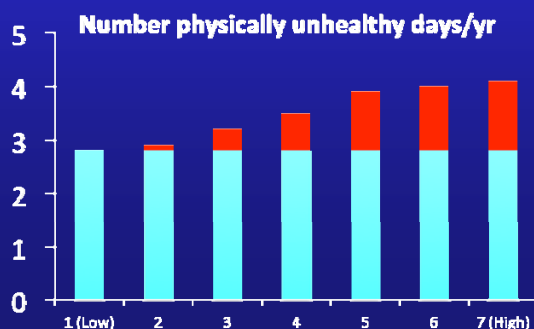
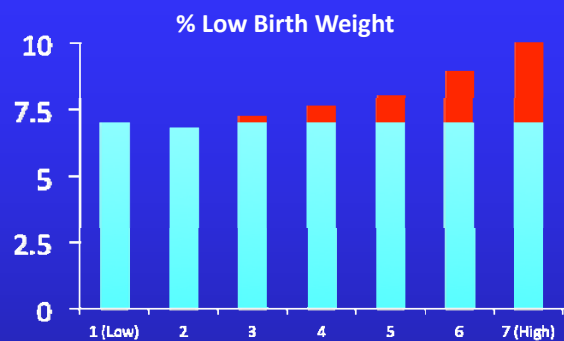
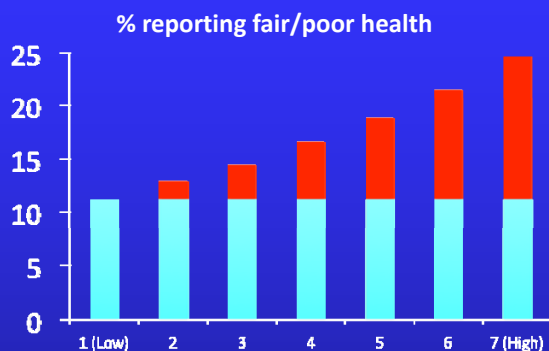
\*Projected using equal features with ~449 counties per category



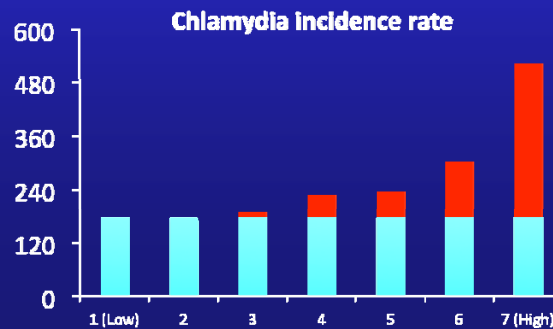
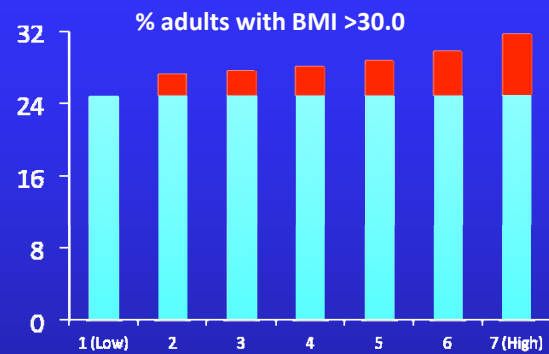
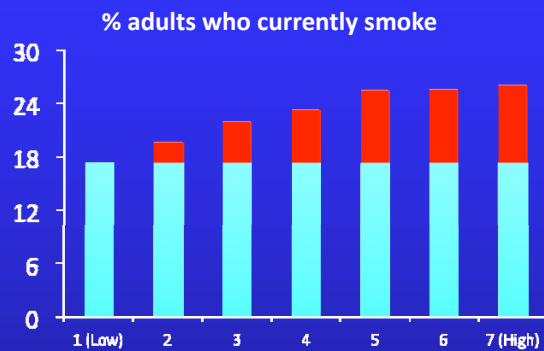
## Years of Potential Life Lost (YPLL) according to MATDep scores, U.S. Counties, 2000



## Health status indicators according to MATDep scores, U.S. Counties, 2000



## Health status indicators according to MATDep scores, U.S. Counties, 2000



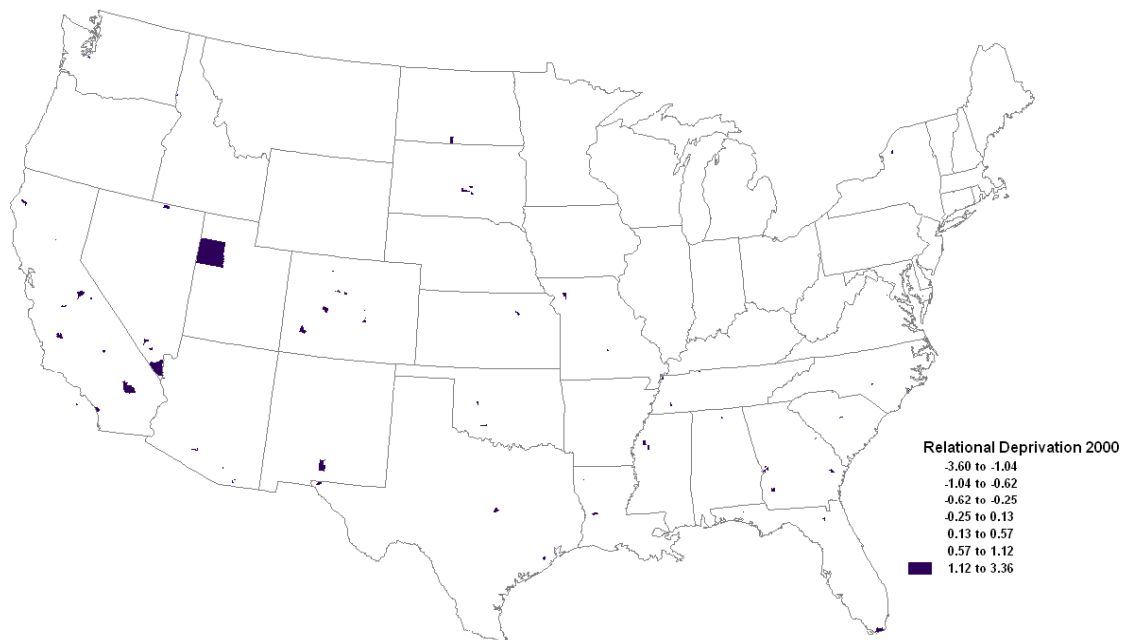
## 2000 Area-wide Deprivation Scores\* Factor 2: 22% of variance accounted

Name	Factor	RELDep
<b>Tenant</b>	<b>% adults in renter-occupied housing units</b>	<b>0.87</b>
<b>NTradFam</b>	<b>% persons in non-traditional households</b>	<b>0.84</b>
<b>DivSep</b>	<b>% married persons now divorced/separated</b>	<b>0.76</b>
<b>New Home</b>	<b>% persons who relocated residence in past 5 yrs</b>	<b>0.73</b>
SingMom	% female headed households with children (LT18)	0.39
PubAssist	% persons receiving public assistance	0.37
PCI	Per capita income	-0.16
NoDiploma	% persons w/o high school diploma	0.12
OccStatus	% persons in Prof& kindred occupations	-0.03
Value	Median Value of housing units	-0.02

$$RELDep_{00} = (Tenant)(0.87) + (NTradFam)(0.84) + (DivSep)(0.76) + (NewHome)(0.73) + (SingMom)(0.39) + (PubAssist)(0.37) + (PCI)(0.16) + (NoDiploma)(0.12) + (OccStatus)(-0.03) + (Value)(-0.02)$$

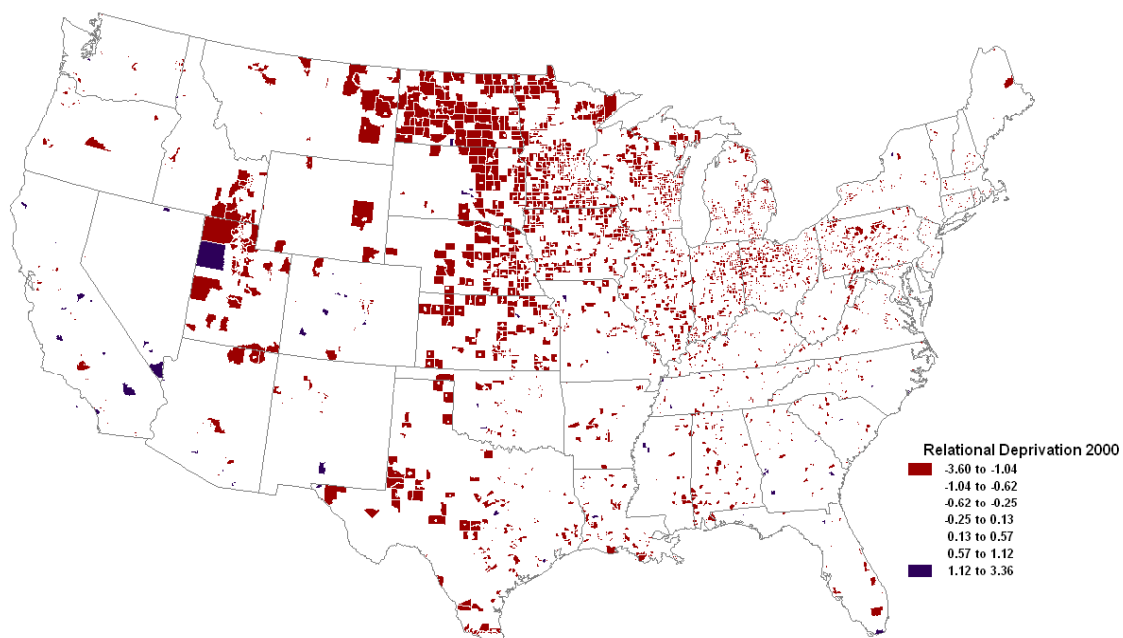
\* Factor extraction method: PCA with varimax rotation

## Category 1 RELDep Scores, U.S. Census Tracts, 2000



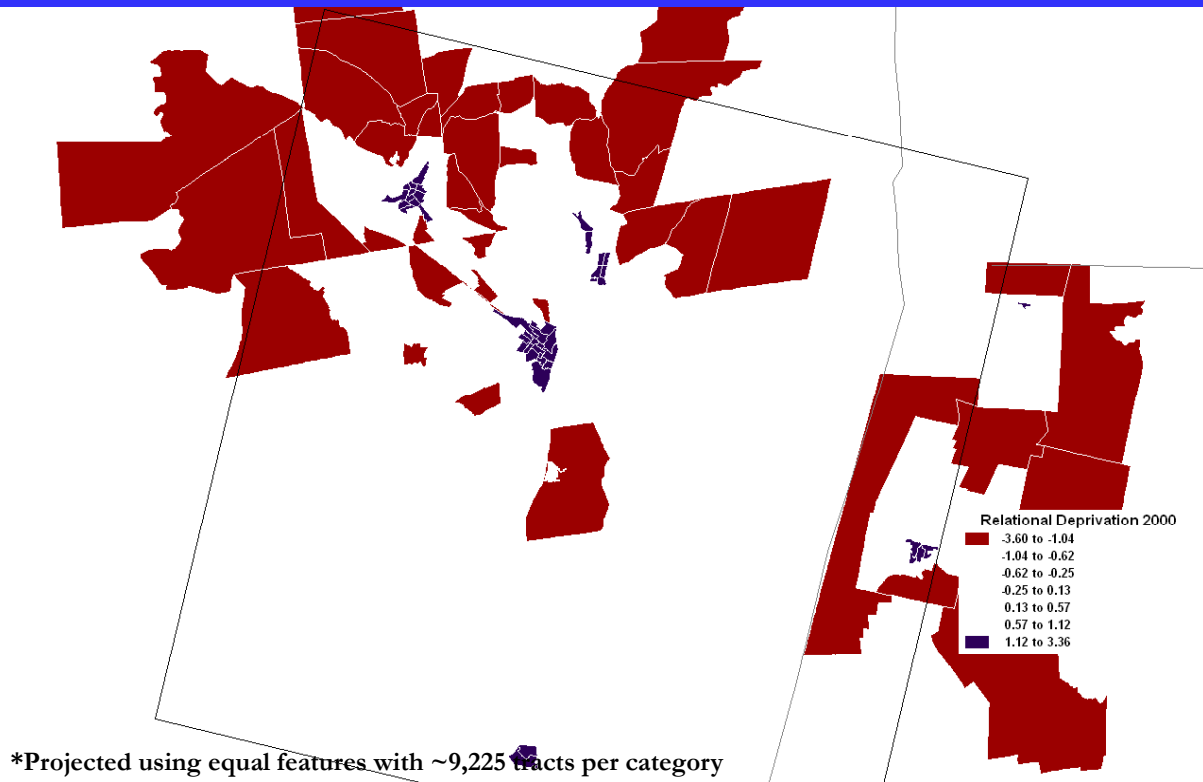
\*Projected using equal features with ~9,225 tracts per category

## Category 1 & 7 RELDep Scores, U.S. Census Tracts, 2000

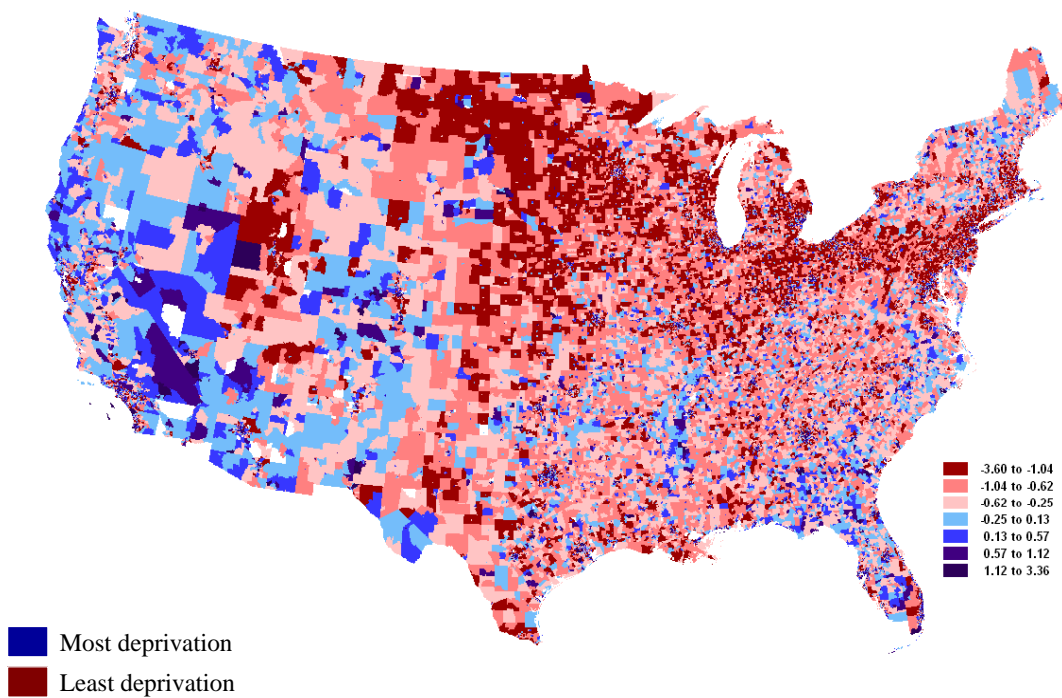


\*Projected using equal features with ~9,225 tracts per category

## Category 1&7 RELDep Scores, Albany NY Region, U.S. Census Tracts, 2000



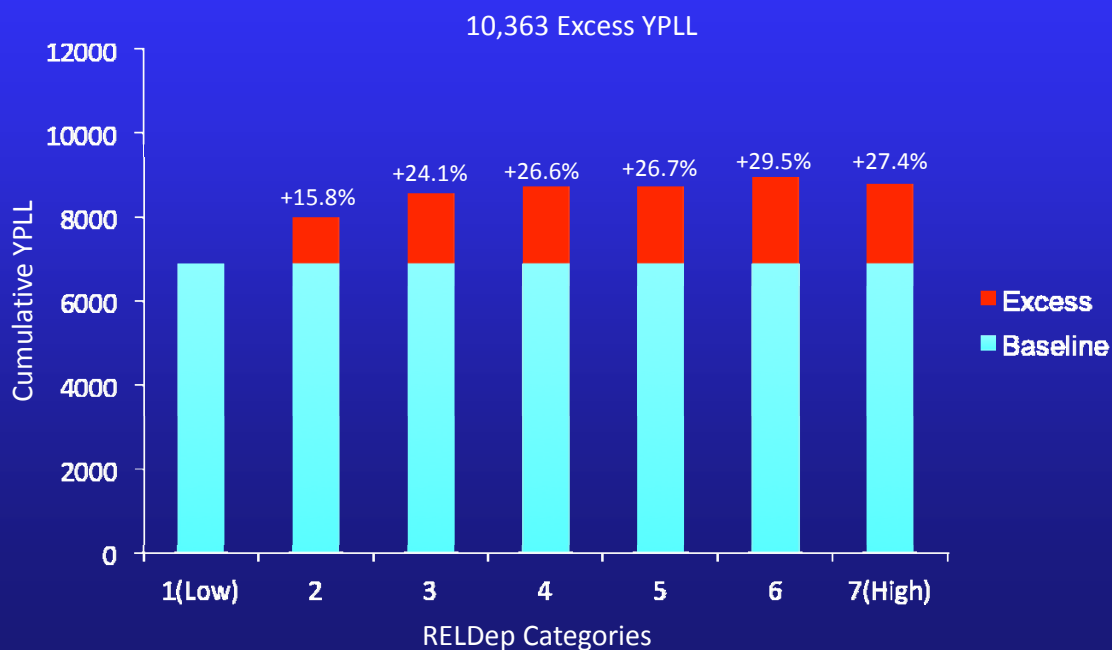
## RELDep Scores, U.S. Census Tracts, 2000



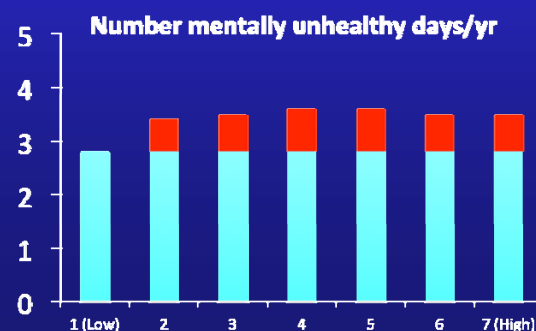
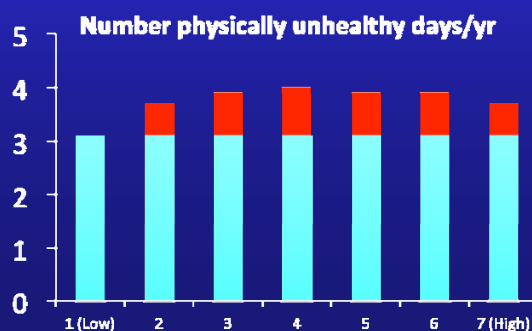
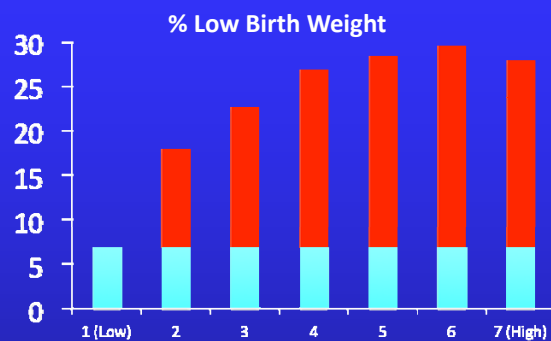
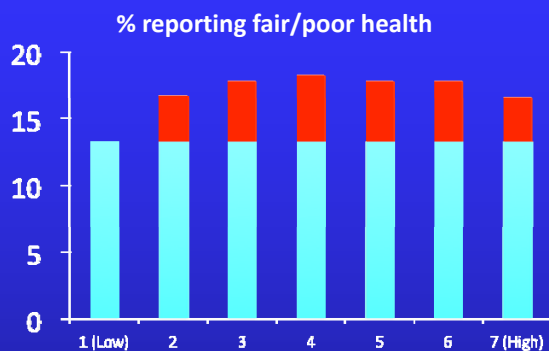
## Relational Deprivation, Poverty and Location, U.S. Census Tracts, 2000

	RELDep	Poverty	Townsend	Latitude	MATDep
RELDep	1.00				0.38
Townsend Index	0.75	1.00			
Poverty Level	0.52	0.76	1.00		
Census Tract Latitude	-0.08	-0.15	-0.11	1.00	
Census Tract Longitude	-0.12	-0.02	-0.06	0.12	

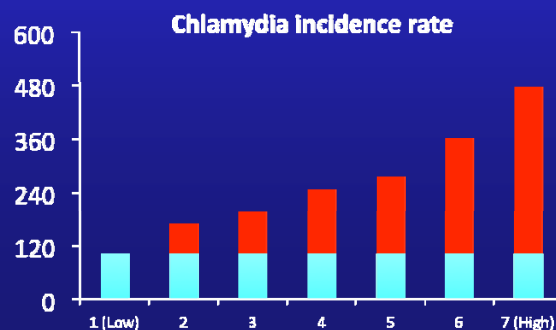
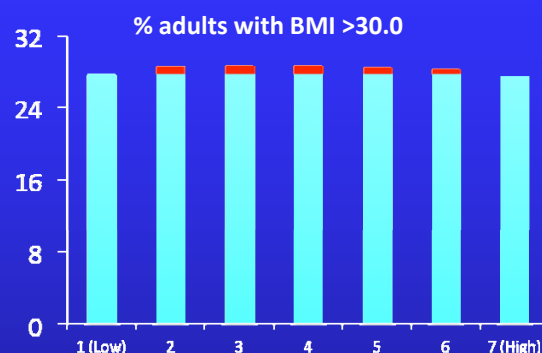
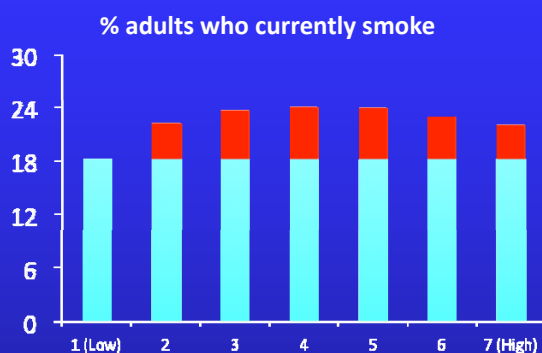
## Years of Potential Life Lost (YPLL) according to RELDep scores, U.S. Counties, 2000



## Health status indicators according to RELDep scores, U.S. Counties, 2000



## Health status indicators according to RELDep scores, U.S. Counties, 2000



# SUMMARY

## Deprivation is multi-dimensional

Material, Relational, Financial, Environmental.....

Census-based indicators capture population variability  
across U.S. Counties and Tracts

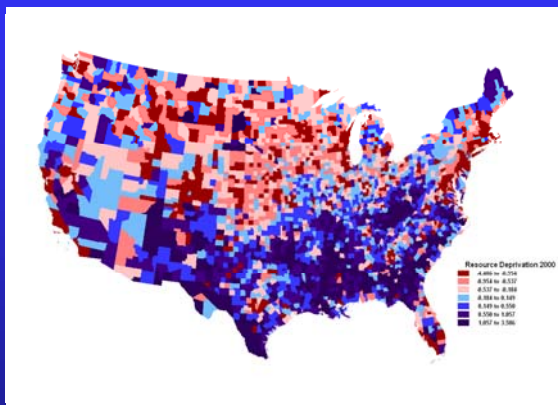
Correlates with other composite and individual indicators

Correlates with health outcomes

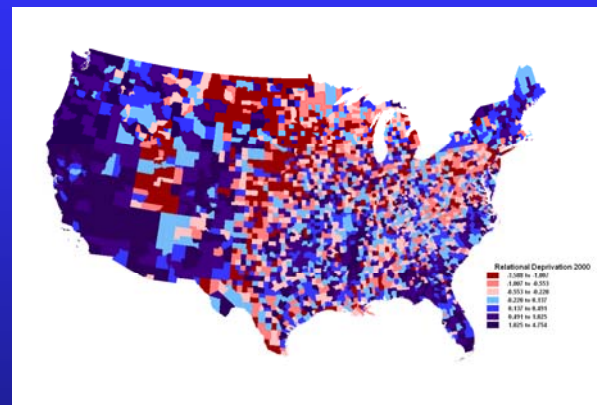


## Area-wide Deprivation Scores for U.S. Counties\*, 2000

MATDep



RELDep



■ Most deprived  
■ Least deprived

\*Projected using equal features with ~449 counties per category