



# **Environmental Contribution to Health Disparities: Where the Health Burden Is**

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# Outline

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- Environment and Health Disparities
- Research Reveals the Connection
- Overview of HHS Activities



# Environment and Health Disparities

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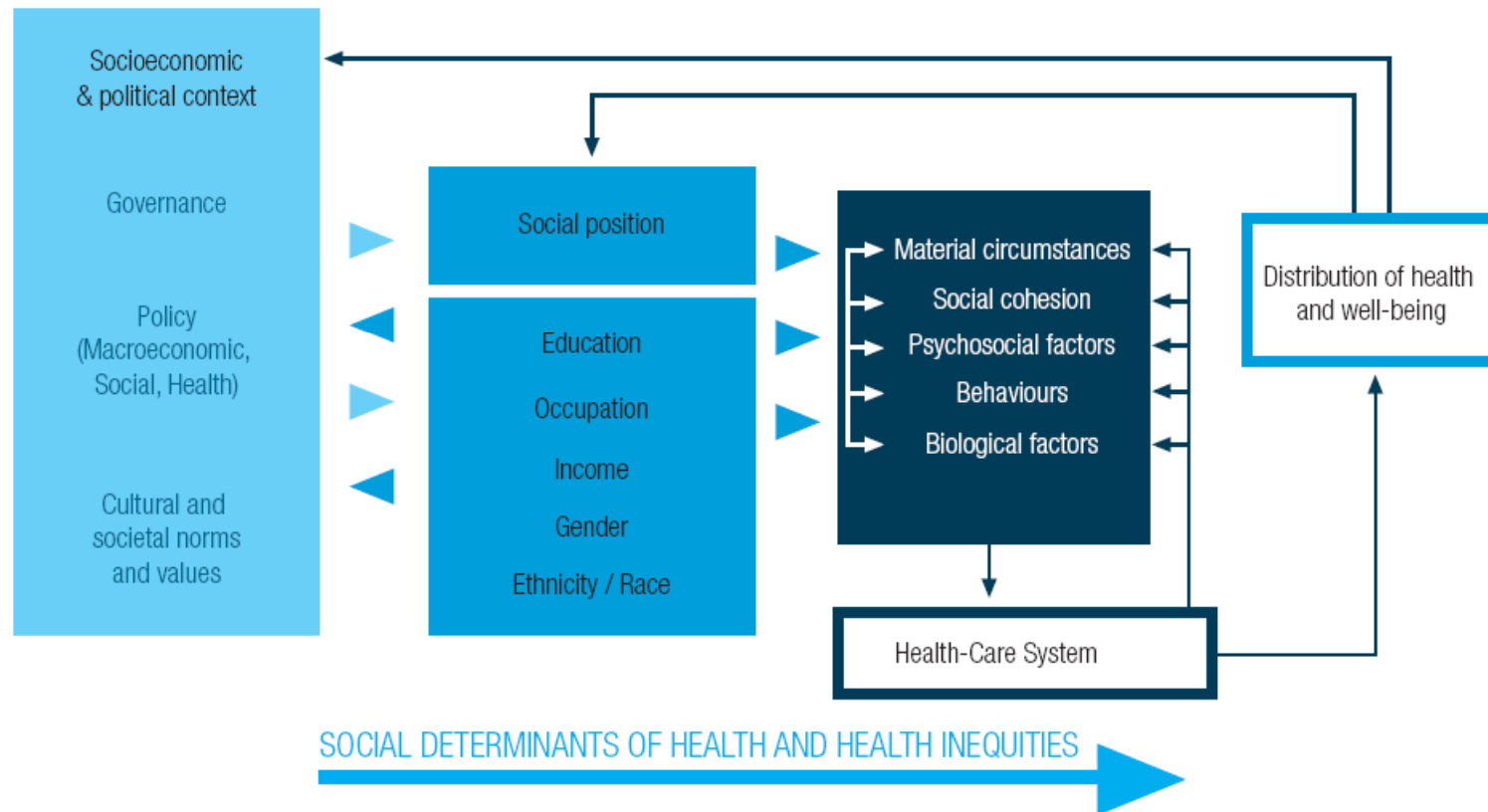
*“The connection between health and dwelling is one of the most important that exists.” – Florence Nightingale*

- Intersection between the environment, health disparities, and the social determinants of health
- Social determinants of health are the conditions in which people are born, grow, live, work, and age
- Populations at-risk: poor/low-income, racial/ethnic minorities, infants and children, pregnant women, indigenous/tribal populations
- Health inequities: shorter life expectancy and higher rates of cancer, birth defects, infant mortality, asthma, cardiovascular disease, diabetes, and other obesity-related disorders



# Social Determinants Framework

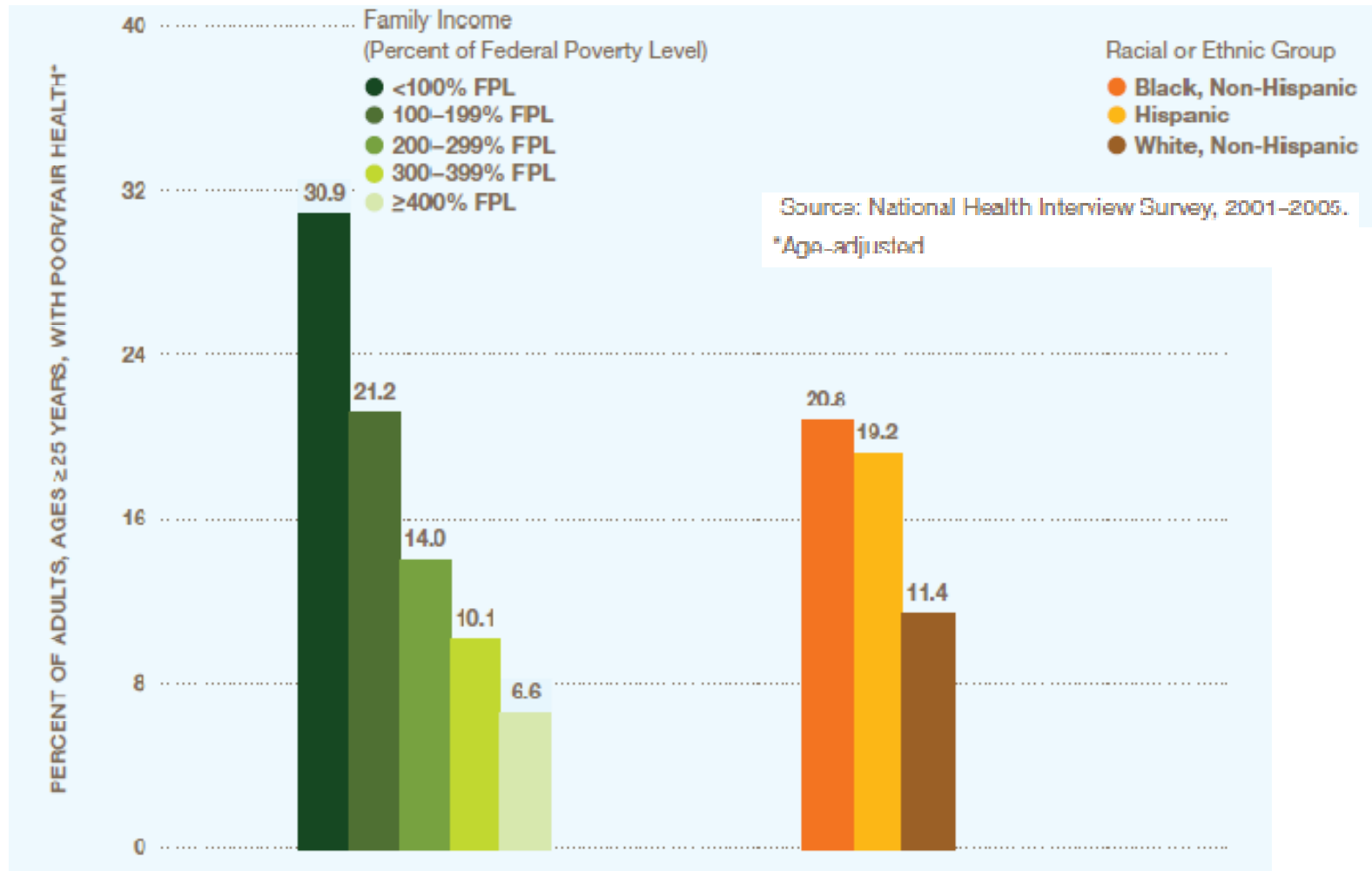
**Figure 4.1** Commission on Social Determinants of Health conceptual framework.



Source: Amended from Solar & Irwin, 2007



# Poor Health Status by Income and Race in the U.S.





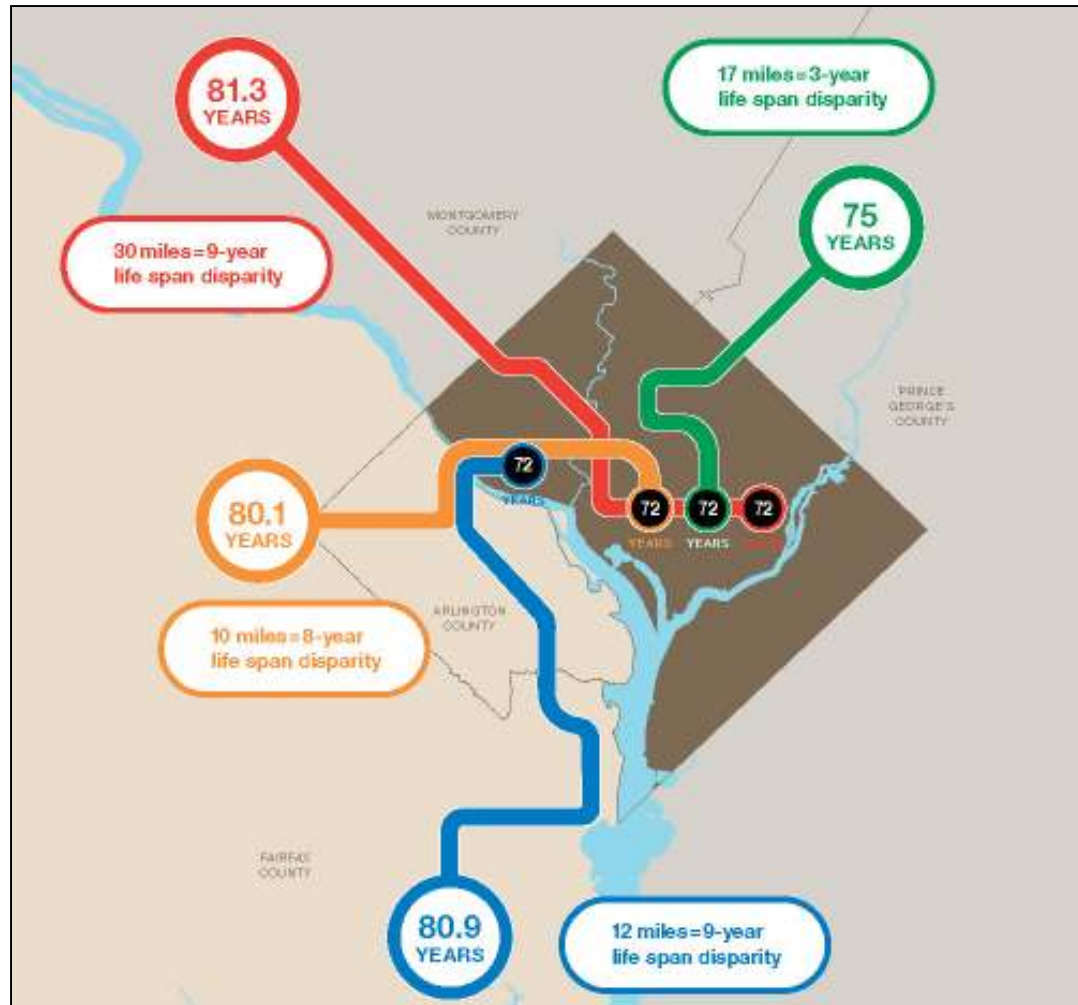
## A Short Distance to Large Disparities in Health: *Washington, D.C.*

Red Line between Union Station in Washington and Shady Grove in Montgomery County, Md. are 17 metro stops spanning 30 miles and an estimated nine year difference in life span.

Orange Line between Metro Center in Washington and East Falls Church in Arlington County, Va. are nine metro stops spanning 10 miles and an estimated eight year difference in life span.

Green Line between Gallery Place in Washington and Greenbelt in Prince Georges County, Md. are 11 metro stops spanning 17 miles and an estimated three year difference in life span.

Blue Line between Foggy Bottom in Washington and Springfield-Franconia in Fairfax County, Va. are 10 metro stops spanning 12 miles and an estimated nine year difference in life span.





# Outline

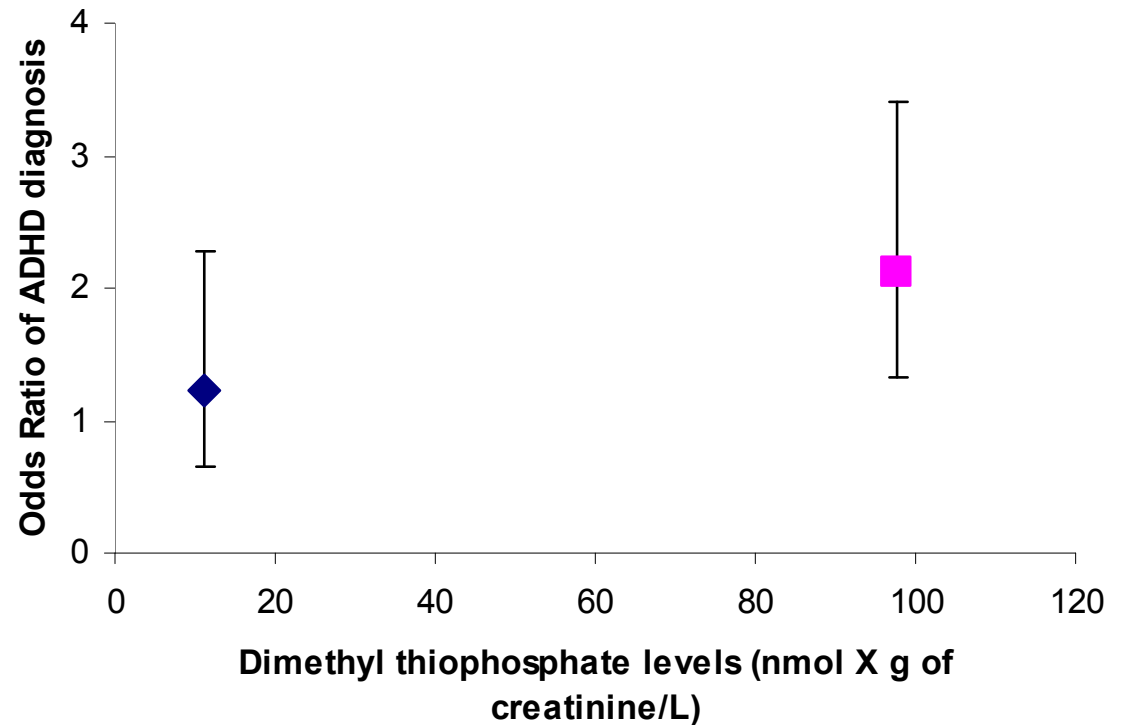
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# Attention-Deficit/Hyperactivity Disorder and Pesticide Exposure in Children

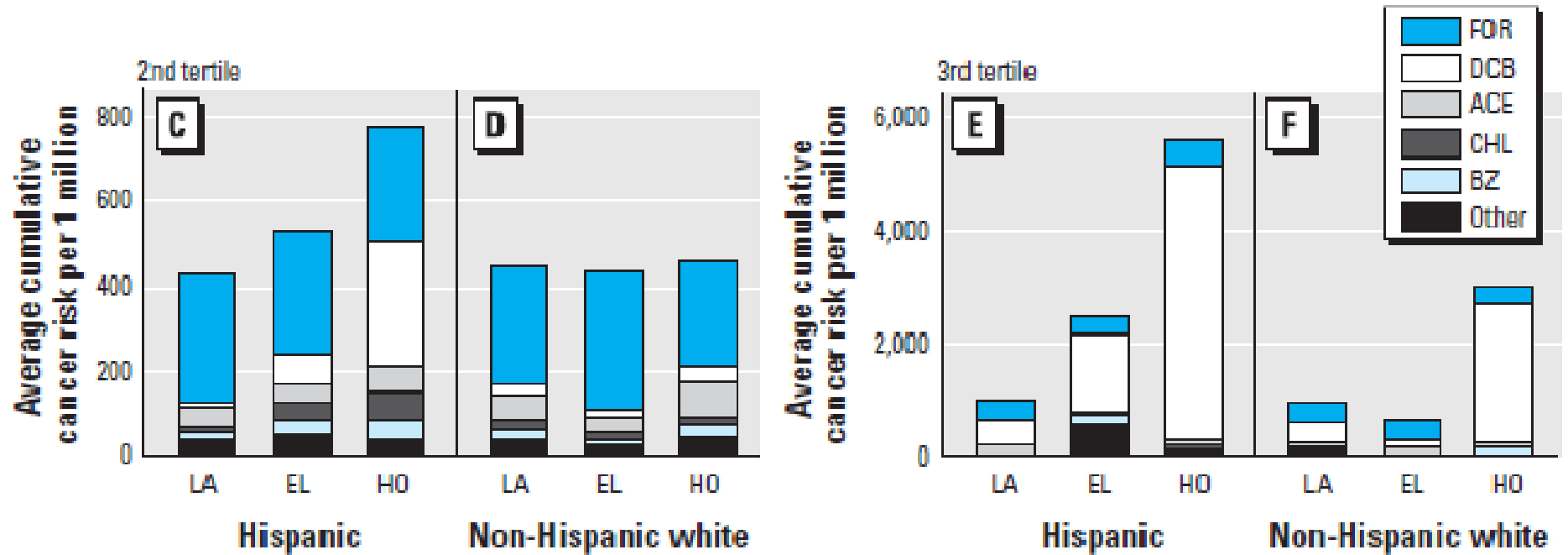
- Higher organophosphate pesticide metabolite levels nearly doubled the odds of ADHD diagnosis
- Higher metabolite levels in children were associated with lower family income



Maryse F. Bouchard, David C. Bellinger, Robert O. Wright, and Marc G. Weisskopf. Attention-Deficit/Hyperactivity Disorder and Urinary Metabolites of Organophosphate Pesticides. *Pediatrics*, 2010; June 125(6): e1270-1277.



# Cancer Risk Disparities: Role of Exposure to Indoor Air Pollution

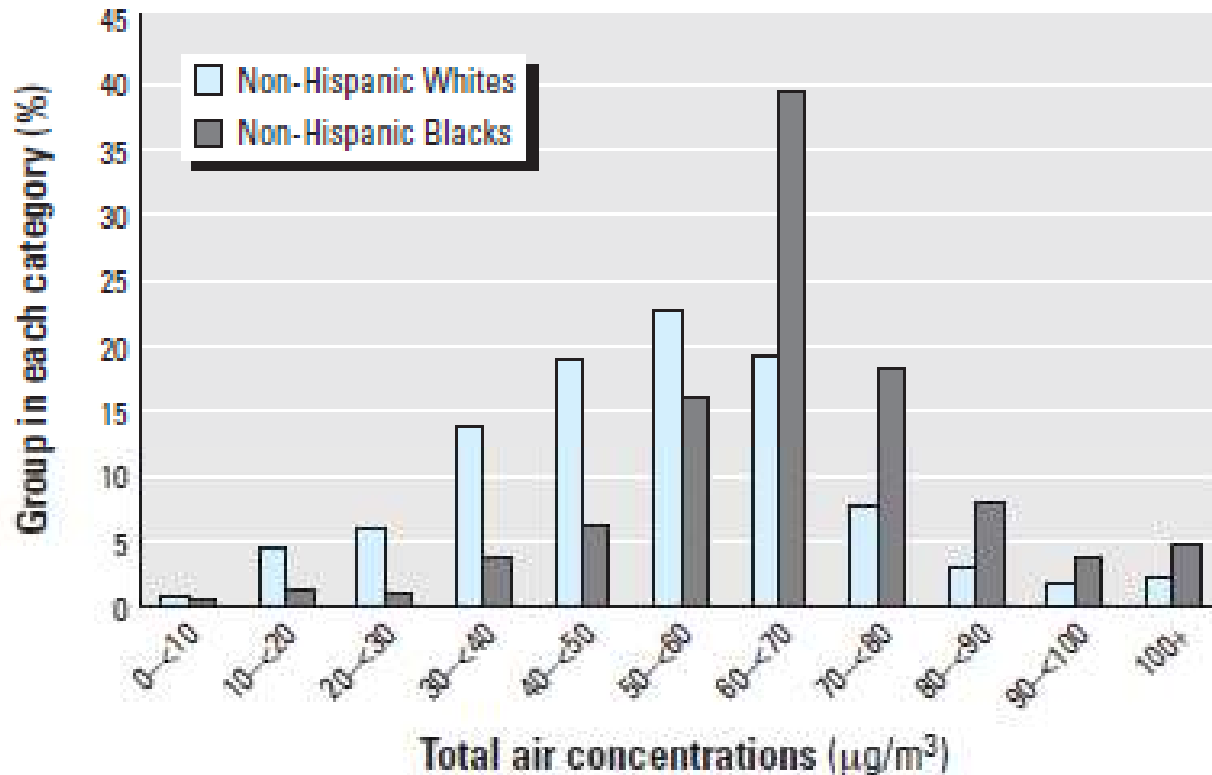


- Hispanics have higher overall exposure to air pollutants, particularly *p*-dichlorobenzene (DCB) and chloroform (CHL), and resultant higher cumulative cancer risks than non-Hispanic whites.

Hun, et al. Cancer Risk Disparities between Hispanic and Non-Hispanic White Populations: The Role of Exposure to Indoor Air Pollution. *Environmental Health Perspectives*, 2009; 117(12):1925-1931.



# Disparities in Air Toxics Exposure Los Angeles, CA



**Figure 1.** Los Angeles metropolitan area: estimated 1990 air toxics concentration totals by race.

Lopez, R. 1990. Segregation and black/white differences in exposure to air toxics in 1990. *Environ Health Persp* 11: 289-295.



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## U.S. Department of Health and Human Services (HHS)

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- Principal agency for protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves
- Office of the Secretary and 11 agencies
- Includes more than 300 programs and administers more grant dollars than all other Federal agencies combined



## Office of the Assistant Secretary for Health (OASH)

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### *Mobilizing Leadership in Science and Prevention for a Healthier Nation*

- Creating Better Systems of Prevention
  - Eliminating Health Disparities and Achieving Health Equity
  - Making *Healthy People* Come Alive for all Americans
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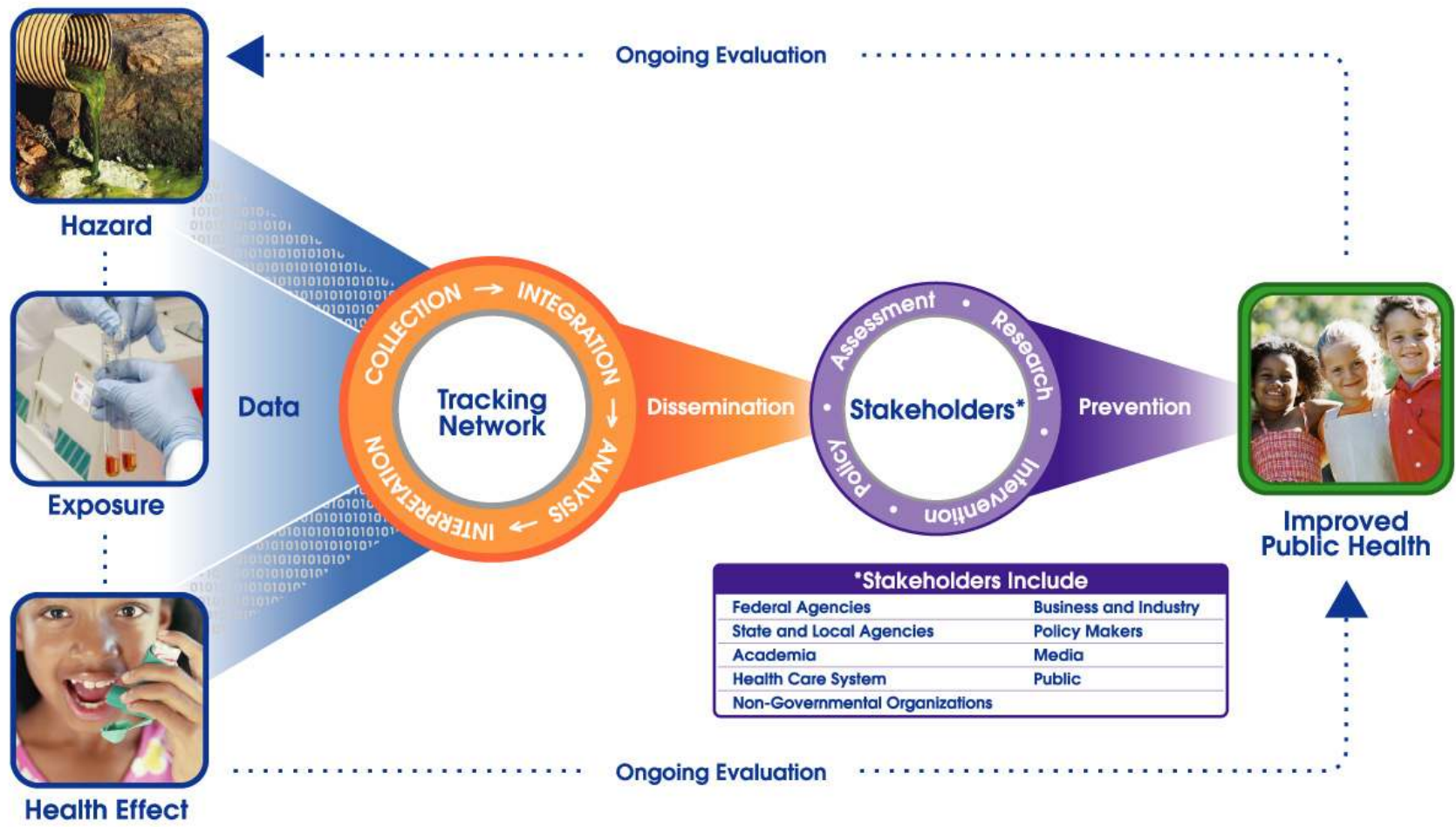


# Pillars of Strategic Action

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- Public Partnerships
- Interagency Coordination and Collaboration
- Surveillance
- Research
- Public Education and Training
- Service Delivery
- Policy and Regulation

# ENVIRONMENTAL PUBLIC HEALTH TRACKING



**\*Stakeholders Include**

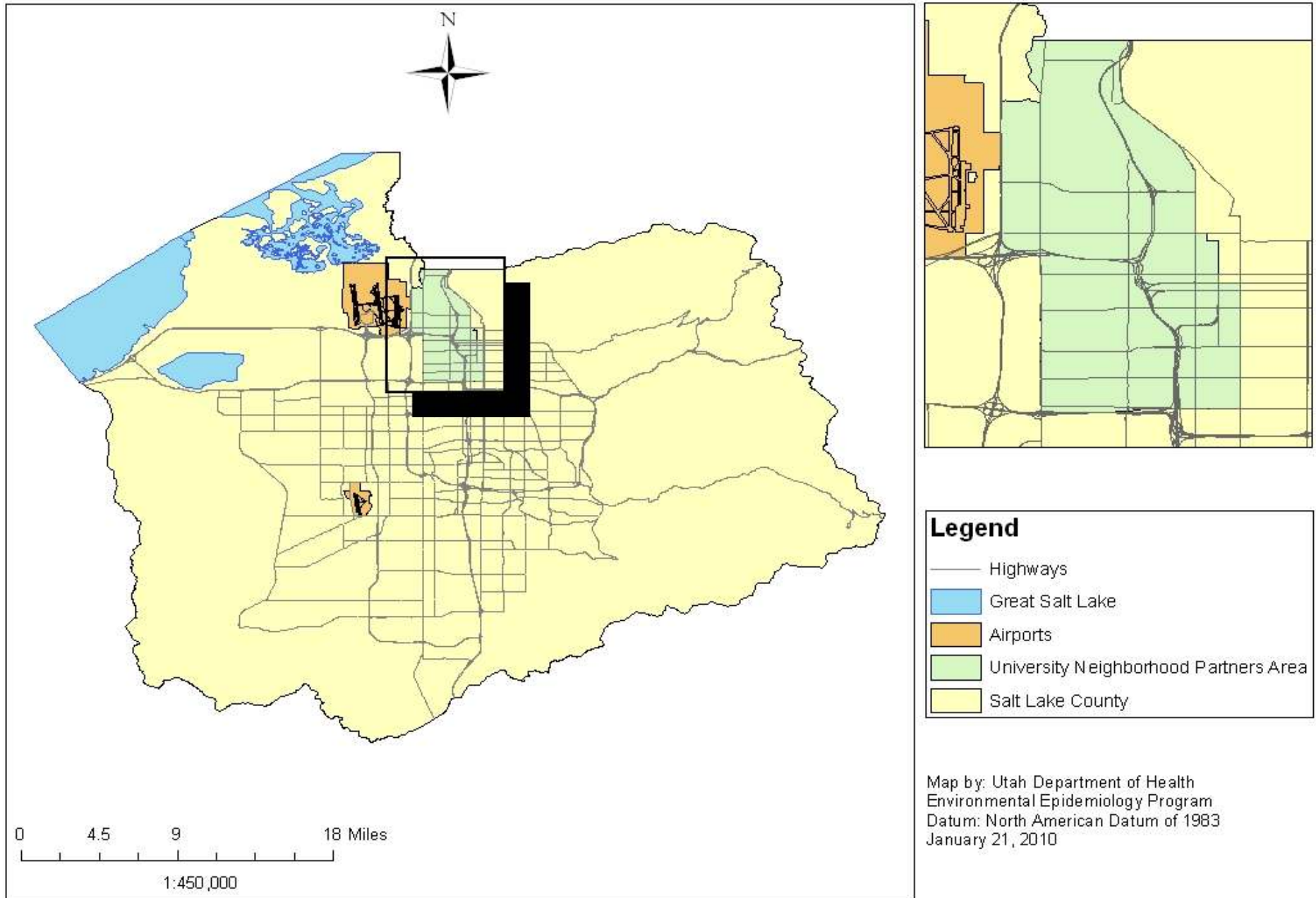
Federal Agencies	Business and Industry
State and Local Agencies	Policy Makers
Academia	Media
Health Care System	Public
Non-Governmental Organizations	



**DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION  
SAFER • HEALTHIER • PEOPLE**

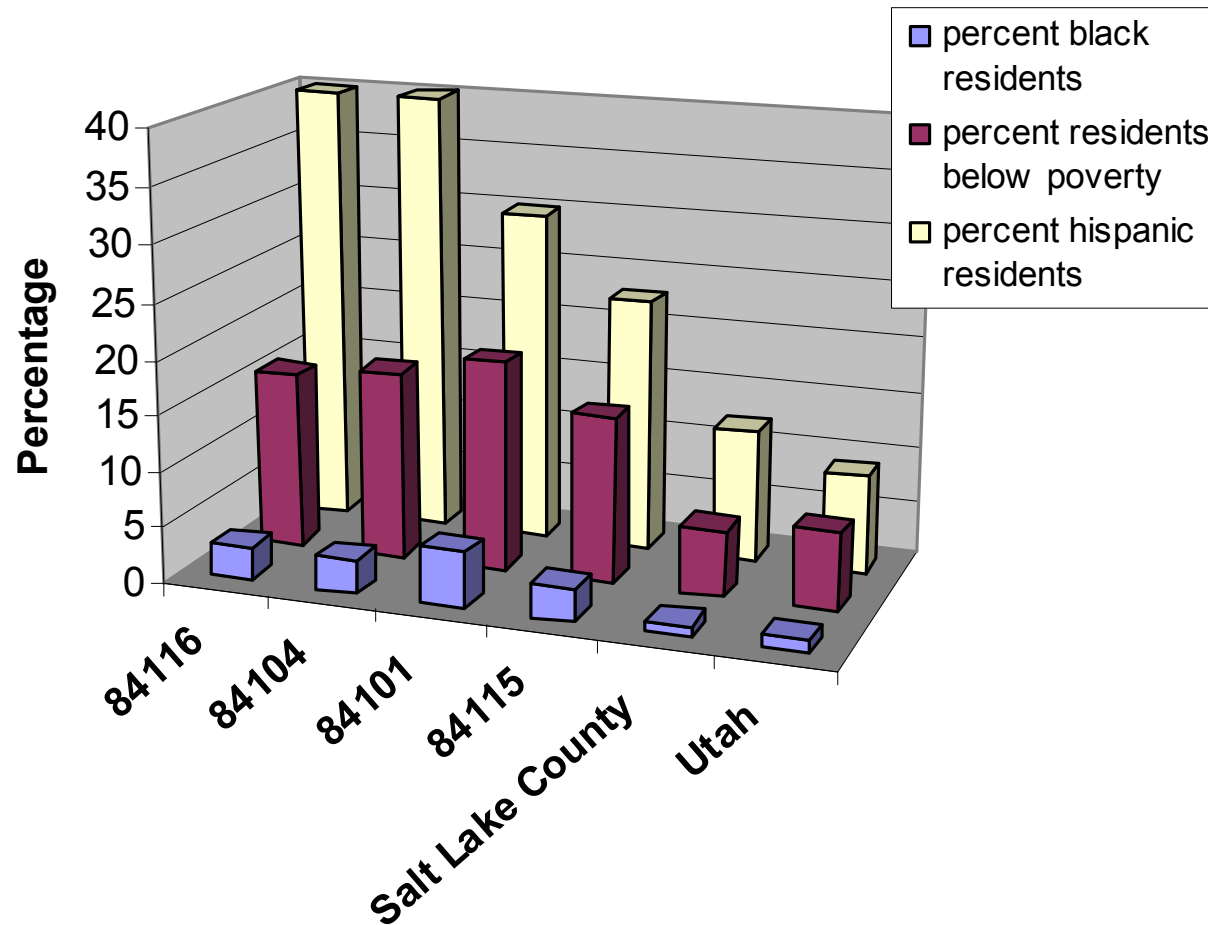


# University Neighborhood Partners Area Within Salt Lake County





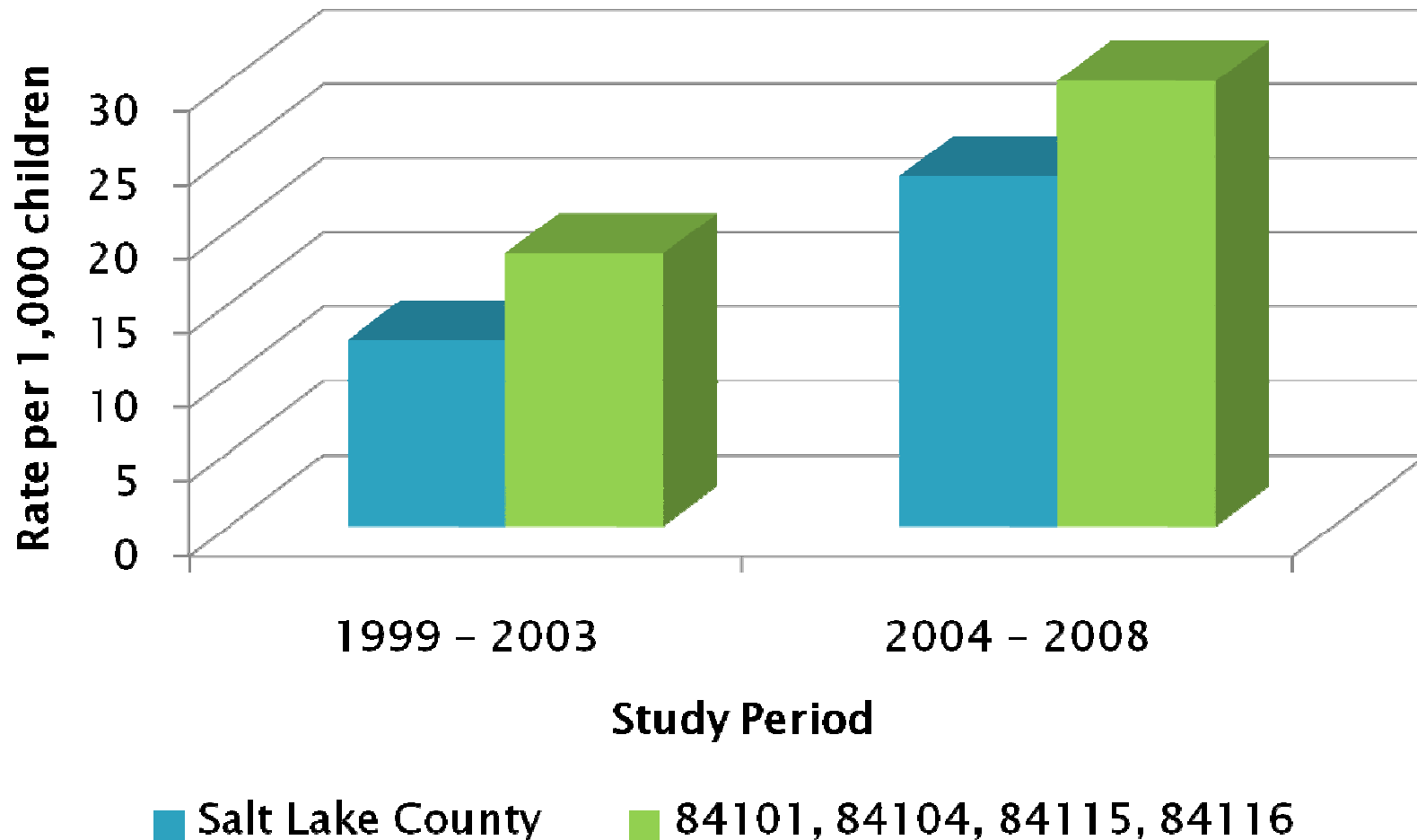
# Demographic Comparison: Partnership Zip Codes, Salt Lake County and Utah



Data source: census.gov



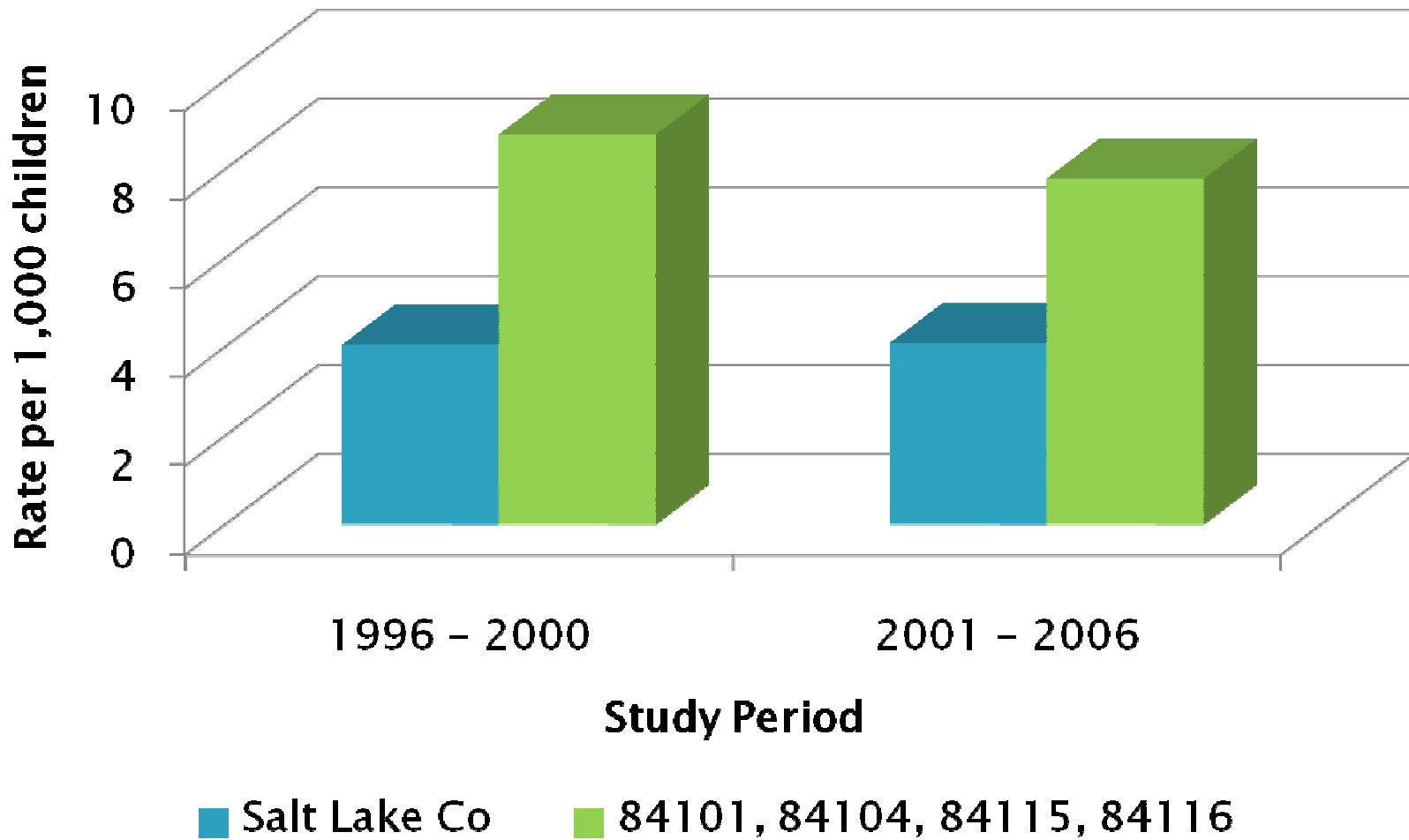
# Children with Elevated Blood Lead Levels ( $>10 \mu\text{g}/\text{dL}$ )



Slides provided by Utah Department of Health, Utah Department of Environmental Quality, U.S. EPA



# Children Hospitalized or Visiting an Emergency Department for Asthma





## Agency for Toxic Substances & Disease Registry (ATSDR) Birth Cohort Study in Navajo Nation

- Congenital anomalies are the leading cause of infant deaths on the Navajo Nation
- Limited data available on the association between uranium exposure and adverse birth and reproductive outcomes
- \$1M grant awarded to University of New Mexico to study potential association of uranium exposure during pregnancy to adverse birth outcomes
- Additional public health benefit – increased prenatal care utilization on Navajo Nation





## National Institute of Environmental Health Sciences Minority Worker Training Program



- Trains individuals who live near hazardous waste sites or in the community at risk of exposure to contaminated properties with the specific focus to obtain work in the environmental field
- Goal: Increase number of underrepresented minorities in construction and environmental remediation industries
- “A Safe Way Back Home” (2005)
  - NIEHS, Dillard University, and United Steelworkers
  - Assisted residents of a New Orleans East neighborhood and partnered with agencies to facilitate cleanup and restoration. Included safety training, volunteer assistance, and topsoil removal.





## Interagency Working Group on Environmental Justice

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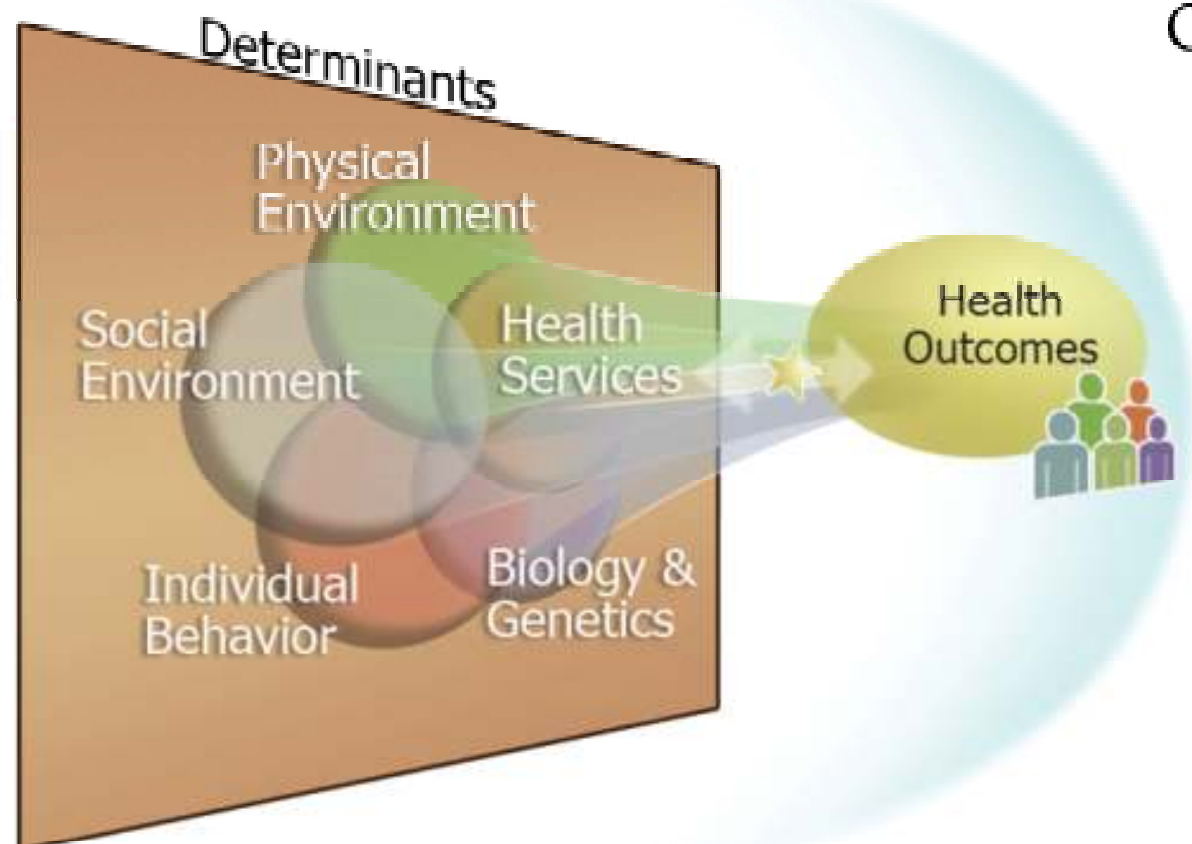
- Established in 1994 via Executive Order 12898
- Identify and address disproportionately high and adverse human health and environmental health effects of Federal programs, policies, and activities on minority, low-income, and tribal populations
- Reinvigorated on September 22, 2010 under leadership of EPA Administrator Lisa Jackson

<http://www.epa.gov/environmentaljustice/interagency/index.html>

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# Healthy People 2020

*A society in which all people live long, healthy lives*



## 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.



# Healthy People 2010

## Examples of Environmental Health Objectives

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- Reduce air toxic emissions to decrease the risk of adverse health effects caused by airborne toxics
- Eliminate elevated blood lead levels in children
- Reduce pesticide exposures that result in visits to a health care facility
- Reduce the proportion of occupied housing units that are substandard



# National Partnership for Action to End Health Disparities



- Mission
  - Increase effectiveness of programs that target elimination of health disparities through coordination of partners, leaders, and stakeholders committed to action
- 5 Goals
  - Awareness
  - Leadership
  - Health system and life experience
  - Cultural and linguistic competency
  - Data, research and evaluation
- NPA and Environmental Justice Recommendations
  - Science, Policy, Healthy Communities, Community Capacity Building



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“In its broadest sense, environmental health comprises ... direct pathological effects of various chemical, physical, and biological agents, as well as the effects on health of the broad physical and social environment, which includes housing, urban development, land-use and transportation, industry and agriculture.”

-World Health Organization, *Indicators for Policy and Decision Making in Environmental Health*, 1997