

*Public Health's Role  
with  
Infants of Substance Abusing Mothers*  
Mini Symposium Oct. 25, 2008

**METRO HEALTH**  
SAN ANTONIO'S PUBLIC HEALTH TEAM

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<http://www.sanantonio.gov/health/Healthprofiles-Main.html>

# Overview

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- Education is one of the strongest predictors of health\*
- Some important Health problems associated with dropping out of school are pregnancy, substance abuse, mental illness and behavioral problems.\*
- Infants of Substance Abusing Mothers are at higher risk for low birth weight, prematurity and child abuse/neglect.

\* Freudenberg N, Ruglis J. Reframing school dropout as a public health issue. *Prev Chronic Dis* 2007;4(4). [www.cdc.gov/pcd/issues/2007/oct/07\\_0063.htm](http://www.cdc.gov/pcd/issues/2007/oct/07_0063.htm)

# Public Health's Role

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- Generations ago, the public relied on public health to stop the spread of disease, improve sanitation and act as a safety net.\*
- This generation needs public health to address social health determinants and to maintain the success of past generations.\*
- Public Health Approach: define the problem, collect and analyze the data, determine the causes of the problem, take necessary action.\*
- Public Health's role is to call attention to health disparities and poor outcomes.\*

\* The Public Health Approach to the Elimination of Disparities in Health, David Satcher, M.D., Ph.D.

# Educational Attainment Is An Important Public Health Measure

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- An adequate education is critical for reducing disparities.\*
- In Bexar County, among Hispanic students the high school dropout rate is 43%, African Americans 37%, and Non Hispanic Whites 23%.\*\*
- Population growth is fastest among minorities.

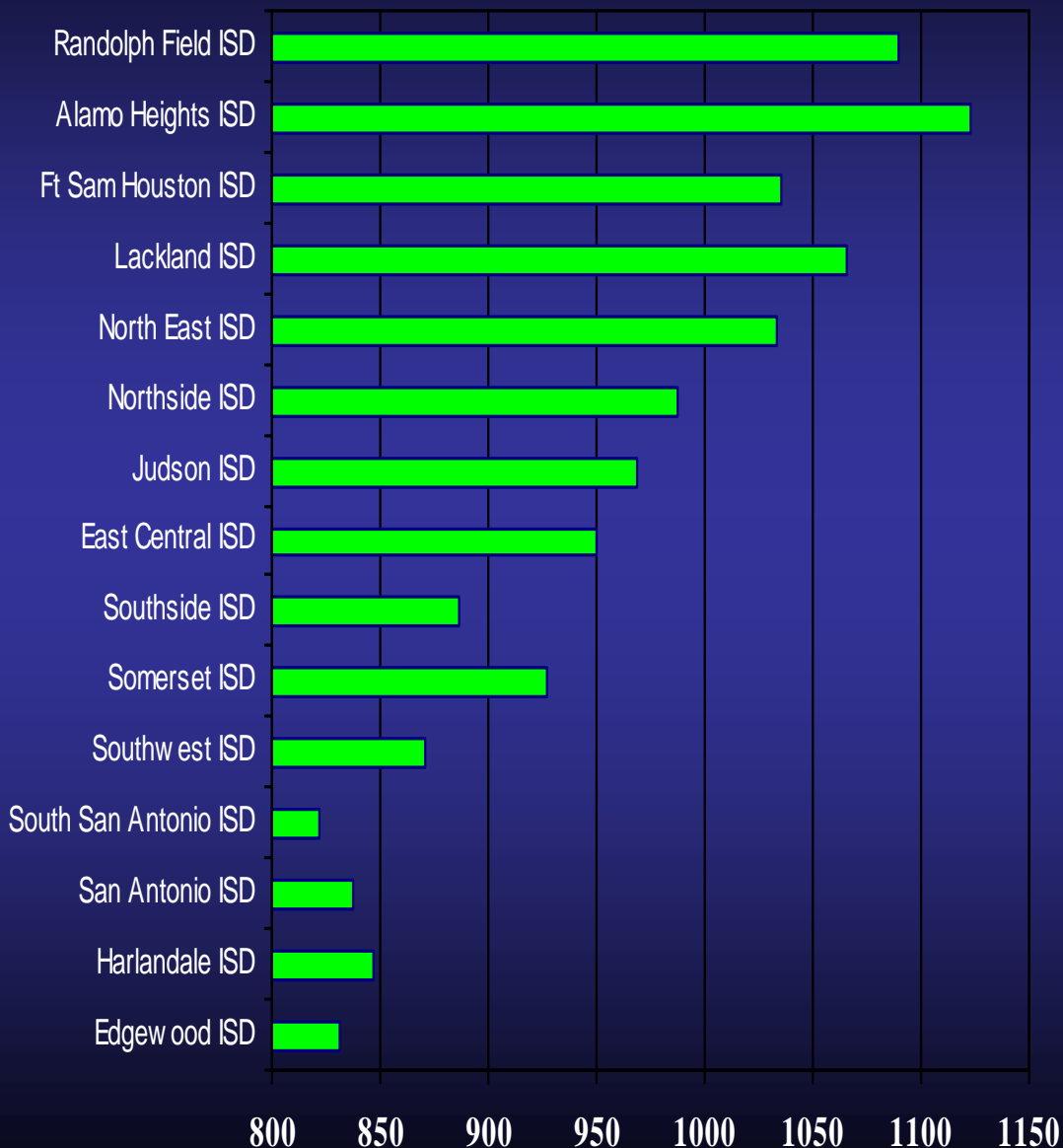
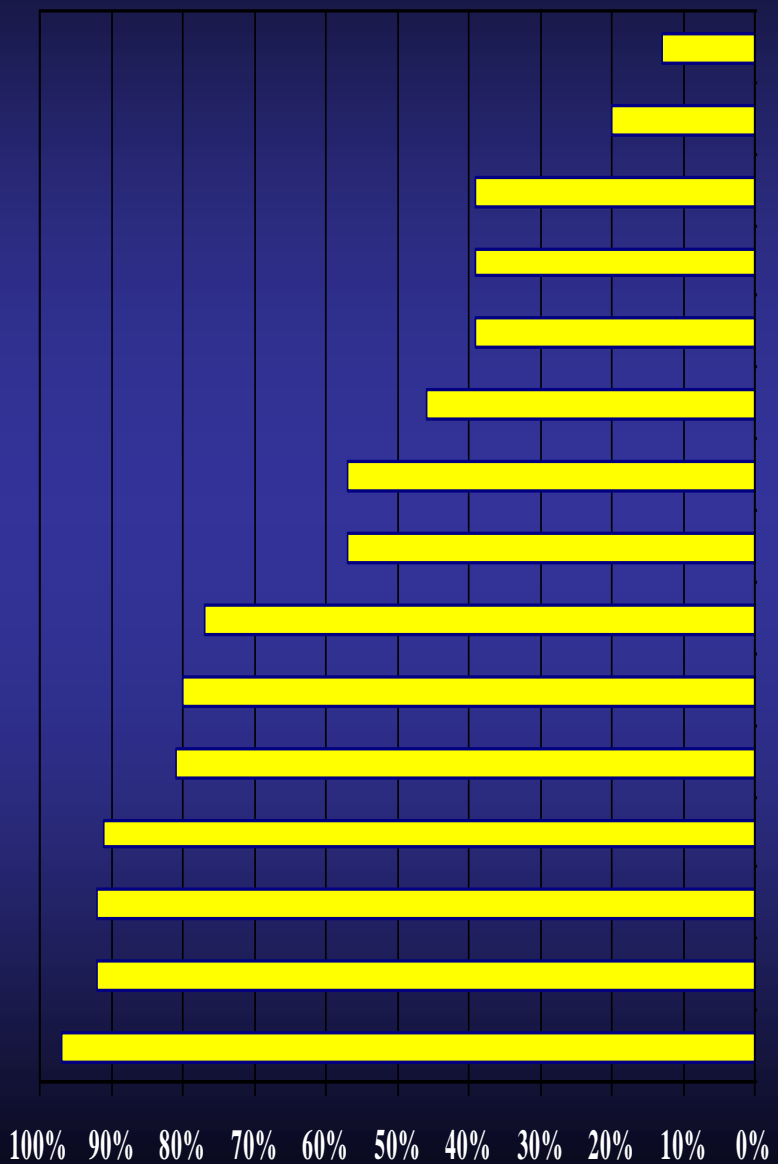


•\* David Satcher, M.D., Ph.D.

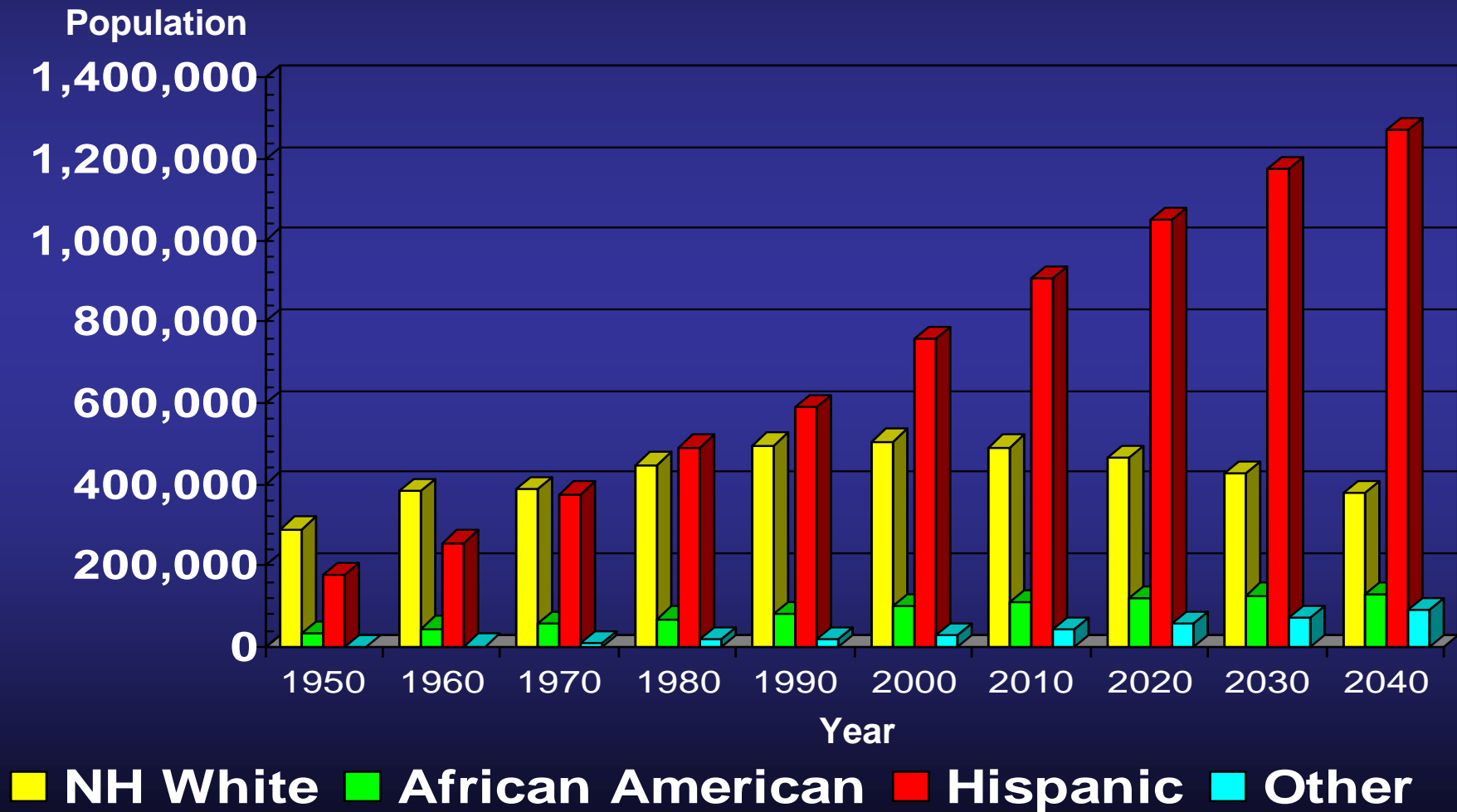
•\*\* Intercultural Development Research Association 06 /07 school year

**% Economically Disadvantaged Children by School District 2007-2008**

**SAT Mean Total Score by School District 2007-2008**

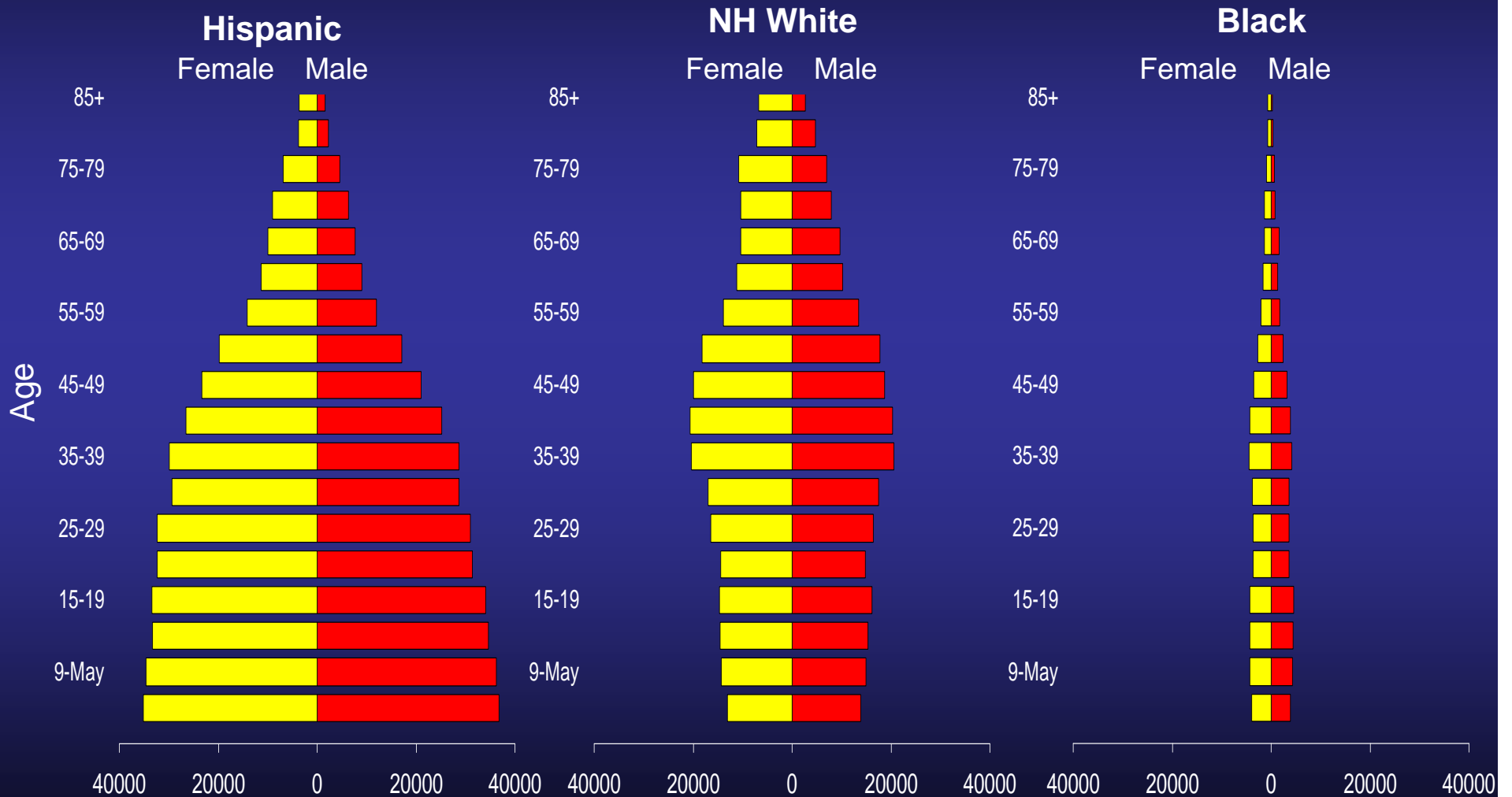


# Projected Population of Bexar County by Race and Ethnicity, 1950-2040



Source: U.S. Census and Texas State Data Center

# Bexar County Age Distribution (Hispanic, NH White & African American)



Source: 2000 Census

# Preconception Health, Prenatal Care, Pregnancy Outcomes

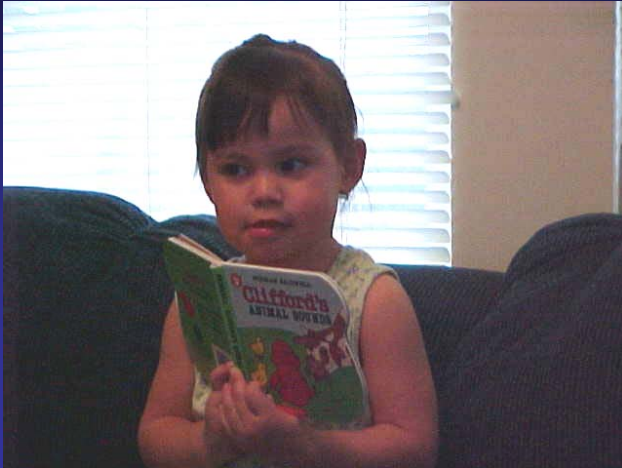
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- What occurs before or during pregnancy, some of the most powerful influences on outcomes are among the following:
  - Nutrition
  - Social Connectedness
  - Infection
  - Environmental Exposures
  - Substance Abuse
  - Unplanned Childbearing\*
  - Financial Security
  - Mental Health
  - Domestic Violence

\*Based on 2007 clinic data conducted in San Antonio, among 400 survey participants, 72% of mothers claimed they did not plan to get pregnant





# Substance Abuse

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- Mothers who use tobacco, caffeine or alcohol are at-higher risk for a premature birth and can impact the developing fetus.
- Substance abusing mothers are less likely to seek early prenatal care
- Substance abusing mothers are more likely to have pregnancy and delivery complications.

# Bexar County Scorecard – Maternal Health

Maternal Indicators	YR 2007	HP 2010	Status
Total Births	27,156		
Mother's Age <18	1,393 5.1%	5%	
Low Birth Weight <2500g	2,546 9.4%	< 5%	
Late Prenatal Care > 1st Trimester	7,421 27.3%	<10%	
Births to Single Mothers	11,836 43.6%		
Premature <37 Weeks	3,465 12.8%	7.6%	
Medicaid Births	13,619 50.2%		
Births to mothers BMI 30 & above before pregnancy	6,797 25.0%		
Births occurring < 24 mos previous birth	4,745 17.5%		
Births to mothers with < high school / GED education	7,513 27.6%		

\* Preliminary data subject to change.

# Bexar County 2007 Births to Mothers <22 Yrs. by Birth Order and Age

Birth Order	1	2	3	4	5	6	not given	Total
Age of Mother								
12	-	-	-	-	-	-	-	-
13	10	-	-	-	-	-	-	10
14	62	1	-	-	-	-	-	63
15	196	9	-	-	-	-	-	205
16	372	42	3	-	-	-	-	417
17	552	130	11	3	1	-	1*	698
18	742	227	58	3	-	-	-	1,030
19	874	346	102	17	1	-	-	1,340
20	807	484	192	41	9	-	-	1,533
21	646	527	234	83	25	3	-	1,518
Total	4,261	1,766	600	147	36	3	1	6,814

\* Birth order of infant not given in birth record

# *Infants of Substance Abusing Mothers*

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- Unfortunately, many women use drugs and alcohol before they know they are pregnant.
- Others continue to abuse drugs while pregnant as a result of addictions or mental problems.
- Abuse of alcohol or drugs during pregnancy can lead to severe health problems, eg., prematurity, LBW, infection, FAS.
- Babies born to substance abusing mothers may have withdrawal symptoms that vary from mild to significant (Neonatal Abstinence Syndrome (NAS))

# Births That Occurred In Bexar County 2005

	White NH		African American		Hispanic With a SSN		Hispanic Without SSN	
Total Births	8,078		1,527		16,679		2,067	
Mothers Age <22	1,051	13%	448	29%	5,214	31%	508	25%
Single Mother Births	1,695	21%	933	61%	7,952	48%	760	37%
Late Prenatal Care > 3	1,545	19%	561	37%	4,550	27%	687	33%
No Prenatal care	333	4%	87	6%	719	4%	319	15%
Medicaid Births*	2,349	29%	936	61%	11,029	66%	78	4%
Mothers Ed Years < 12	601	7%	325	21%	5,166	31%	1,206	58%
Cigarette use before preg	4,641	57%	620	41%	2,087	13%	88	4%
Premature <37 Weeks	932	12%	281	18%	1,606	10%	200	10%
LBW Infants (<2500 grams)	668	8%	267	17%	1,606	10%	144	7%
Diabetes - Gestational	255	3%	47	3%	720	4%	147	7%
Breast Fed	6,466	80%	715	47%	9,407	56%	1,820	88%
% of women receiving 4 or fewer prenatal visits	258	3%	164	11%	1,228	7%	406	20%

\*We used a lack of a SSN as an indicator of undocumented status

# Babies at Risk for Withdrawal Symptoms Born to Substance Abusing Mothers Neonatal Abstinence Syndrome (NAS)

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- Each year, San Antonio's hospitals withdraw on **average 120 newborns**.
- From 2002 to 2006, San Antonio saw a **30% increase** in newborns to substance abusing mothers.
- Average length of stay of NAS newborns was **24 days**.
- **30%** of NAS newborns were premature.

# Babies at Risk for Withdrawal Symptoms Born to Substance Abusing Mothers Neonatal Abstinence Syndrome (NAS) cont.

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- Approximately **8% newborns** who are infants of substance abusing mothers have slow fetal growth and fetal malnutrition.
- **On average \$1,500** a day is spent on each infant.
- Infants of substance abusing mothers were hospitalized for an **average of 23.6 days per year**.
- **The average cumulative annual direct medical cost for initial hospital stay was \$4.3 million.**

# San Antonio Hospital Discharge Data

Year	Total	Length of Stay (days)	Average	Slow fetal growth & fetal Malnutrition 764	Disorders relating to short gestation & low Birth weight 765	% Premature
2006	138	3,621	26.2	13	52	38%
2005	128	3,511	27.4	10	48	38%
2004	123	2,619	21.3	8	35	28%
2003	112	2,660	23.8	6	33	29%
2002	105	2,023	19.2	13	15	14%
Total	606	14,393	23.6	50	183	30%

Drug Withdrawal Syndrome In Newborn, data included a record for each patient with a ICD-9 diagnosis of 779.5 listed as primary or contributing cause

# Problems Identifying & Managing Substance Exposed Infants

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- Lack of public health resources to study substance-exposed infants
- Lack of hospital data on type of substance abuse and cost
- Training standards to reduce inter-observer variability on Finnegan scores on infants.
- Legal problems linking hospital data with Vital Statistics
- Lack of consistent standards in substance abuse treatment programs that treat pregnant women.

# Substance Abuse

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- Consider making NAS a reportable condition to allow for capturing the scope of the problem and facilitate research and effective interventions
- Domestic and family violence: Half of men who commit acts of domestic violence also have substance-abuse problems.\*
- Child Abuse: substance abuse exhibited by 81% of families reported for child maltreatment\*
- San Antonio needs a harm reduction program to help prevent infectious diseases (i.e. needle exchange program)
- Where A Child Lives May Be One Of The Most Powerful Predictors Of Child Health Outcomes\*\*

\* U.S. Department of Health & Human Services \*Integrating Pediatrics and Public Health, Jeffrey Goldhagen, MD, MPH ,PEDIATRICS Vol. 115 No. 4 April 2005, pp. 1202-1208\*\*

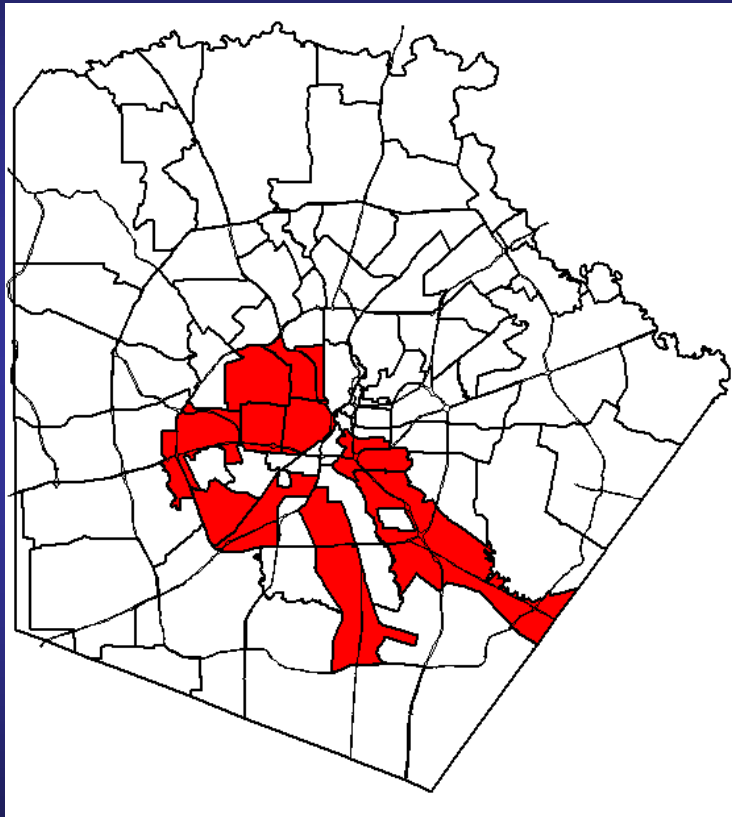
# Place Matters

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- Place matters because it determines what kind of physical or chemical agents you might be exposed to.
- It matters what kind of social environment you are exposed to.
- It matters if there's a lot of violence or crime in your neighborhood.
- It matters if it's easy to go for a walk in your neighborhood or find healthy foods.
- Health disparities may arise as a result of land use policies or the absence of policies.

# Disparity Indicators

10 Zip Codes of 72 (area in Red), account for 30% of population,  
% of Bexar County Totals



		% of County
High School Dropouts*	4,954	51%
Homicide	58	48%
Liver Cancer Deaths	68	48%
Child Abuse Cases	2,033	44%
Domestic Violence Cases	5,160	42%
Juvenile Probation	4,130	41%
Diabetes listed as primary or contributing cause	546	40%

Zip Codes selected for high numbers of single and teen mothers

\*2000 Census & 2006 indicators

**82% Hispanic, 3% African American**  
**Median Household Income \$26,824**

# 2007 Maternal Health Disparities

10 Zip Codes of 72 (area in Red), account for 30% of population,  
% of Bexar County Totals

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		% of County
Total Births	8,665	
Births to mothers with < high school / GED	3,770	50.2%
Births To Mothers Age <18	694	49.9%
Medicaid Births	5,922	43.5%
Single Mother Births	5,034	42.6%
Births To Mothers BMI 30 Before Pregnancy	3,045	38.7%
Births Occurring < 24 Months of Previous Birth	1,827	38.6%
Late Prenatal Care Births	2,826	38.1%
Premature Births <37 Weeks	1,260	36.4%
Low Birth Weight Births	887	34.8%

# Recommendations

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- San Antonio needs a comprehensive system for physical and mental health & substance abuse especially as it relates to mothers, infants, and children.
- Monitor the health system, outcomes, and impact on the community.
- Develop community-based management strategies for chronic illnesses.
- Integrate data from various sources for public health surveillance, reporting, policy-making, and allocation of resources.
- Social Justice considerations: to call attention to populations at risk and address disparities.

# QUESTIONS?

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*If Substance Abuse Was An Infectious Disease, It Would Be An Epidemic!*

<http://www.sanantonio.gov/health>

If you have any questions call John Berlanga 210-207-6976