# An Analysis of Infant Mortality and Low Birth Weight Rates in Texas

Applied Research Project
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To
**Marc Aaron Dobbing**--A brother I never got to know
**Timothy Sean Ellers**--A son whose potential was thwarted at birth
**Maury Lindsay James**--A grandchild, born healthy, with all
the promise life has to offer

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# CHAPTER ONE

## INTRODUCTION AND STATEMENT OF PURPOSE

### Introduction

The death or unnecessary suffering of even one child is a
tragedy. Infant mortality [IM] is defined as the death of an
individual who is less than one year old at the time of their
death (BVS 1991, 260). Low birth weight [LBW] is a birth
weight of less than 2500 grams or 5 pounds 8 ounces (BVS 1991,
261). Texas continues to experience higher than desired
infant mortality and low birth weight rates.

In 1990 the state of Texas suffered an infant mortality
rate per 1000 live births of 6.8 for whites, 7.3 for
Hispanics, but 14.6 for blacks. The low birth weight rate
[reported as a percent of total live births] for whites was
5.8, Hispanics 6.3, and for blacks 12.7. The Texas goal for
the infant mortality rate is 7.0 and the low birth weight rate
the goal is 5.0 (Texas Statewide Health Coordinating Council
1992, 39-40). The white and Hispanic rates are fairly close
to the stated goals, however, the black rate is most
disconcerting.

The most commonly recognized root causes for low birth
weight and infant mortality are; (1) education, (2) poverty,
and (3) access to and quality of care. There is no doubt
these factor affect the birth weight and infant mortality

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rates.  What is often mentioned as an explanation

for the problem of high infant mortality and low birth weight

rates, but not addressed in detail is, what this study will

call, the Socio-psychological/behavioral [SPB] dimension.

Although not specifically identified as the SPB dimension, it

is referred to in many ways through out the literature.  SPB

is sometimes identified as social conditions (Cooper 1992,

645), socioeconomic status (Cramer 1987, 299), behavior and

attitude (Eberstadt 1991, 36), and social-psychological (Reis

et al. 1992, 14).  This Applied Research Project was initiated

to examine these root causes of infant mortality and low birth

weight with emphasis on how they interact by race.  While the

root causes interact between themselves, and other sub-factors

such as urbanicity, this review investigates each separately

and then how they are manifested in Texas.

## Research Purpose

The purpose of this research is three fold.  First, to

examine factors attributed to the incidence of infant

mortality and low birth weight rate.  Second, investigate the

role of socio-psychological/behavior [SPB] as, possibly, a

significant factor in low birth weight and infant mortality

rates.  This will be developed as an alternative/complimentary

explanation through careful review of the literature.  Third,

to determine implications, if any, of these findings for

public health care administrators and public policy makers.

The state of Texas will be the focus of this inquiry.

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Infant mortality has long been considered an indicator of the health status and welfare of a nation. The United States rates poorly compared to other industrialized nations when infant mortality is considered. The United States has ranked only as high as fifteenth in recent years in the number of infant deaths per one thousand.

Low birth weight is the principal cause of death in the first weeks of a child's life. Howze identifies the ramifications of not reducing the low birth weight rate:

> There are two types of low-birth-weight infants: the truly pre-term infant, the infant born before 40 weeks; and the small-for-gestational-age (SGA), the infant born too small, a full term baby. Low-birth-weight infants account for approximately two-thirds of all neonatal infant mortality deaths (deaths of infants under 28 days per 100 live births) and constitute 50 percent of all deaths in the first year of life. If low-birth-weight babies survive, there is an increased likelihood that they will experience further hospitalizations and suffer developmental and physical complications. Numerous studies have associated low birth weight with increased occurrences of mental retardation, learning disabilities, birth defects, blindness, autism, cerebral palsy, epilepsy, visual and hearing disabilities, delayed speech, and chronic respiratory problems. Unfortunately, blacks are twice as likely as whites to have low birth weight infants and two and one-half times more likely than whites to have very low birth weight infants" (1987, 121)

The number of deaths attributed to low birth weight have shown little or no improvement in recent years. This phenomenon remains one of the chief causes of infant mortality in the United States.

National and state efforts to prevent, or at least to reduce, infant mortality and low birth weight rates have

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focused on education, poverty, and the lack of access to and the quality of care. These factors have been at the center of governmental programs designed to reduce both infant mortality and low birth weight rates since the 1960s. Billions of tax dollars—federal, state and local—are spent each year in an effort to mitigate these factors where maternal and child health care is concerned. Recently, the Public Health Service identified a need for health care providers to consider, what this study identifies as the socio-psychological/behavioral [SPB] factor in their health care delivery.

This study will attempt to identify and analyze each of the traditional factors [education, poverty, and access/quality] associated with infant mortality and low birth weight rates. Because it is an influential component, urbanicity will be examined. In addition, it will develop the arguments supporting the roll of SPB, as another explanation. Finally, it will attempt to demonstrate their combined effect on infant mortality and low birth weight rates for the year 1990 in Texas.

More specifically, during 1990 there was a distinct disparity along racial—white, black and Hispanic—lines. Blacks suffered a significantly higher incidence of low birth weight and infant mortality rates in 1990. At the conclusion of this research, weaknesses of the traditional explanations will be revealed. Further, the effect of SPB and its relationship to the other associated factors in Texas will be

better understood. Finally, any insights gained by this study may offer strategies for public health administrators and public policy makers to ameliorate the effects of SPB. The more effective the delivery of maternal and child health care, the better the measures of infant health will become. The lower the infant mortality rate and proportion of low birth weight, the more effective the distribution of tax dollars for maternal and child health care.

This study investigates the role of SPB in the racial disparity in infant mortality and low birth weight rates. The SPB role is be demonstrated by showing that explanations believed to be related to infant mortality and low birth weight rates are not verified across when race is controlled. This study does not refute the importance of education, poverty, or access to and quality of care and their affect on infant mortality and low birth weight. These effects are well documented in all the research. Previous studies present, in an obscure way, the SPB effect.

SPB is often referred to as social, socioeconomic, psychological, behavioral, or attitudinal influences on infant mortality and low birth weight rates. If the role of SPB is significant, the disparate infant mortality and low birth weight rates for blacks, compared to rates for whites or Hispanics, in Texas may be more the result of SPB than the effects of other factors. By controlling for the education, poverty, access/quality, and urbanicity factors across racial

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lines, the significance of SPB might be demonstrated--or at least indicated. Perhaps because SPB may be difficult to quantify, it is not well addressed in literature on the topics of low birth weight and infant mortality. Researchers have been content, until recently, to direct their attentions more to the effects of education, poverty and access/quality.

Research for this project indicates that there are basically two schools of thought on the factors and their effects as they relate to infant mortality and low birth weight rates. The two groups are categorized, for the purpose of this study, as (1) academicians and, (2) policy centered investigators. Academicians are economists, demographers, and public health scholars. Their analyses are centered in the methods common to "hard" scientific research. They use regression analysis, statistical models, an other such manipulations of data to study questions relating to those addressed in this research. The policy centered investigators are sociologists, political scientists based in public affairs, and other policy analysts of varying backgrounds. These two groups posit different theories which examine the influence of education, poverty, access/quality, and other factors on infant mortality and low birth weight rates.

The policy centered investigators maintain that lowering infant mortality and low birth weight rates is a function of equalizing the effects of education, poverty, and access/quality for pregnant women. They tend to dismiss the

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possibility that other factors may be as significant as those previously mentioned. They rely on content and social artifact analysis, usually using percentages, to substantiate their position. These analysts are practitioners of what Babbie refers to as reductionism (1989, 87). Their inquiry is constricted by their training. Further, their focus is in bringing minority, principally black, rates to those experienced by whites through the process of equalizing the factors listed above.

The academicians, on the other hand, attempt to quantify the effects of education, poverty, and access/quality, as well as other factors on infant mortality and low birth weights. They rely on more sophisticated data analysis such as regression, statistical modeling, or heavily scrutinized survey and social artifact data to address their research questions. They are more amenable to the possibility that there are other factors just as important as education, poverty, and access/quality.

This study will examine along racial lines each of the accepted factors, identified above, related to infant mortality and low birth weight rates. The racial descriptors to be used are black, Hispanic and white. These descriptors are used throughout the literature reviewed and are the major statistical identifiers used by the state of Texas in its data.

As they relate to infant mortality and low birth weight

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rates, the factors--education, poverty, access/quality, and urbanicity--will be analyzed separately to determine if there exists a disparity between races.

The literature reviewed was selected based on relevance to birth rates, infant mortality, and prenatal care. Prenatal care was researched because it is most directly affected by the root causes discussed above and has a significant effect on infant mortality and low birth weight (Eberstein et al. 1990, 419). If, by controlling for each factor, disparity is indicated along racial lines, the adequacy of the traditional explanation is suspect and an alternative explanation may be implied. If disparity is not indicated along racial lines, when controlling independently for each factor, evidence supporting the traditional explanation is validated. For example, if analysis reveals the percentage of black and Hispanic women who have at least a high school education is relatively the same, the traditional argument that education disproportionally affects LBW and IM rates across racial lines is invalid and an alternative explanation may be explored.

### Chapter Summaries

Chapter Two of the Applied Research Project reviews previous research conducted on the topics of infant mortality and low birth weight. The review focuses on the most commonly recognized root causes of infant mortality and low birth weight which are; (1) education, (2) poverty, and (3) access to and quality of care. A sub-category, urbanicity, will also

be scrutinized for its' effect on infant mortality and low birth weight. Further, the literature indicates a new, or at least under studied factor identified in this research as the socio-psychological/behavioral dimension.

The literature indicates a clear delineation between two schools of thought, discussed earlier, categorized as; (1) academicians and, (2) policy centered investigators. Each factor, education, poverty, access/quality, and socio-psychological behavioral, will be reviewed through the point of view expressed by these two schools of thought.

The setting chapter will outline the infant mortality and low birth weight rate experience of the state of Texas for the year 1990. Pertinent statistical information, by subtopic, will be introduced and discussed. The statistical information will be further subdivided and presented along racial lines so that perspectives addressed in the literature will be clarified for the state of Texas.

The methodology used in this study is presented in Chapter Four. This study will have elements of descriptive, explanatory, and exploratory research. The data used will be presented, usually, as analysis of existing data by percentages. Additionally, strengths and weaknesses of the research design will be presented. Conclusions which can be drawn from the findings of this research will be presented along with any implications for both public health care administrators and public policy making entities in the final

chapter of this paper.

# CHAPTER TWO

## REVIEW OF THE LITERATURE

### Introduction

The most commonly recognized root causes involved in low birth weight rate and infant mortality are; (1) education, (2) poverty (income, economics) and, (3) access to and quality of care. Where a woman lives through out her pregnancy is a consistent, yet minor, component of all the factors listed above. As such, it will be explored in this review of the literature. There is no doubt the root causes affect low birth weight and infant mortality rates. What is often mentioned, but not addressed in detail, is the Socio-psychological/behavioral [SPB] dimension. In fact, the SPB dimension is referred to in many ways through out the literature. It is sometimes identified as social conditions (Cooper 1992, 645), socioeconomic status (Cramer 1987, 299), behavior and attitude (Eberstadt 1991, 36), and social-psychological (Reis et al. 1992, 14).

This literature review examines these root causes of infant mortality and low birth weight with emphasis on how they interact by race. While the root causes interact between themselves, and other sub-factors such as urbanicity, this review looks at each separately. The literature selected for this project was based on relevance to birth rates, infant mortality, and prenatal care. Prenatal care is relevant

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because it is most directly affected by the root causes discussed above and has a significant effect on infant mortality and low birth weight (Eberstein 1990, 419).

**Literature Classification**

Research indicates there are basically two schools of thought on the factors and their effects as they relate to infant mortality and low birth weight rates. The two groups are categorized, for the purpose of this study, as (1) academicians and, (2) policy centered investigators (See Table 2.1). Academicians are primarily economists, demographers, and public health scholars/practitioners. Their analyses are centered in methodologies common to "hard" scientific research. They use regression analysis, statistical models, and other such manipulations of data to study questions relating to those addressed in this research. The policy centered investigators are sociologists, political scientists based in public affairs, and other policy analysts of varying backgrounds. There are differences between these two groups on the effect of education, poverty, access/quality, and other factors associated with infant mortality and low birth weight rates.

The policy centered investigators look upon lowering infant mortality and low birth weight rates as a function of equalizing the effects of education, poverty, and access/quality for pregnant women. They tend to dismiss the possibility that other factors may be as significant as those

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mentioned. They rely on content and social artifacts analysis, usually using percentages, to substantiate their position. These analysts are practitioners of what Babbie refers to as reductionism (1989, 87). Their inquiry is constricted by their training. Further, their focus is in bringing minority, principally black, infant mortality and low birth weight rates to ratios experienced by whites through the process of equalizing the factors, for minorities, being examined in this study.

Academicians, on the other hand, attempt to quantify the effects of education, poverty, and access/quality, as well as other factors on infant mortality and low birth weights. They rely on more sophisticated data analysis such as regression, statistical modeling, or heavily scrutinized survey and social artifact data to address their research questions. They are more amenable to the possibility that there are other explanatory factors just as important as education, poverty, and access/quality. The academicians are primarily demographers and health service professionals. The policy centered investigators are based in political science, sociology, or policy analysts of varying backgrounds. Each view is reported in this presentation.

# Table 2.1

## Classification of References

| Author | Category | Topic | Methodology |
|---|---|---|---|
| Lindert | Academician | Poverty | Various Methods |
| Buescher & Ward | Academician | Poverty, PNC | Logistic regression |
| *Cramer (1988) | Academician | IM racial trends | Log-linear regression |
| *Cramer (1987) | Academician | IM social factors | Log-linear regression |
| Eberstein, Nam, and Hummer | Academician | IM causality | Mulitnomial logit regression |
| Joyce & Grossman | Academician | PNC | Statistical modeling |
| Kahler et al. | Academician | PNC, poverty & birth outcomes | Multivariate analysis |
| Livingood & Woodhouse | Academician | Educational concepts | N/A |
| Nassipour & Jensen | Academician | PNC, birth outcomes | Multiple regression |
| *Pampel & Pillai | Academician | IM patterns | Multiple regression |
| Poldenak | Academician | IM racial patterns | Multiple regression |
| Reis et al. | Academician | Black attitudes | Chi square |
| Santerre | Academician | International | Multiple |
| Grubaugh & Stollar | | IM comparison | regression |
| Schoendorf et al. | Academician | IM and education | Stratified univariate analysis |
| *Weeks and Rumbaut | Academician | Ethnic IM | t-test, p-value |
| Butler | Policy | Race/economics | NONE |
| Howze | Policy | IM rates | NONE |
| Jencks | Policy | Poverty, Policy | NONE |
| Moynihan | Policy | Poverty | NONE |
| Weiner & Engel | Policy | Poverty, access | NONE |
| The White House Domestic Policy Council | Policy | Access, health policy | N/A |
| Wilson | Policy | Poverty, access, education | NONE |
| Cooper | Policy | Poverty, access, education | NONE |

**Table 2.1 Continued**

| Author | Category | Topic | Methodology |
|--------|----------|-------|-------------|
| Eberstadt | Policy | Poverty, access vs. other nations | NONE |
| Hale | Policy | IM Policy | NONE |
| Longest | Policy | Health policy | NONE |
| **Schlesinger & Kronebusch | Policy | PNC results | Various methods |

NOTE:  1.  Governmental and quasi-governmental references used in this study are not included in this table.

2.  In the Methodology column, "NONE" indicates that no methodology is attempted by the author(s).  They do support their position through the use of various public domain information with no additional analysis.

IM = Infant Mortality
PNC = Prenatal Care

\*   Author(s) is a sociologist by training and an exception.
\*\*  Author(s) is an economist by training and an exception.

## Education

Educational attainment has long been considered a meaningful contributing factor in birth outcomes (Eberstadt 1991, 37). The education level of mothers is a significant factor in explaining low birth weight and infant mortality, particularly for women with a high school or less education. The higher the educational level of women, the more inclined they will be to adopt life styles that are supportive of a higher probability of desired prenatal care practices and birth outcomes (Pampel and Pillai 1986, 526).

Mothers who do not have a high school education are more likely to have fewer prenatal visits (Eberstadt 1991, 40) or adequate prenatal care (Weiner and Engel 1991, 4). This is true even for women receiving Medicaid, where costs to the individual are not a consideration (Nassipour and Jensen 1992, 41). This fact is significant because it is often believed that uneducated women can't afford prenatal care, eliminating education as a factor, and therefore do not seek the service (Pampel and Pillai 1986, 527). These studies show that education and not income is a crucial determinant of healthy births.

For black and white mothers over age twenty, the infant mortality rates for unmarried but college-educated women was greater than for married high school graduates or dropouts (Eberstadt 1991, 37). Although education is important, it does not account for differences by race. For example,

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Schoendorf et al. found in their study of parents who were white and black college graduates that the infants of black college educated parents were more likely to be low birth weight infants (1992, 1523). Also, they noted that normal birth weight infants born to both black and white college educated parents were equally likely to survive their first year of life (1992, 1525).

The Weeks and Rumbaut study of recent immigrants, from third world countries, to the United States indicates the effect of education is not as great as some would think (1991, 329). These immigrant mothers who had little to no formal education enjoyed a much better infant mortality rate than blacks and was comparable to whites and Hispanics; yet these recent immigrants experienced education levels which were much lower than blacks, whites, or Hispanics in the same area being studied (Weeks and Rumbaut 1991, 330). The study was limited by data available from vital statistics records, but the authors speculated that one factor contributing to the study groups' results was a positive cultural attitude toward pregnancy and children (Weeks and Rumbaut 1991, 333). The Weeks and Rumbaut study confirmed other previous studies (1991, 327).

While education is a contributing factor in the incidence of low birth weight and infant mortality, this literature review indicates the effect is not uniform. This study will examine education using the following hypotheses:

H: 1.1    If education is controlled, the infant mortality rate will be similar by race.

H: 1.2    If education is controlled, the low birth weight rate will be similar by race.

Some researchers tend to concentrate their attention on the poverty aspect of the infant mortality and low birth weight problem. The next section examines literature which is focused on the effects of poverty on infant mortality and low birth weight rates.

## Poverty

Poverty is referred to in the literature in many different ways. The official poverty rate was formulated by the Social Security Administration in 1964. It was derived by calculating the cheapest cost of feeding a family for one year. There have been modifications, principally the inclusion of an adjustment for inflation, over the years, but they have been few and far between (Wilson 1987, 170). Others feel the poverty rate is an index measuring wealth (Eberstadt 1991, 33). The rate is expressed by income in a given year. In 1990, the poverty level for a family of three was $10,560; the federally mandated level of 133 percent of the poverty level for receiving assistance, raised the income ceiling to $14,045 (Children's Defense Fund 1992, 11).

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Policy makers routinely accept poverty as the chief

explanation for infant mortality. They theorize that infant

mortality is a result of the proportion of children in poverty

(Eberstadt 1991, 32). While some discuss poverty as income,

others speak of it in terms of economics.

In the 1978 book, <u>Fertility and Scarcity in America</u>,

economist Peter Lindert concluded:

> There seems to be good reason for believing that
> extra fertility affects the size and quality of the
> labor force in ways that raise income inequities.
> Fertility, like immigration, seems to reduce the
> average quality of the labor force, by reducing the
> amounts of family and public school resources
> devoted to each child. The retardation in the
> historic improvement in the labor force quality has
> in turn held back the rise in incomes of the
> unskilled relative to those enjoyed by skilled labor
> and wealth holders. These connections have been
> revealed by comparison of trends in American income
> inequity with trends in fertility, immigration, and
> the growth in the size and quality of the labor
> force. (258)

Lindert seems to be suggesting that fertility is

directly relative to the disposable incomes of families which

lowers the quality of educational and public resources

available to counteract poverty. The poverty status of

individuals causes their skill level to remain

low and therefore their incomes also remain low. As the

fertility rate is a product of poverty, it follows that, as

the poverty status increases so does the fertility rate. The

vicious cycle continues. Lindert's findings could contribute

to explaining the irregular status of the U.S. compared to

other industrialized nations where it is commonly accepted

that the standard economic and demographic factors explain infant mortality (Santerre et al. 1991, 10).

The decline of infant mortality by developed nations is normally seen as a result of higher standards of living, urbanization, and better medical care resulting from economic development. The modernization of the role of women and their birthing practices have also had an effect on the decline in infant mortality. Research indicates (1) women are having fewer children, (2) women having children are somewhat older when giving birth, and (3) they are better educated. These changes have lowered the probability of infant death. In the U.S. where the economy and demographic changes exceed the decline in infant mortality, the accepted explanations may not be accurate (Pampel and Pillai 1986, 525). According to Pampel and Pillai, "No study tests explanations of patterns of infant mortality among developed nations, leaving a major gap in the empirical literature on mortality (526)."

The economic growth of a nation tends to lower infant mortality, but there is no evidence that inequity in income or diversity combines to raise mortality (Pampel and Pillai 1986, 535). Yet, neonatal mortality is effected the most by changes in gross national product, while urbanization positively affects the survival rate of infants between their, post neonatal, first month and one year of age (Pampel and Pillai 1986, 531-532). Similar conclusions were reported by Santerre, et al. (1991, 10-11). The economic growth of

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nations are heavily influenced by governments.

**Government**

Governments have been and remain heavily involved in the
economic condition and health status of their nation.  This
involvement, as indicated above, has an effect on infant
mortality and low birth weight.  The government of the United
States, and each state individually, recognizes their role and
has over the years devised programs to ameliorate these
problems.  The next step in this review is to look at programs
available to mothers and their children in the United States.
The programs offered revolve, primarily, around the poverty,
or income, status of the mother.  Conversely, Eberstadt found
that the states with the lowest infant mortality rates
suffered from the lowest per capita incomes (1990, 10).

Maternal and child-care services are distributed among
fourteen programs in the federal government (Hale 1990, 24).
Those most affecting infant mortality and low birth weight
rates are Medicaid--which funds prenatal, birth and
maternal-infant care--and the Women, Infants and Children
[WIC] nutrition program. Federal law requires that states
offer Medicaid to single, poor mothers and their children.

**Medicaid and WIC**

Medicaid is the chief health financing program for the low
income female and child population of the United States.
Nationally, Medicaid funding accounts for about nine percent
of the women ages 15 to 44 ( Hale 1990, 22).  The eligibility

criteria for Medicaid has been historically the province of the individual states. National standards of care and state reporting requirements were eliminated by Congress in the 1980s. The eligibility requirements are also at the discretion of the providers receiving their grants (Hale 1990, 21). What has been the result of these programs?

The National Center for Health Statistics found in a 1982 study that the income line should be set at one hundred and fifty percent in order to see no change in the incidence of low birth weight (Eberstadt 1991, 36). In an Institute of Medicine study, the researchers estimated that for every one dollar spent to improve prenatal care for persons eligible for Medicaid, there would be a savings of over three dollars in the infants first year of life. This would be realized by reducing the number of low birth weight babies born (Weiner and Engel 1991, 4).

One way to reduce the number of low birth weight babies is to increase the number of prenatal care visits made by the mother (Nassipour and Jensen 1992, 36, 40). Yet, Medicaid recipients tend to be young, unmarried and less educated, therefore, they report late for prenatal care (Nassipour and Jensen 1992, 41). The result of reporting late was that the Medicaid funded mothers tended to have more pregnancy complications (Nassipour and Jensen 1992, 16).

Women who were participants in a WIC program were more likely to seek prenatal care (Kahler 1992, 62). Where a WIC

center was located near a black population, the women were more likely to seek care in a timely manner. The effects of WIC and Medicaid are readily apparent when information about those women who do not, or can not utilize these services is considered. Women, regardless of race, living at or above the poverty line initiated care later than women in the poorer areas. Unmarried white women-again living at or above the poverty line-began care later than either married women and blacks regardless of marital status (Joyce and Grossman 1990, 12). Conversely, in 1986, white women reporting no prenatal care experienced an infant mortality rate three and one half times the national average; blacks, reporting no prenatal care, in that same period suffered at three times the national average (Eberstadt 1991, 39). The effects of prenatal care outlined above are only as good as the quality of and access to it.

Poverty aspects of infant mortality and low birth weight are many and the literature reviewed for this study indicates various effects. This study will explore the topic using the following hypotheses:

H: 2.1    If poverty is controlled, the
          infant mortality rate will be
          similar by race.

H:2.2     If poverty is controlled, the low
          birth weight rate will be similar
          by race.

The next area of literature to be reviewed will be access /quality aspect of infant mortality and low birth weight.

## Access/Quality

Access to prenatal and infant care involves many factors. Those most commonly mentioned are funding, adequate numbers of health care providers and facilities, and discriminatory or racial barriers (Longest 1988, 421). Quality is closely linked to access. Simply stated, quality is the degree of adherence to pre-established criteria or standards. The government and the health care industry have established the qualification standards for medical care delivery, the facilities, equipment, and staff qualifications (Shortell et al. 1988, 439). The discussion in the previous section indicated the significance of care on infant mortality and low birth weight results. If care is not accessible or the quality is suspect, the birth outcome will be affected.

### Access

There are those who maintain that to have access in care for pregnant women many things are necessary. Most vocal among these groups is the Children's Defense Fund [CDF]. The CDF believes that to assure access in care to pregnant women the pregnant woman should:

    a.    be afforded specialized care if they are identified as a high risk pregnancy.

    b.    not have to wait for more than one hour before being seen in a doctors office or clinic.

    c.    not have to wait for appointments. This means that having an appointment for more than two weeks from the date requested is not acceptable.

    d.    have adequate services available in convenient locations.

e. have child care facilities available at the clinics or doctors office.

f. have assistance with transportation needs to be able to get to the care.

g. have clinic hours in the evening and on week-ends.

h. Where necessary, have a bilingual staff.

i. have clinic staff who are professional and treat patients with dignity (Children's Defense Fund 1992, 7).

The Longest study reported that the availability of medical personnel and their charges has little effect on the accessibility of prenatal care (1988, 422). Availability simply means there are adequate medical personnel to provide prenatal care services. Yet it is often viewed in the context of being able to afford care (Jones and Rice 1987, 7). This misconception of availability is negated because rates charged by medical professionals and the funding sources to pay these charges is of little consequence when seeking prenatal care (Schlesinger and Kronebusch 1990, 102). This finding is supported by Kessner score information.

Kessner index scores are a comparative measure of the adequacy of prenatal care. Kessner scores are the measurement of three items. They are (1) the length of pregnancy, (2) timing of the first prenatal care visit, and (3) number of visits for care. This data is taken from the birth certificates filed with the state ( Bureau of Vital Statistics 1991, 259). The measurements of timing of the first prenatal visit and the number of visits of care are the most

significant factors of the three. The earlier in the
pregnancy and the more visits for prenatal care treatment, the
greater the potential for a satisfactory birth result and
healthy child. Information from the Kessner scores indicate
differences along racial lines. Most studies are concerned
with the black versus white differential.

There is fear among some that the gap between the two
races, black versus white, is indicative of a lack of access
to care (Howze 1987, 120). Pampel and Pillai concluded that
lowering mortality is easier when the population of the nation
is less socially diverse and homogeneous ethnically (1986,
534). In 1990, there were only 3.4 percent of mothers in
Texas who did not receive prenatal care (Bureau of Vital
Statistics 1991, 22). Racially, whites attributed with having
an adequate prenatal care experience was 74.2%, blacks 50.1%
and Hispanics 45.6% in Kessner index scores for 1990 (Bureau
of Vital Statistics 1991, 72). Those who received inadequate
prenatal care according to the Kessner scores weres, (1)
whites-6.8%, (2) blacks-18.6%, and (3) Hispanics-20.7% (Bureau
of Vital Statistics 1991, 73). While there is a significant
difference between white and blacks in Texas, the difference
between whites and Hispanics is even greater.

It is clear these numbers need to improve. Urban women
enjoy better access to prenatal care than do women living in
rural areas (Schlesinger and Kronebusch 1990, 103). Urban
areas have a higher number of clinics and hospital outpatient

departments than do rural areas. Kessner scores for women who used clinics or hospital outpatient departments, usually found in urban areas, enjoyed a better birth outcome than did those who were treated by their private physicians. This was true even for those women who began their care later in their pregnancies (Schlesinger and Kronebusch 1990, 102). These findings are contrary to popular belief about the value of private physicians in health care delivery and the effects of competition on the health status of pregnant women and their babies.

Managed competition between health care providers is the cornerstone of the Presidential health care plan. It has been found to have an adverse effect on birth weight. Mark Schlesinger and Karl Kronebusch found in their study on prenatal care for poor women that the only characteristic adversely affecting birth outcomes was competition between providers (1990, 103). They found that where (1) charges were lowered, (2) Health Maintenance Organizations [HMOs] entered the market, and (3) an abundant number of providers were available to the population, birth outcomes were actually adversely affected (1990, 103). In fact, they found that a system of prenatal care founded in clinic care or hospital outpatient departments was the more preferable method of prenatal care delivery. Since these types of care are funded, at least in part, by a governmental entity, it follows that participation in state prenatal outreach programs and Medicaid

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enrollment would improve access to prenatal care and birth
outcomes (Schlesinger and Kronebusch 1990, 99, 107).

**Quality**

Again, quality is closely linked to access. The medical
profession along with medical support professions are
constantly working to improve the standards of medical care
provided. The diagnosis and treatment of patients is assessed
based on professional standards (Shortell et al. 1988, 439).
The success of their endeavors is evident in the reverence the
rest of the world holds for American medical practices. The
medical system in the United States has been found to have no
harmful effects on infant mortality (Pampel and Pillai 1986,
537). The quality of prenatal care in a variety of prenatal
care facilities has not been widely studied; in fact, there
were no published studies as of 1990 that proved the highest
quality of prenatal care was rendered by private physicians
(Schlesinger and Kronebusch 1990, 96). Christopher Jencks
reports that before 1964 poor families visited a doctor, on
average, four times per year while middle-income families
visited five times per year. Conversely, after the
institution of Medicaid and Medicare, utilization by
middle-income families fell to four times per year while the
poor were seeing doctors almost six times per year (1992, 74).
Clearly, the literature indicates that access to and quality
of care for the poor is equal to and perhaps better than many
middle-income individuals. This study will contemplate two

hypotheses on the topic of access/quality. They are:

H: 3.1    If access/quality is controlled,
          the infant mortality rate will be
          similar by race.

H: 3.2    If access/quality is controlled,
          the low birth weight rate will be
          similar by race.

As previously discussed, urbanicity is a sub-factor to the
identified root causes--education, poverty, and
access/quality--of infant mortality and low birth weight
rates. Because most of the literature scrutinized in this
study deals with urban areas it will be examined in the next
section of this literature review.

## Urbanicity

The literature also makes reference to an urban-rural
dichotomy. The studies examined in this literature review
predominantly analyzed urban regions. The subject is
interwoven, in the studies reviewed, into the larger topics of
education, poverty, access/quality, and socio-psychological
/behavioral causes for infant mortality and low birth weight
rates.

The infant mortality, and subsequently the low birth
weight rate, of developed nations is considered to be
affected, lowered, in part by the urbanization of a population
(Pampel and Pillai 1986, 525). Urban women enjoy better
access, and therefore better quality prenatal care than do
women from rural areas (Schlesinger and Kronebusch 1990, 103).
Cramer suggests that, while many studies about racial trends

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are made on a national scale; it is far more preferable to study the topic on a sub-national, state or regional, level (1988, 165). One of the reasons to study this topic on a lower, state or regional, level is the variance in the degree of urbanization by racial populations in various quadrants of the country (Cramer 1988, 165). According to Hale, residing in an urban area was found to be a "powerful predictor" of birth outcomes (1990, 21). Unlike earlier studies, Reis et al. found that the urban woman was more adversely affected by SPB influences (1992, 19).

In comparing Medicaid participant birth outcomes between urban and rural populations, Nassipour found that residence was an important variable and a rural resident could expect to enjoy better birth outcomes (1992, 40). Poldenak confirms Nassipour and attributes the difference to economic, access/quality issues, maternal education and their decision making process (1991, 1481). In addition, drug abuse, especially in urban communities, has been touted as being more prevalent in black, rather than white or Hispanic, communities. The evidence is unclear on this point (Clifford 1987, 145).

This study will examine urbanicity using the following hypotheses:

  H: 4.1     If urbanicity is controlled, the infant
             mortality rate will be similar by race.

  H: 4.2     If urbanicity is controlled, the
             low birth weight rate will be
             similar by race.

The literature reviewed to this point indicates the traditional factors associated with infant mortality and low birth weight, education, poverty, and access/quality, fail to provide a complete explanation for differences experienced along racial lines. The next section presents a complementary explanation.

## Socio-Psychological/Behavioral--SPB

### SPB Defined

What is socio-psychological/behavioral? Culture is an important part of every persons life. What constitutes a culture can not be readily defined, but includes customs, beliefs, knowledge, values, institutions, habits, and skills that influence the individual and are therefore in a constant state of flux. These shared norms are believed to be psychosocial in nature. The norms are structured around mores and sanctions of the culture in which the individual is a part. The individual learning process tends to happen within the confines of a social context. This social context is the result of the individuals' environment, how they internalize learning and behaviors, and the reaction of their society to

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the individuals' action.

In the United States, a person can identify with more than one cultural heritage, usually dominated along their ethnicity/race lines. Within their sphere of influence, different dimensions of the individual can be independent of one another. It is the amalgamation of all of these factors that constitutes socio-psychological/behavioral activity. The mixture of social factors, at some point, manifests into biological realities, but how and when is not clear either in the literature or in concept (Eberstein, Nam and Hummer 1990, 426).

**Empirical Evidence**

Janet Reis et al. examined the family dominated social support system of an urban area population, 98 percent black, and its effects on prenatal care (1992, 14). The study was initiated in order to examine the social and psychological factors of prenatal care addressed by a Public Health Service expert panel in 1989. This panel found that an emphasis on the psychosocial aspects of prenatal care was necessary (Reis et al. 1992, 14). A woman's attitude about pregnancy and her concepts about the usefulness of prenatal care has a large effect on the perception of access to prenatal care. This attitude is based on beliefs and knowledge (Schlesinger and Kronebusch 1990, 101).

Support for the pregnant woman includes such things as spousal support, family concern about health, lifestyle

choices--diet, alcohol and drug use, tobacco use, etc.--, and work activity while pregnant (Weeks and Rumbaut 1991, 332). Women, in the Reis and Schoendorf studies, who felt they were strongly influenced by their family structure were less likely to use prenatal care services (Reis et al. 1992, 14: Schoendorf et al. 1992, 1525). In fact, Reis et al. found that 36 percent of the women surveyed, of which 98 percent were black, reported the men in their lives was the single most important source of how to care for themselves during pregnancy (1992, 18). The Reis survey also found that both men and women felt drug use among pregnant women was under reported by women. Both the males and females interviewed believed that access problems commonly attributed to poor prenatal care, such as location of clinics, hours of operation, poor physician care, and cost, were not a barrier to obtaining prenatal care. The Reis study participants also felt that families did not actively encourage women to seek the prenatal services of a physician (1992, 17). This may be indicative of social attitudes or the traditional family structure many blacks in an urban area have come to accept.

Christopher Jencks discusses the findings of Oscar Lewis, who postulated that the cultural attitudes experienced during the first seven years of life became a part of the childs' persona in later years (1992, 215). The public interactions within a neighborhood reinforce these cultural impressions (Jencks 1992, 215). William Julius Wilson takes the position

that poor cultural practices are reinforced by other influences such as poverty, unemployment, and inadequate church support (1987, 82). John Sibley Butler believes that the black church has been so consumed with politics and civil rights issues that ensuring a strong cultural support system has been sacrificed (1991, 326; Telephone interview 20 December 1993). The effect of the black church on behavior is well documented.

Frederick C. Harris found that church attendance was a strong predictor of voting behavior (1993, 63). In fact the black church goer votes more regularly and in a higher percentage than do whites (Harris 1993, 62-3). Black church goers receive political messages at their worship services at a greater level than whites (Harris 1993, 63). This information indicates the black church is quite effective in encouraging unified communal action. Religious influence in the black community, as in other ethnic communities, provides both a social and psychological foundation for behavior that could be considered morally motivated.

Hispanics have a stronger traditional religious [Catholic] dogma and communal support structure. These structures and practices are believed to be a significant aspect relative to child birth and pregnancy (Cramer, 1988 310; Schlesinger and Kronebusch 1990, 102). This phenomenon of positive familial influence, as having a beneficial effect on pregnancies, is repeated in other cultures as reported by Weeks and Rumbaut

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(1991, 333). It could also partially explain the Kessner index scores, previously discussed, where the Hispanic population had worse Kessner scores than either blacks or whites in Texas, yet had infant mortality and low birth weight rates comparable to whites and twice as good as blacks in 1990.

Birth weight and infant mortality are linked to background and similar variables [SPB] such as late initiation of prenatal care [discussed above], nutritional deficiencies, low socio-economic status, illegitimate birth rates, and poor educational levels (Eberstadt 1991, 421; Howze 1987, 123). Eberstadt found that the spending patterns, of the poor in the United States, for food and non-alcoholic beverages, as a percentage, is lower than many European nations. Further, the Eberstadt study noted when the poverty line index was applied to other nations, the U.S. had as good or better infant mortality rates (1991, 34). They found, according to the Consumer Expenditure Survey, low income people in the United States believed they could afford to spend much more on alcohol, tobacco and entertainment than on health care (1991, 45). The Consumer Expenditure Survey findings support the Eberstadt study which found there was not a feeling of necessity among the poor to purchase health care (1991, 45).

Poor health or nutrition habits transcend income levels. In the Schoendorf et al. study, the authors concluded that the

higher black rate of prematurity of children born to college educated women could be attributed to factors such as poor health habits during pregnancy and psychological risks contributed to by psychosocial activity (1992, 1525). Psychosocial activity manifests itself in many ways such as lifestyle choices and composition of the family.

Lifestyles and the structure of the family can be attributed to cultural patterns, discussed above and governmental programs.

> If parental lifestyles and family-formation patterns play a direct and important role in determining infant survival chances, the prospects for reducing American infant mortality rates through government income support and health care policies may be less substantial than is sometimes supposed (Eberstadt 1991,10).

John Sibley Butler goes further by implying that a large portion of underclass blacks have developed a culture built around the welfare system (Telephone interview, 20 December 1993).

Low income women are often charged with having more children in order to increase their incomes through the Aid For Dependent Children [AFDC], WIC, and other governmental programs predicated on the number of offsprings (Wilson 1987, 78). This activity is counter productive in attempting to reduce infant mortality and low birth weight rates. Low income women who could be using their WIC and supplemental food program benefits, due to pregnancy, are feeding their other children instead of taking better care of their own

nutritional needs (Weiner and Engel 1991, 9). Hispanics enjoy higher birth weight babies than blacks or whites. Again, this is attributed, in part, to their lifestyle, which includes nutrition and non-use of alcohol and tobacco or drugs during pregnancy (Schlesinger and Kronebusch 1990,102). Along with the nutritional aspect of governmental involvement is the attitude toward abortion.

## Abortion

Women receiving assistance, i.e. welfare, were found to be significantly less likely to use contraceptive devices (Wilson 1987, 78). These women did not use contraception even though they self reported not wanting additional children (Wilson 1987, 79). The stigma attached to illegitimate children in other cultures is not as pronounced in poor black communities than in others (Wilson 1987, 74). Wilson further indicates, and supports through a number of studies, that familial influences and personal characteristics do not discourage pregnancy and this attitude may be linked to receiving AFDC (1987 75,78). For those children who are born, a Centers for Disease Control monthly report related that socioeconomic support of a mother does not affect the survival rate of an infant (Eberstadt 1991, 37).

## Cultural Identities

Throughout this literature review it has been noted that blacks are different than both whites and Hispanics. What is

different about them?  In 1992, the U.S. Department of Health

and Human Service-Alcohol, Drug Abuse, and Mental Health

Administration published a guide which deals with different

ethnic and racial communities.  This guide is based on

empirical evidence and is a compilation of reports of experts

in each ethnicity.  They were quick to point out that there is

no stereotype-type which can be applied to the black community

(1992, 37).

The male/female relationship, according to DHHS, was

characterized as being one in which the female looks to marry

a "good man" who will commit to caring for children and the

family unit.  The man, on the other hand, is more interested

in a woman who will supplement his income, satisfy his sexual

desires, allow him freedom to do as he pleases, and not stifle

him (OSAP Cultural Competence Series 1 1992, 45).  Black males

are not concerned with creating a secure situation or

relationships within the family because their culture has

based itself on reliance on the extended family (OSAP Cultural

Competence Series 1 1992, 44-45).  These findings are accurate

characteristics of most blacks living in urban areas, and some

rural areas of the United States according to John Sibley

Butler, (Telephone interview, 20 December 1993).

Hispanics, on the other hand, are more family oriented.

Hispanics are predominantly Catholic.  The law of the church

is that marriage is seen as a union of two people for life.

Children are the responsibility of the parents and their care

and upbringing is an intense part of the Hispanic culture.
The guide indicates there is a conception of female Hispanics
seen as passive, but they report this is not the case.
Hispanic females are more demanding where familial matters are
concerned. Males are receptive to these demands and take a
greater responsibility in the family life more than other
ethnic groups.(OSAP Cultural Competence Series 1 1992,
120-122). Responsibility and commitment appear to be
significantly different.

## Individual Responsibility

Since the beginning of time, human health has been
determined, in large part, by their behavior, nutrition, and
the nature of their environment. Since the Industrial
Revolution, medical professional, scientific, and
technological advances have tended to replace personal aspects
of health responsibility. The attitude has been that
medicine, science and technology can cure or at least
successfully treat diseases and maladies of human health.
This perspective gives one permission to deny death and
disease and be irresponsible in personal habits because if
something went wrong, well, science, medicine, or technology
had the answer or cure. Well, with all things there comes a
point of maximization of returns. A portion of the health
plan proposed by President Clinton addresses individual
responsibility, therefore, we have reached the point where
individual responsibility can no longer be abrogated where

health is concerned (White House Domestic Policy Council 1993, 12).

Health care providers are trying to find strategies to attract a greater participation of individuals, pregnant women in this case, in their health matters (Reis et al. 1992, 19). The individual should realize that to perpetuate the present methods of personal health habits will no longer work. In the case of prenatal care, it is believed the only way to assure care, the single most critical factor in infant mortality and low birth weight reduction, is delivered to every woman is through mandatory participation. American women would not be amenable to this requirement (Eberstadt 1991, 46).

The documentation in this chapter indicates that above the commonly recognized root causes involved in low birth weight and infant mortality rates, the socio-psychological /behavioral [SPB] dimensions is a part of the infant mortality and low birth weight equation. Measurement is at the heart of how to quantify SPB. Some researchers have attempted to quantify parts of the SPB factor (Reis et al. as an example), none have been willing to assign significant study of its effects with the other variables. The next chapter focuses on the Texas experience as it relates to the factors under consideration and infant mortality and low birth weight.

# CHAPTER THREE

## SETTING-TEXAS 1990

### Introduction

This chapter discusses the Texas context. Educational programs, including drop out rates will be addressed. General conditions of poverty and pertinent programs dealing with access and quality issues relating to the infant mortality and low birth weight experience in Texas for the year 1990 will be discussed.

Texas will soon become the second most populated state in the nation. In 1990, the ethnicities under consideration in this study accounted for 88.6 percent of all residents in the state of Texas. Table 3.1 indicates the total number of individuals by race in 1990.

### Table 3.1

### Population by Race--Texas 1990

| White | % | Black | % | Hispanic | % |
|---|---|---|---|---|---|
| 12,787,521 | 66.9 | 2,018,543 | 10.6 | 4,292,120 | 22.8 |

In 1990, the overall infant mortality rate in Texas was eight per one thousand births. According to the Texas Department of Health, Bureau of Vital Statistics [BVS](BVS 1991, 82), as indicated in Table 3.2 the rates ethnically were:

## Table 3.2

### Infant Mortality Rate--Texas 1990

| White | Black | Hispanic |
|-------|-------|----------|
| 6.8   | 14.6  | 7.3      |

In that same year, BVS reported the low birth weight rate for
the state as seven percent (1991, 57). Ethnically the rates
were:

## Table 3.3

### Low Birth Weight Rate--Texas 1990

| White | Black | Hispanic |
|-------|-------|----------|
| 5.8%  | 12.7% | 6.3%     |

Clearly, there is a great disparity between the races.
Hispanics and whites endure infant mortality and low birth
weight rates at least one half that experienced by the black
population. The literature review indicated that, nationally,
blacks experienced higher infant mortality and low birth
weight rates than any other group. As the information above
indicates, the Texas experience is no different. The Texas
background in education is examined first.

### Education

The Texas Education Agency is responsible for the health
education of children in Texas. The entire outline is
contained in <u>Vernons' Annotated Civil Statues 75-76</u>. The
language of this statute is vague in order to allow school
districts and educators room to customize their program based
on assets, need, and community guidelines.

School boards do not look at health care education on a
base assessment of community needs but, rather on what is

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least offensive and costly. A finding of Livingood and Woodhouse was that the community involvement aspect of health education was preferred in order to assure maximum results and behaviors of students exposed to the instruction (1992, 15). It would follow that if education is a factor in low birth weight and infant mortality rates, then the more education on prenatal care, pregnancies, and infant care training given prior to the tenth grade [age 16], the pregnancy outcomes would improve.

Approximately sixty-seven percent of women giving birth in 1990 had achieved a twelfth grade education level (BVS 1994; appendix page 116). The 1990 census, Table 3.4, indicates the number of individuals enrolled in school, primary through college, was more representative for blacks and Hispanics than whites.

**Table 3.4**

**Individuals Enrolled in a School--Texas 1990**

| White | Black | Hispanic |
|-------|-------|----------|
| 26.7% | 31.3% | 34.2% |

Note: These reflect the percentage of the population by race.

Table 3.4 indicates that along racial lines, blacks and Hispanics are available for indoctrination in health care training in significant numbers. If the instruction mentioned above were instituted, it would be logical to expect, over time, favorable results to be identifiable in IM and LBW figures.

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Further analysis, see Table 3.5, of this information shows
that the percentage of blacks in college in 1990 was higher
than Hispanics and has almost achieved the level of whites in
Texas.

## Table 3.5

### Individuals Enrolled in College--Texas 1990

| White | Black | Hispanic |
|-------|-------|----------|
| 7.1%  | 6.8%  | 5.8%     |

Note: The percentages reflected above are along racial lines.

Schoendorf et al. found that while there was a higher
incidence of undesirable birth outcomes among college educated
black women, when compared to whites, the birth results were
better than black women having a high school or lower
education (1992, 1525). Table 3.5 indicates the percentage of
blacks enrolled in college, as a percentage by race, is better
than Hispanics and comparable to whites. As this percentage
of blacks in college increases over time, it would be logical
to expect the IM and LBW results to improve. An indicator of
a successful school system in a state is the drop out rate. A
low drop out rate indicates that a higher number of
individuals are completing their high school education. If a
high school education is a major player in birth outcomes, the
lower the drop out rate, the end result would be more
favorable IM and LBW results. In Texas, the drop out rate was
five percent in the 1989-1990 school year (CRHI 1992, 25).
The five percent represents just over 68,000 students. One in
seven of these individuals were from a rural area (CRHI 1992,

25). Many studies cited in the literature review indicated a concern for the growing number of teenaged women becoming mothers and as such do not complete at least twelve years of school.

The percentage of teenaged mothers went down between 1989 and 1990 from 15.3 to 14.8 percent (Bureau of Vital Statistics 1991, 22). Teenage pregnancies is a very misleading statistic. Many health officials consider the teenage category as being up to the age of 19. In Texas they are considered in this category up to age 17 (Texas Statewide Health Coordinating Council 1992, 40). Many of these women have completed [see appendix page 116] twelve years of education.

## Poverty

The populations identified by most studies contained in the literature were urban. They alluded to poverty as a product of living in an urban area. The 1990 census indicates that a larger percentage of blacks live in either the central city or urban areas of Texas. According to the 1990 census, the percentages (see appendix page 115) are:

**Table 3.6**

**Percent by Race Living in Urban Areas--Texas 1990**

| White | Black | Hispanic |
|-------|-------|----------|
| 89.1 | 96.3 | 93.0 |

The figures in Table 3.6 represented 81.6 percent of the total population of Texas in 1990 (CRHI 1992, 9).

Statewide, the average per capita income, in 1990, was $15,512 (CRHI 1992, 12). The significance of this information may be mitigated when the poverty rate of urban versus rural areas are considered. According to the Center for Rural Health Initiatives, the poverty rate for rural areas is consistently higher (1992, 13). This difference may be the result of unemployment differences. Statewide, the unemployment rate in Texas was 6.2 percent in 1990. The urban areas of the state experienced a 6.1 percent rate while in rural areas it was 6.3 percent (CRHI 1992, 17). The effect of urbanization will be discussed, later, in more detail. There are many health services offered in Texas to mitigate the effects of poverty. Medicaid is the most popular of these services. Nationally, Medicaid funding accounts for about nine percent of the women ages 15 to 44 (Hale 1990, 22).

The Texas Medicaid enrollment for rural areas was 10.8 percent of the population and 8.9 percent of the urban population was enrolled in Medicaid (Center for Rural Health Initiatives 1992, 27). In Texas, according to Timothy Varian a Supervisor at the Program Budget & Statistics Client Self-support Services division of the Department of Human Services, Medicaid funded approximately one-half [see appendix page 121] of all live births in 1990 (Telephone interview, 11/12/92). The state offers other health and human services.

The state of Texas has three agencies directly responsible for health and human services to citizens. They are; the

Texas Department of Human Services, Texas Department of Health, and the Texas Education Agency. No single state agency coordinates, oversees, or otherwise manages the activities of these agencies to assure effective and efficient utilization of resources.

In an effort to reduce fragmented health and human services, the Primary Health Care Service Program (PHSCP) is tasked with the management of the Integrated Eligibility (IE) intake system. The idea behind IE is to establish one-stop shopping for eligibility determination of individuals for health service programs. In FY 1990, the program provided primary care services to 90,000 medically indigent clients (Primary Health Services Care Program 1992, 6). This is less than ten (10) percent of the estimated 1.4 million targeted population (Primary Health Care Service Program 1992, 6).

The Texas Department of Human Services is responsible for the administration of the Aid For Dependent Children Program (AFDC), County Indigent Health Care Program (CIHCP), Primary Health Care Services Program (PHSCP), Early Periodic Screening, Diagnosis and Treatment (EPSDT) for the state of Texas. In each case, the programs are passive in their approach toward service. The individual must approach their offices and seek assistance. There is no program that pro-actively seeks to identify individuals in need of services and refer them to the necessary programs. Those individuals who use a service are identified and referred with no

comprehensive follow up by the referring program.

The Texas Department of Health administers the Women, Infants and Children's (WIC) and the Maternal and Child Health (MCH) Programs. MCH is organized to oversee and administer the Maternal Infant Care Access (MICA) [funded by the March of Dimes organization and the federal government], Vision and Hearing Screening Services, Speech and Language Services, Program for Amplification for Children of Texas (PACT), and Sudden Infant Death Syndrome Services (SIDS), the newborn screening program, genetic services, the midwife program, and other programs not associated with this study. Effective October 1, 1993, the Texas Department of Health assumed responsibility for Medicaid. Private local providers include the Community and Migrant Health Centers (CMHC) and independent rural health clinics.

These clinics provide primary health care for residents in their catchment areas. As of July 1992 there were 76 rural health clinics, with 32 more pending state certification, and 27 CHMC's active in Texas. National standards of care and state reporting requirements were eliminated by Congress. The eligibility requirements are also at the discretion of the providers receiving their grants (Hale 1990, 21). These standards of care and reporting requirements may affect access and the quality of birth outcomes.

## Access/Quality

**Access**

Generally, urban women enjoy better access to prenatal care than do women living in rural areas (Schlesinger and Kronebusch 1990, 103). As previously stated, in 1990, 86.8 percent of blacks and 84.1 percent of Hispanics lived in urban areas. Blacks comprise 12.4 percent of urban area populations, while Hispanics totaled 26.3 percent (Center for Rural Health Initiatives 1992, 11). The 1990 census indicated, as a percentage by race, more Hispanics lived either outside an urban area or in a rural location than blacks but less than whites (see appendix page 115). Access for blacks and Hispanics would be about equal, given all the information above, and their birth outcomes should, therefore, be on par. Access to care may be affected by the process used to obtain it.

According to the Children's Defense Fund [CDF], pregnant women and children in Texas must often wait weeks in order to apply for Medicaid (1991, 10). This is attributed to a shortage of eligibility workers and a lack of documentation provided by the applicant necessary to qualify for the services (CDF 1991, 10). Once approved, the individual must then seek out services. The number of health care providers, in Texas, willing to accept Medicaid is not very high.

Incentives to accept Medicaid payments are low. Hospitals lost an average of $806 per Medicaid admission (CDF 1991, 12).

In 1990, physicians lost an average of 42 percent of the national median charges on Medicaid payments (CDF 1991, 12). Paper work requirements and delay in payment are also considered barriers by health care providers. Various agencies, as previously discussed, are attempting to mitigate these problems.

The Bureau of Maternal and Child Health [MCH] and the Texas Department of Human Services, in conjunction with other agencies, developed a case management system to deal with this problem and to assess quality of treatment issues (MCH 1992, 8). Augmentation of the Medicaid system--i.e., for those who do not qualify--was started in 1985. It is provided by the Maternal and Infant Health Act program. This program, under MCH control, focuses on high-risk pregnant women and basic health care for their infants (MCH 1992, 10). In 1990, this program served 10,115 women and 12,523 infants. The program seems to be showing some effect.

Kessner scores, discussed in the literature review, for women who used clinics or hospital outpatient departments enjoyed a better outcome than did those who were treated by their private physicians. The Texas urban population enjoys a better than two to one [684 to 1385 persons per physician] ratio of physician to population over the rural areas of the state (Texas Rural Health Chartbook 1992, 41; appendix page 131). This was true even for those women who began their care later in their pregnancies (Schlesinger and Kronebusch 1990,

102). The literature review indicated that competition between health care providers, which is the cornerstone of the Presidential health care plan and based on managed competition, has an adverse effect on birth weight. Managed care based health care providers are the fastest growing source of health services in Texas (Texas State Health Plan 1991-92 1990, 28). The different plans offered by these managed care providers are very competitive.

Mark Schlesinger and Karl Kronebusch found in their study that the only characteristic adversely affecting birth outcomes was competition between providers where (1) charges were lowered, (2) Health Maintenance Organizations entered the market, and (3) an abundant number of providers were available to the population (1990, 103). The Schlesinger and Kronebusch study noted that a system of prenatal care founded in clinic care or hospital outpatient departments was the more preferable method of prenatal care delivery (1990, 99).

## Quality

As previously discussed, quality is closely linked to access. The medical system in the United States has been found to have no harmful effects on infant mortality (Pampel and Pillai 1986, 537). The quality of prenatal care in a variety of prenatal care facilities has not been widely studied; in fact, there were no published studies as of 1990 that proved the highest quality of prenatal care was rendered by private physicians (Schlesinger and Kronebusch 1990, 96).

Further, the black low birth weight rate is not significantly affected by the location of their care. The black low birth weight rate for urban Texas areas was 12.8 versus 11.9 for rural areas. This indicates the quality of care is relatively the same in rural or urban areas of Texas (Center for Rural Health Initiatives 1992, 35).

<div align="center">

**Urbanicity**

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Discussion on each of the factors--education and poverty, and access/quality-- to this point, and in the next section on SPB, refer to some specific urban/rural comparisons. Table 3.6 clearly indicated that an overwhelming percentage of Texans, regardless of race, live in urban areas. However, Texas has certain peculiarities where population distribution is concerned.

The rural areas of the state are inhabited primarily, almost 69 percent [68.7], by whites (CRHI 1992, 11). Hispanics, living in rural areas, are concentrated in the southern and western portions of the state. These areas are further from major metropolitan areas and associated health care facilities. Rural blacks, on the other hand, live nearer major metropolitan centers of the state by residing in northern, eastern and central areas of the state. The major metropolitan areas of the state are also located in these areas. The southern and western regions of the state are the poorest per capita areas.

Rural Texans, from 1980 to 1988, suffered a higher

percentage of the population living below the poverty level than urban area residents (CRHI 1992, 13). In that period the poverty rate grew from 13.6 to 17.3 percent in rural areas and from 18.8 to 22.8 percent in rural areas. While the difference between the two--over that period--is only three-tenths of one percent, the impact is more pronounced when per capita income is considered.

In 1989, the average rural Texans' income was $2,733 less than the average urban resident (CRHI 1992, 12). The average urban resident per capita income was $16,018 while the rural figure was $13,285 (CRHI 1992, 12). Statewide the average was $15,512. According to the Government Accounting Office [GAO], this was a largely result of decreased federal, state and local governmental spending (GAO 1991, 10).

In 1989, governmental agencies and projects comprised the largest source of earned income, wages and salaries, in rural Texas. Over eighteen percent [18.1] or 4.4 billion dollars of all rural income came from government and governmental enterprises (CRHI 1992, 14). In contrast with urban areas, rural residents received passive income payments--investment and dividend earnings and private and public transfer payments--in a larger percentage [40.9 versus 27.7] than urban residents. Another glaring difference is in health care.

Health care is a major concern in rural Texas. Nearly 90 percent of rural Texas counties are considered medically under served (CRHI 1992, 38). Twenty-five have no primary care

physicians. Most of these are in areas where the population is white and Hispanic (CRHI 1992, 39). Of those rural counties having physicians, 24.2 percent of those doctors were over 60 years old (CRHI 1992, 42). Hospitals are another problem which is more acute in rural areas.

Fifty-six counties in Texas had no hospital at the beginning of 1991 (CRHI 1992, 50). Fifty-five of those counties were located in rural Texas (CRHI 1992, 50). Twenty of those counties had no other health care available to them CRHI 1992, 50). More in line with the subject of this inquiry, hospital-based obstetrical care was not available in 80 rural counties in 1990 (CRHI 1992, 56). These counties experienced almost 8,000 births in 1990 (CRHI 1992, 56). Clearly, the dichotomy between urban and rural infant mortality and low birth weight results are more pronounced when the two are compared. The next section may indicate an explanation on why, even with the obstructions they suffer, rural birth outcomes are closer to urban results.

## Socio-Psychological/Behavioral--SPB

SPB is difficult to either find indicators of or quantify in terms that can be agreed on by researchers. It is even more difficult to find quantitative information related to the topic in any existing material related to Texas. Some information presented in this section will be discussed and analyzed in chapter five. The attitude towards pregnancy can be influenced by religious indoctrination and social stigma

(Joyce and Grossman 1990, 2).

Hispanic Texans practice their religion primarily in the Roman Catholic church. While there may be a great debate over whether Hispanics or blacks are more religious, there is no debate that the rigidity of Roman Catholic dogma is greater than other popular sects. The Roman Catholic church is very strict in their teachings about the continuity of a family unit, marriage, abortion, and the responsibilities of parenting. Other sects, in large part, frequented more by whites and blacks are less exacting on these topics. Among the more lenient attitudes is contraception and its' associated issues. With contraception techniques and abortion being readily available, women have the means to control the number and timing of their pregnancies and births (Joyce and Grossman 1990, 2). Self-selecting could therefore, be influenced by religious or social mores.

Marriage and birth out of wedlock is a central issue in many social and religious viewpoints. In 1990, 17.9 percent of all births were to single mothers (Bureau of Vital Statistics 1991, 22). Table 3.7 indicates the marital status of mothers, along racial lines.

**Table 3.7**

**Marital Status of Mothers--Texas 1990**

|  | White | Black | Hispanic |
|---|---|---|---|
| **Unmarried** | 8.9% | 48.3% | 17.8% |
| **Married** | 91.1% | 51.7% | 82.2% |

Source: BVS

These numbers may be misleading since there is no box on the
birth certificate form to indicate a marital status for the
mother (see appendix page 113). The marital status is
therefore implied by last names being the same for the mother
and father, or addresses being listed as the same for the
mother and father or any variations in the paternal and
maternal sections of the form. According to Dale Cherry of
the Data Management Branch-Bureau of Vital Statistics-Texas
Department of Health, there is no cross referencing to either
applications for marriage or reports of divorce (Interview, 24
Jan 1994). Any reported information by marital status is, as
a result of oversight in the design of the Birth Certificate
form and lack of cross-referencing, suspect. Another source
of marital status is the census.

The 1990 census of Texas indicated, by race, the marital
status, including divorce, of females age 15 and over as:

### Table 3-8

### Marital Status-females age 15+

|                          | White | Black | Hispanic |
|--------------------------|-------|-------|----------|
| Married-except separated | 57.5% | 34.7% | 53.5%    |
| Divorced                 | 10.2% | 13.3% | 8.1%     |

Source: 1990 General Census of Texas

Table 3-8 indicates that white and Hispanic women share,
relatively the same marriage and divorce rates while blacks
have a much higher divorce rate and a lower marital rate.
Probably the most volatile social and religious issue is
abortion.

There were 89,051 abortions performed in Texas in 1990 (Bureau of Vital Statistics 1991, 225). The three races under examination accounted for 85,683 [96.2%] of the total. The form used in reporting an abortion does classify marital status (BVS 1991, 225). Whites having an abortion in 1990 comprised 53.4 percent, blacks were 21 percent, and 25.6 percent of the total were Hispanic (see appendix page 98). Almost seventy-six percent [75.8] were to unmarried women (see appendix page 127). An indicator of familial and religious influence may be the number of abortions performed on minors.

Only 444 abortions were performed on females 15 years old or younger (Bureau of Vital Statistics 1991, 227). The largest cohort to have abortions in Texas in 1990 were the 20 to 24 age group (Bureau of Vital Statistics 1991, 227). Over one-half [61.5%] stated they were experiencing their first abortion (Bureau of Vital Statistics 1991, 225).

For every white woman who aborted in 1990, 3.3 did not; for blacks the ratio is 2.4 births for every abortion, and; Hispanics gave birth to 5.3 children for every one aborted (Bureau of Vital Statistics 1991, 95,232). The above information confirms not only the assertions of Jencks and Butler but also the findings of Joyce and Grossman, that Hispanics and older women are the least likely to abort (1990, 12). In addition to abortion, family and social support may be apparent in the health habits of individuals.

Poor health and nutrition habits are difficult to

quantify. The BVS collects information on the birth
certificate about alcohol and tobacco use during pregnancy
(BVS 1991, 27). They readily admit that their information is
not a reliable indicator of usage because of a high incidence
of incomplete data (BVS 1991, 27). The BVS reported the
percentage of missing information on tobacco as 40.7 percent
and alcohol usage during pregnancy as 51.8 percent (BVS 1991,
27).

The Center for Rural Health Initiatives indicated alcohol
use by the urban populations, male and female, was 89.1
percent and the rural population usage rate was 84.9 percent;
tobacco use was exactly the same at 71.1 percent (1992, 22).
The urban population was found to have a higher utilization
rate of illegal substances (CRHI 1992, 22). Specifics in this
area will be examined in chapter five. Health habits may also
be indicated by the utilization of nutrition based services.

The Women, Infants and Children [WIC] program provides
nutrition education and specific food items to poor pregnant
women. The program is available in all counties in the state
of Texas. In fact, the services are available in 475 clinics
in the state (CDF 1991, 16). Only 23% of the eligible
population is participating in the program (CDF 1991, 16).
This population, after the birth of their child, usually
enrolls in the AFDC program. According to the Program Budget
and Statistics--Client Self-support Services State Office--
Texas Department of Human Services [TDHS] in 1990, the black

population utilized, as a percentage of all enrolles, AFDC

services more than either whites or Hispanics (1992, 17).

Hispanics used WIC services more but less AFDC services than

blacks. This could indicate that Hispanic families are

extended further in the financial support area than black or

white families.

The cultural importance of pregnancy and children is

further indicated by the higher utilization of child health

services by Hispanics. In 1990, 137,757 children were served

by MCH care givers (MCH 1991, 16). Hispanics comprised 56.2%,

blacks 19%, and 22.9% whites made use of the child health

services offered through MCH (MCH 1991, 17). Over half of

these children were under the age of one (MCH 1991, 17). It

is interesting to note that 53% of these children served were

from the same metropolitan areas mentioned above (MCH 1991,

18).

The maternal and child health programs in Texas spent four

billion, eight hundred and sixty million dollars in fiscal

year 1991 (CDF 1991, 21). One billion, seven hundred and

nineteen million came from state revenues (CDF 1991, 21).

Over one-half of these funds were used for services related to

pregnancy, birth, and the first year of a childs life (CDF

1991, 21). The government and private philanthropic efforts

may be not focusing their attention in the proper direction.

The next chapter will discuss how this research will analyze

the commonly recognized factors of infant mortality and low

birth weight rates.

CHAPTER FOUR

METHODOLOGY


This Chapter discusses the methodology used to test the
hypotheses advanced in the literature review chapter. This
study has elements of description, explanation and exploration
research. The descriptive aspect of the study is founded in
its reliance on the quality attached to the information being
examined. The sources, see Table 4.1, are accepted standard
points of reference in the health care industry. This effort
seeks to explain "why" birth weights are lower and infant
mortality higher among blacks. The "why" aspect has been
developed through the careful review of associated literature.
Finally, this investigation explores the relatively new
subject of socio-psychological/behavioral [SPB].
Specifically, it examines the relationship between SPB and the
infant mortality and low birth weight rates.

**Data Sources**

The variables, see Table 4.1, measured in this study come
from existing statistics--reports, census bureau records,
studies and state vital statistics--germane to the topics
under examination. These statistics are being used to address
the question and the hypotheses. The existing statistics are
not really formatted in such a way that it is possible to test
them directly. To reimburse the various agencies for
extrapolating information in a manner appropriate for this

study was beyond the financial resources of this researcher. The evidence therefore, is compiled indirectly and it is hoped it will be persuasive.

The major source of Texas related reports and studies used in this analysis were issued by various departments of the Texas Department of Health. The primary source is the Bureau of Vital Statistics. Additionally, information found in the 1990 Texas census compiled by the United States Bureau of the Census is used.

## Strengths and Weaknesses

This study looks at a single year, 1990. As Babbie points out, a cross sectional study often deals with a single point in time to explain a causal process that occurs over time (1989, 89). As such, findings are often called into question. The literature researched supports possible findings or inferences of this research. The literature is broad enough and has a large enough time frame of reference to void the negative effects of cross sectionalization in this work. Further, this study is relevant for national application because (1) Texas has approximately five percent of the United States population, (2) as a percentage of the population, the minority representation, black and Hispanic, is large enough to be representative, and (3) the minority populations are homogeneous enough to be representative.

The variables will be reiterated in the next chapter and reported in narrative form, supplemented by tables, and

presented usually as percentages across racial lines.  The
tables will be constructed in order to make the information
reported more understandable.  Detailed information is
presented in the appendix portion of this study.

In the next chapter, hypotheses advanced in chapter two
will be tested.  As with the traditional factors, SPB is a
composite of many variables which either can not or have not
been fully measured, or are so integrated with other aspects
of the end result that causality and measurable effect is open
to question.

Factors, or causes, discussed in this study--education,
poverty, access/quality--are considered the primary causes of
infant mortality and low birth weight.  In exploring the SPB
aspect, this study takes the nomothetic model of explaining
infant mortality and low birth weight.  It is not the intent
of this study to suggest SPB should be classified as a cause
but rather that there may be sufficient evidence to consider
SPB as an important component, or alternative explanation, in
the general understanding of infant mortality and low birth
weight.  Babbie suggests that in order show causality,
illustration must, at least minimally, be established (1989,
62).  If the perception that SPB is a integral segment in the
infant mortality and low birth weight outcomes can be deduced
through this work, then additional study of SPB is warranted.

The eight hypotheses advanced in this study attempt to
ascertain one thing.  In the state of Texas, if a factor such

as education, poverty, access/quality, and urbanicity are controlled, infant mortality and low birth weight rates will be similar along racial lines. The point of controlling for these factors is to determine if there exists a difference along racial lines. If education, poverty, access/quality and urbanicity are key explanatory factors one would expect no differences by race. If, on the other hand, differences continue, traditional explanations (education, poverty, etc.) are suspect.

Each hypothesis advanced in this study uses existing statistics. As previously stated, there are difficulties with the data. Babbie indicates that the desire of researchers is to select a set of elements from a population in such a manner as to precisely portray the population (1989, 172). Once selected statistical methods are employed to assure as accurate a depiction of the population as possible. The study populations in this inquiry are the whites, blacks and Hispanics living in Texas during the year 1990. Because this study is dealing with totals within each race, statistical manipulation is not necessary. Statistical tests exist to reduce sampling errors. In this case, total populations are being examined and any differences can be attributed to the populations.

**Operationalization**

The infant mortality rate is reported by race as a rate per one-thousand births in the year 1990 by the Bureau of Vital

Statistics. Low birth weight rates are also reported by race as a percentage of live births. The additional variables used in the two hypotheses on education are teenage birth rates and educational attainment.

The teenage birth rate was reported as a percentage of women age nineteen and below giving birth during the year. The educational attainment measurement is a percentage of mothers giving birth in Texas for the year 1990. These two variables coupled with the infant mortality or low birth weight and racial variables will be used to evaluate the educational aspect of the study. The next factor to be deliberated in chapter five is poverty.

In addition to the racial populations and either the infant mortality or low birth weight rate there are many variables examined in the poverty postulations. The 1990 Census Bureau information used is reported as percentages, except per capita income, along racial lines. Measures of poverty include (1) employment, (2) households living below the poverty line, (3) children living below the poverty line, (4) poverty status. Another ingredient examined in this section, and in the access/quality section, is the total number of deliveries funded by Medicaid. The Medicaid figures were compiled by the state agency responsible for its' administration. It is believed the analysis of these factors delivers a fair examination on the effect of poverty on infant mortality and low birth weight results. The final major

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component inspected in this study is access/quality.

The literature reviewed in this study were very explicit in the importance of access and quality considerations on infant mortality and low birth weight consequences. The most often discussed components were prenatal care and government services. This study examined the access/quality aspect of infant mortality and low birth weight along racial lines by examining many indicators, in addition to prenatal care and government services, brought out in the literature review.

The Kessner Index is a report, characterized in percentages receiving prenatal care, internationally recognized as an indicator of health care results for pregnant women. Medicaid funded deliveries, discussed above, are also examined as a feature to be considered in the review of access and quality. The government aspect is also reflected by the examination of MCH maternity care and child, in the case of low birth weight, services. The factors discussed to this point were primarily examined in the literature in terms of urban populations. The sub-factor of urbanicity is the final aspect of hypothetical examination.

A majority of researchers on the topics of infant mortality and low birth weight examined urban populations. Many were quick to point out that urban areas suffered a higher incidence of infant mortality and low birth weight rates than rural areas. Interlaced with the studies of education, poverty, and access/quality was urbanicity. A

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common theme was a high incidence of illegal drug related factors in the urban setting.

This study inspects urbanicity looking at the population distribution and drug influence across the urban/rural spectrum. The Center for Rural Health Initiatives was the major source for drug related figures. The information on population distribution in Texas for the year 1990 was drawn from federal census information and the Bureau of Vital Statistics.

Table 4.1 is a summary of the operationalization of hypotheses advanced in the literature review chapter. The SPB aspect, discussed above, is presented as a possible alternative explanation if these hypotheses are found, after consideration, to be not supported. The next chapter analysis of the hypotheses is accomplished.

## Table 4.1

## RESEARCH DESIGN

| Operational Hypothesis | Variables | Operation | Source |
|---|---|---|---|
| | **Education** | | |
| 1.1 Education and Infant Mortality | Education | % grade 12 level achieved | BVS, 1990 Census |
| | Infant Mortality | Rate per 1000 live births | BVS |
| | Race | White, Black, Hispanic | BVS, 1990 Census |
| | Teenage Birth Rate | % mothers 19 and under | BVS |
| 1.2 Education and Low Birth Weight | Education | % grade 12 level achieved | BVS, 1990 Census |
| | Low Birth Weight | % of Total Live Births | BVS |
| | Race | White, Black, Hispanic | BVS, 1990 Census |
| | Teenage Birth Rate | % mothers 19 and under | BVS |
| | **Poverty** | | |
| 2.1 Poverty and Infant Mortality | Households Below Poverty Line | % of Households living below poverty line | 1990 Census |
| | Infant Mortality | Rate per 1000 live births | BVS |
| | Race | White, Black, Hispanic | 1990 Census, BVS |
| | Children Living Below Poverty Line | % of Children living below poverty line | 1990 Census |
| | Medicaid Funded Deliveries | Total number of funded deliveries | Texas Dept. of Human Services |
| | Per Capita Income | Income by Race | 1990 Census |
| | Employment | % employed | 1990 Census |
| | Poverty Status | % above and below poverty level | 1990 Census |

Continued on next page

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## Table 4.1 Continued

| Operational Hypothesis | Variable | Operation | Source |
|---|---|---|---|
| 2.2 Poverty and Low Birth Weight | Households Below Poverty Line | % Households living below poverty line | 1990 Census |
| | Low Birth Weight | % of Total Live Births | BVS |
| | Race | White, Black, Hispanic | 1990 Census, BVS |
| | Children Living Below Poverty Line | % Children living below poverty line | 1990 Census |
| | Medicaid Funded Deliveries | Total number of funded births | Texas Dept. of Human Services |
| | Per Capita Income | Income by Race | 1990 Census |
| | Employment | % employed | 1990 Census |
| | Poverty Status | % above and below poverty line | 1990 Census |

### Access/Quality

| Operational Hypothesis | Variable | Operation | Source |
|---|---|---|---|
| 3.1 Access/Quality Quality and Infant Mortality | Kessner Index Scores | % receiving adequate pre-natal care | BVS |
| | Infant Mortality | Rate per 1000 live births | BVS, CRHI |
| | Race | White, Black, Hispanic | 1990 Census, BVS |
| | Late Prenatal Care | % late-1990 | BVS, CRHI |
| | MCH Maternity Care | % receiving maternity care2 | BVS, MCH |
| | Medicaid Funded Deliveries | Number of births funded-1990 | Texas Dept. of Human Services |
| 3.2 Access/ Quality | Kessner Index Scores | % receiving adequate pre-natal care | BVS |
| | Low Birth Weight | % of total live births | BVS |
| | Race | White, Black, Hispanic | 1990 Census, BVS |
| | Late Prenatal Care | % late-1990 | BVS, CRHI |
| | MCH Maternity Care | % receiving maternal care | BVS, MCH |
| | Medicaid Funded Deliveries | Number of births funded-1990 | Texas Dept. of Human Services |
| | MCH Child Services | % children served | MCH |

Continued on next page

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Table 4.1 Continued

## Urbanicity

| Operational Hypothesis | Variable | Operation | Source |
|---|---|---|---|
| 4.1 Urban v. Rural and Infant Mortality | Population of Texas | % living in urban areas of Texas | 1990 Census |
| | Infant Mortality | Rate per 1000 live births | BVS, CRHI |
| | Race | White, Black, Hispanic | 1990 Census, BVS |
| | Drug Use | % admitted drug use | CRHI |
| | Drug Related Arrests | % arrested | CRHI |
| 4.2 Urban v. Rural and Low Birth | Population of Texas | % living in urban areas of Texas | 1990 Census |
| | Low Birth Weight | % of total live births | BVS |
| | Race | White, Black, Hispanic | 1990 Census, BVS |
| | Drug Use | % admitted drug use | CRHI |
| | Drug Related Arrests | % arrested | CRHI |

### LEGEND

BVS= Bureau of Vital Statistics, Texas Department of Health-special reports prepared for this study and their 1990 Annual Report

MCH= Bureau of Maternal and Child Health, Texas Department of Health

CRHI= Center of Rural Health Initiatives, Texas Department of Health

1990 Census= 1990 General Population Characteristics--Texas, compiled by the Bureau of the Census, U.S. Department of Commerce

Texas Dept. of Human Services= Special analysis report prepared by the Eligibility Monitoring Unit, Texas Department of Human Services

# CHAPTER FIVE

## ANALYSIS

### Introduction

This chapter examines specifics about the Texas experience based on information discussed in previous chapters relating to education, poverty, access/quality, and the urbanicity factors associated with infant mortality [IM] and low birth weight [LBW]. Hypotheses previously presented will be examined by each factor. Socio-psychological/behavioral [SPB] will be examined as a possible significant factor in the equation. It is important to restate that the factors-- education, poverty, and access/quality, and the sub-component ubanicity--attributed to infant mortality and low birth weight are not challenged as to their contribution to the problem. Rather, if by controlling for each factor a disparity is indicated along racial lines the factor under examination could be said to have an atypical effect on the infant mortality and low birth weight rate for that racial group. The infant mortality rate and low birth weight rate are common variables in the hypothese proposed in this study.

In 1990, the overall infant mortality rate in Texas was eight per one-thousand births. According to the Department of Health, Bureau of Vital Statistics [BVS](1991, 82) the rates ethnically were:

**Table 5.1**

**Infant Mortality in Texas by Race--1990**

| White | Black | Hispanic |
|-------|-------|----------|
| 6.8 | 14.6 | 7.3 |

In that same year, BVS reported the low birth weight rate for the state was seven percent (1991, 57). Ethnically the rates were:

**Table 5.2**

**Low Birth Weight Rate by Race in Texas--1990**

| White | Black | Hispanic |
|-------|-------|----------|
| 5.8% | 12.7% | 6.3% |

Clearly, there is a great disparity between the races.

Since the black experience, indicated in tables 5.1 and 5.2 above, in infant mortality and low birth weight is roughly double that of whites or Hispanics, it would logically follow that the Black experience with the factors under examination would be approximately twice that of the white or Hispanic community. This examination begins with the educational aspect.

## Education

Hypotheses:

H: 1.1    If education is controlled, the infant mortality rate will be similar by race.

H: 1.2    If edication is controlled, the low birth weight rate will be similar by race.

In Texas, approximately sixty-seven percent of women giving birth in 1990 had achieved a twelth grade education level.

Racially, the number of mothers reporting at least the education level a of high school graduate, according to BVS (see appendix page 116), was:

**Table 5.3**

**Education of Grade Level 12 or Higher--Mothers 1990**

| White | Black | Hispanic |
|-------|-------|----------|
| 81.7% | 71.4% | 42.1% |

This table indicates more than twice as many Hispanic mothers [56.3%] in 1990 had below a high school education level as Black mothers [27.2%], and over three times the rate of white mothers [17.5%] during the same period (BVS 1990). These percentages do not equal 100 due to missing data on the birth certificate form. The effect of education on birth outcomes was found, in the literature review, to not be uniform.

Pampel and Pillai found that the higher the education level of women, the more likely they were to live a healthy lifestyle and seek prenatal care (1986, 526). This behavior would reduce infant mortality and low birth weight rates (Pampel and Pillai 1986, 526). Eberstadt found the rates were more pronounced for blacks than whites who did not have at least a high school education (1991, 37). The experience of Texas in 1990, which is reflective of the long term trend experienced by the state, does not support the Pampel and Pillai or the Eberstadt findings. One explanation may be found in the percentage of teenage mothers.

The percentage of teenage mothers went down between 1989 and 1990 from 15.3 to 14.8 percent (Bureau of Vital Statistics

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1991, 22). Teenage, nineteen and under, birth rates are insignificant when looking at the education factor. The BVS data indicates, in this category, black and white mothers who had at least a high school education were roughly equal [black-30% vs. white-30.6%] while Hispanic mothers reporting a high school education was only 16.8 percent (see appendix page 116). There is a significance when the age of the mother is lowered to seventeen. Table 5.4 indicates that black and Hispanic women age seventeen are more likely than whites to become pregnant.

### Table 5.4

**Births to Women Age 17 and Under--Texas 1990**
**(percent of total children)**

| White | Black | Hispanic |
|-------|-------|----------|
| 3.1%  | 9.6%  | 7.2%     |

Source: Bureau of Vital Statistics

Reflected in the rate of women who did not have a grade 12 level education is the dropout rate. Statewide the dropout rate is 5.7 per hundred in urban areas and 3.2 per hundred in rural areas. The analysis of urbanicity will be addressed in detail later in this chapter, yet there is a relationship to education that will be examined at this time.

In the 1989-1990 school year six out of seven student dropouts were from an urban area (Center for Rural Health Initiatives 1992, 25). It would be expected, because the drop out rate was higher, that the infant mortality rate and low birth weight rates experienced by urban women would be

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significantly higher.  An examination of table 5.14 indicates

this is not the case.

This information also tends to invalidate, or at least

minimize, education as a factor in infant mortality and low

birth weight rates in the Hispanic and white populations.

There may be a slight indication that the drop out rate is an

influence in the black population.  It would follow that if

education is a factor in low birth weight rates and infant

mortality, then the more education on prenatal care,

pregnancies, and infant care given prior to the tenth grade

[age 16], pregnancy outcomes would improve.

The educational aspect of infant mortality and low birth

weight, while a factor, appears to be just as fragmented, as

identified in the literature review, in Texas as the remainder

of the nation.  Neither hypothesis presented at the beginning

of this section can be supported based on the information

presented.  No substantial evidence exists to support the

notion that when education is controlled for, the infant

mortality and low birth weight rates were similar across

racial lines.  Table 5.5 summarizes the data, outlined in

chapter four and discussed above, used to reach these

conclusions.

## Table 5.5

### Summary of Variables--Education 1990

| Variable | White | Black | Hispanic |
|---|---|---|---|
| % Mothers having 12 years of Education | 81.7 | 71.4 | 42.1 |
| % of Teens (19) and below with High School Education | 30.0 | 30.6 | 16.8 |
| % of Teens (17) and below with High School Education | 3.1 | 9.6 | 7.2 |
| Infant Mortality Rate | 6.8 | 14.6 | 7.3 |
| Low Birth Weight Rate | 5.8 | 12.7 | 6.3 |

### Poverty

Hypotheses:

H: 2.1 If poverty is controlled, the infant mortality rate will be similar by race.

H: 2.2 If poverty is controlled, the low birth weight rate will be similar by race.

The literature reviewed found that poverty does have an effect on infant mortality and low birth weight rates. Policy makers routinely accept poverty as the chief explanation for infant mortality. Their theory being that infant mortality is a result of the proportion of children in poverty (Eberstadt 1991, 32).

The literature review indicated that many researchers believe the percentage of children found living below the poverty line is a better measurement. Here again blacks in Texas fared better than either whites or Hispanics. Black children comprised only 10.8 percent of the total number of children living below the poverty level. Hispanics constituted 24.5 percent and whites, according to the census, were 64.7 percent of the total (see appendix page 119). A composite picture of the poverty status by race, see appendix

page 120, indicates relative equality between Hispanics and blacks.

The black incidence of households, with children present, below the poverty line is better than either white or Hispanics. Only 17.8 percent of the total were black according to the 1990 census. The same census indicated 39.8 percent were Hispanic and 42.7 percent were white households found to live below the poverty line (see appendix page 118). The 1990 census of Texas indicated the following:

**Table 5.6**

**HOUSEHOLDS BELOW POVERTY LINE WITH CHILDREN PRESENT**

### White

| | Population | % by Race | % by Total |
|---|---|---|---|
| Married Couple | 147655 | 57.7 | 46.1 |
| Male head of household | 14048 | 5.5 | 41.9 |
| Female head of household | 94036 | 36.8 | 37.8 |
| Total Families Below Poverty Line | 255739 | 100.0 | 42.7 |
| % of All Families Living Below Poverty Line | | 15.2 | |

### Black

| | | | |
|---|---|---|---|
| Married Couple | 23156 | 21.5 | 7.2 |
| Male head of household | 6184 | 5.8 | 18.4 |
| Female head of household | 78229 | 72.7 | 31.4 |
| Total Families Below Poverty Line | 107569 | 100.0 | 17.8 |
| % of All Families Living Below Poverty Line | | 38.3 | |

### Hispanic

| | | | |
|---|---|---|---|
| Married Couple | 149881 | 62.5 | 46.7 |
| Male head of household | 13311 | 5.5 | 39.7 |
| Female head of household | 76662 | 32.0 | 30.8 |
| Total Families Below Poverty Line | 239854 | 100.0 | 39.8 |
| % of All Families Living Below Poverty Line | | 37.5 | |

Table 5.6 continued
**Totals**

| | Total by Category | % by Category |
|---|---|---|
| Married Couples | 320692 | 53.2 |
| Male head of household | 33543 | 5.5 |
| Female head of household | 248927 | 41.3 |
| Families Below Poverty Line | 603162 | 100.0 |
| % of All Families | | 23.1 |

Table 5.6 indicates some very interesting facts. First, the percentage of Black and Hispanic families living under the poverty line are similar within their respective races, but as a percentage of total families under the poverty line, Hispanics suffer at more than twice [39.8 versus 17.5 percent] the rate of blacks. The significance of this fact is further amplified when per capita incomes are considered.

The second point of interest found in Table 5.6 is that well over fifty percent of households [57.7 and 62.5% respectively] under the poverty line for white and Hispanic families were found in the married couple category. The largest category for blacks [72.7%] was in the female head of household portion. Ramifications of this fact will be discussed in more detail in the SPB section. Income is another measure of poverty identified in the literature reviewed for this study.

In 1990, the poverty level for a family of three was $10, 560. The per capita income reported by the Census Bureau shows that blacks have a higher income than Hispanics but lower than whites. Hispanics experienced a per capita income of $6633, blacks $8102 and whites showed the highest level at

$14629. Eberstadt found that in the states with the lowest infant mortality rates suffered from the lowest per capita incomes (1991, 10). Using per capita income as a measure, the per capita income information indicates Hispanics should have twice the rate of infant mortality and the low birth weight rate of whites and significantly more than blacks. The per capita incomes could be skewed by a higher or lower number of incomes at the extreme levels of the spectrum. Some researchers believe that the percentage of households below the poverty line is a better measurement. Unquestionably, when the above information is considered, the Hispanic experience can be characterized as more severe than either blacks or whites. The income disparity can not be said to be the result of unemployment.

As a percent of the total population, by race, living below the poverty line Hispanics experienced 33 percent and blacks 31 percent, while whites encompassed 14 percent. One area of poverty sociologists call attention to is employment (Wilson 1987, 82). In 1990, according to the Census Bureau, blacks and Hispanics, age sixteen and over, experienced relatively the same employment percentages by race [56.4 vs. 57.8] and not significantly less than whites [62.2%] (see appendix page 122). Another poverty indicator offered by many is the employment status of females (Wilson 1987, 72). Here again black females, age 16 and over, in Texas enjoyed a slightly higher percentage, by race, of employment than either

whites or Hispanics (see appendix page 122).

The employment aspect is relatively equal by race.
Hispanics enjoyed a 1.4 percent greater level of employment
[57.8 versus 56.4] over blacks.  Black women enjoyed the
highest percentage of employment, 2% more than whites and 5.7%
over Hispanics (See appendix page 122).  The effect of poverty
can also be examined by looking at Medicaid utilization.

The federally mandated level for Medicaid assistance is
133 percent of the poverty level and raised the income ceiling
to $14,045 (Children's Defense Fund 1992, 11).  Nationally,
Medicaid funding accounts for about nine percent of the women
ages 15 to 44 (Hale 1990, 22).  The Texas Medicaid enrollment
for rural areas was 10.8 percent of the population and 8.9
percent of the urban population was enrolled in Medicaid
(Center for Rural Health Initiatives 1992, 27).  In Texas,
according to Timothy Varian, a Supervisor at the Program
Budget & Statistics Client Self-support Services division of
the Department of Human Services, Medicaid funded
approximately one-half [see appendix page 121] of the live
births in 1990 (Telephone interview, 11/12/92).  An
examination of the information [appendix page 121] indicates
the Medicaid utilization rate by Hispanic and black women is
relatively equal.  It is difficult to properly assign
percentages since Medicaid funding is reported on a fiscal
year and the birth totals are reported on a calendar year.

It is interesting to note that the number of births funded

by Medicaid in all racial categories has increased. The total number of white births has shown a decline, but the funding utilization rate has increased. The black number of births has been relatively constant and their utilization rate has increased. The Hispanic birth and utilization rate has increased. Utilization rates and birth outcomes suggest there may be linkages to the next topic under consideration, that being access/quality. Before examining the topic of access/quality, the hypotheses advanced at the beginning of this discussion on poverty require examination.

The high proportion of black infant mortality and low birth weight rates can not conclusively be related to their poverty experience in Texas. Infant mortality and low birth weight rates were not similar by race when contolling for poverty. These findings are the result of reviewing the information presented in Table 5.7.

**Table 5.7**

**Summary of Variables--Poverty 1990**

| Variable | White | Black | Hispanic |
|---|---|---|---|
| % Households below Poverty Line | 15.2 | 38.3 | 37.5 |
| % Children living Below Poverty Line | 64.7 | 10.8 | 24.5 |
| % Poverty Status | 14.0 | 31.0 | 33.0 |
| Per Capita Income | $14,629 | $8,102 | $6,633 |
| Medicaid Funded Deliveries* | 21.6 | 55.7 | 47.6 |

*= % of total births by race

## Access/Quality

Hypotheses:

  H: 3.1 If access/quality is controlled,
      the infant mortality rate will be
      similar by race.

  H: 3.2 If access/quality is controlled, the
      low birth weight rate will be similar
      by race.

The literature reviewed indicated that individuals classified as poor were enjoying greater access to and quality of care than middle-income families (Jencks 1992, 74). The Jencks analysis is confirmed by both the Schlesinger & Kronebusch (1990) and Pampel & Pillai (1986) studies. The previous discussions on education and poverty indicated Hispanics were less educated and poorer, by any measurement, than either whites or blacks. Their birth outcomes, infant mortality and low birth weight rates, are half the rate of blacks and comparable to whites. Often, in the literature, when poverty and education are not found to be discordant the blame is laid at the feet of the access/quality aspect of infant mortaltity and low birth weight by the researchers (Howze 1987, 120).

As discussed in chapter two, the access/quality topic is often closely studied in terms of an urban population and very little is analyized in state-wide terms, which would include rural populations. Information, significant to this topic in Texas, was found subdivided into urban and rural categories. While the next section is dedicated to a deliberation on urbanicity, it is an intregal aspect of an examination of this

topic and a better understanding of access/quality.  Some

information is, therefore, reported in urban-rural terms in

this section.

**Access**

Urban women enjoy better access to prenatal care than do

women living in rural areas (Schlesinger and Kronebusch 1990,

103).  In 1990, 86.8 percent of blacks and 84.1 percent of

Hispanics lived in urban areas.  Blacks comprise 12.4 percent

of urban area populations, while Hispanics totaled 26.3

percent (Center for Rural Health Initiatives 1992, 11).  The

1990 census indicated, as a percentage by race, more Hispanics

lived either outside an urban area or in a rural location than

blacks but less than whites (see appendix page 115).  Access

for blacks and Hispanics would be about equal, given all the

information above, and their birth outcomes should, therefore,

be on par.  The percentage of low birth weight babies born in

Texas during 1990 was nearly the same for both urban and rural

mothers (Center for Rural Health Initiatives 1992, 35).  What

is unusual is that both white and Hispanic low birth weight

rates were slightly higher in rural areas whereas; the black

experience was slightly lower in rural areas.  The infant

mortality rate for Hispanics and whites was higher in rural

areas, but black infant mortality was higher in the urban area

(Center for Rural Health Initiatives 1992, 36).

In 1990, 36.3 percent of rural mothers and 29.8 percent of

urban mothers received late prenatal care in Texas. Hispanics in urban areas are more likely to receive late prenatal care, while in rural areas blacks report later (Center for Rural Health Initiatives 1992, 34; appendix page 125). The prenatal care aspect of infant mortality and low birth weight is measured by what is called the Kessner index.

As previously discussed, Kessner index scores are a comparative measure of the adequacy of prenatal care. Kessner scores measure three items. They are (1) the length of pregnancy, (2) timing of the first prenatal care visit, and (3) number of visits for care. This data is taken from the birth certificates filed with the state (Bureau of Vital Statistics 1991, 259). The Kessner Index criteria are as follows (Bureau of Vital Statistics 1991, 259):

**Table 5.8**

**Kessner Index Criteria**

Adequate Prenatal Care

Initial visit in 1st trimester and:

| Weeks of Gestation | | Number of Prenatal Visits |
|---|---|---|
| 17 | and | 2 or more |
| 18-21 | and | 3 or more |
| 22-25 | and | 4 or more |
| 26-29 | and | 5 or more |
| 30-31 | and | 6 or more |
| 32-33 | and | 7 or more |
| 34-35 | and | 8 or more |
| 36 or more | and | 9 or more |

Inadequate Prenatal Care

Initial visit in 3rd trimester or:

| Week of Gestation | | Number of Prenatal Visits |
|---|---|---|
| 17-21 | and | none |
| 22-29 | and | 1 or fewer |
| 30-31 | and | 2 or fewer |
| 32-33 | and | 3 or fewer |
| 34 or more | and | 4 or fewer |

The BVS uses the Kessner index to determine adequacy of prenatal care services being received by women.  The 1990 index scores indicate that black women experience nearly the same adequate and inadequate prenatal care than Hispanics in Texas (BVS 1991, 72-73).  Table 5.9 illustrates this point.

**Table 5.9**

**Kessner Index Scores--1990**

|  | White | Black | Hispanic |
|---|---|---|---|
| **Adequate** | 74.2% | 50.1% | 45.6% |
| **Inadequate** | 6.8% | 18.6% | 20.7% |

The lower numbers, above, are not the result of where the women live as table 5.10 demonstrates.

**Table 5.10**

**Urban vs. Rural Late Prenatal Care**

|  | White | Black | Hispanic |
|---|---|---|---|
| **Urban** | 19.6% | 38.2% | 40.5% |
| **Rural** | 27.2% | 51.0% | 47.0% |

In 1990, there were only 3.4 percent of mothers in Texas who did not receive prenatal care and 66.7 percent reported care beginning in the first trimester (Bureau of Vital Statistics 1991, 22).  As indicated above, whites attributed with having an adequate prenatal care experience was 74.2, blacks 50.1 and Hispanics 45.6 in Kessner index scores for 1990 (Bureau of Vital Statistics 1991, 72).  Those who received inadequate prenatal care according to the Kessner scores were, (1) whites-6.8, (2) blacks-18.6, and (3) Hispanics-20.7 (Bureau of Vital Statistics 1991, 73).  While there is a significant difference between white and blacks in

Texas, the difference between whites and Hispanics is even greater (see appendix page 126).

Kessner scores for women who used clinics or hospital outpatient departments enjoyed a better outcome than did those who were treated by their private physicians. This was true even for those women who began their care later in their pregnancies (Schlesinger and Kronebusch 1990, 102). 103). The Schlesinger and Kronebusch study found that a system of prenatal care founded in clinic care or hospital outpatient departments was the more preferable method of prenatal care delivery (1990, 99).

Community and Migrant Health Care Centers [CMHCC], which are located in areas of the state where prenatal care is most needed, have established a sliding scale rate structure in order to serve the neediest populations (Community and Migrant Health Centers 1991, 18). The CMHCC bridge the gap between totally public and private care givers. These types of facilities are funded, at least in part, by a governmental entity and it follows that participation in state prenatal outreach programs and Medicaid enrollment improves access to prenatal care and birth outcomes which were the concerns addressed by Schlesinger and Kronebusch (1990, 99,107). Schlesinger and Konebusch implied that access and quality could be measured by infant mortality across racial lines (1990, 106).

If quality and access were racially determined there would

be a significant difference in infant death, mortality,

totals. Infant deaths in Texas totaled 2536 in 1990. Of

those deaths, whites totaled 40.3 percent, blacks 24.9, and

34.9 percent Hispanic (Bureau of Vital Statistics 1991, 216).

Neonatal deaths, infant deaths in the first 27 days of life,

comprised 61.2 percent of all infant deaths in 1990 (Bureau of

Vital Statistics 1991, 83). Of the 1552 deaths, 39.4 percent

were whites, 23.7 percent black, and 36.9 percent were

Hispanic (Bureau of Vital Statistics 1991, 217).

## Quality

As previously discussed, quality is closely linked to

access. The medical system in the United States has been

found to have no harmful effects on infant mortality (Pampel

and Pillai 1986, 537). The quality of prenatal care in a

variety of prenatal care facilities has not been widely

studied; in fact, there were no published studies as of 1990

that proved the highest quality of prenatal care was rendered

by private physicians (Schlesinger and Kronebusch 1990, 96).

Further, the black low birth weight rate is not significantly

affected by the location of their care. The black low birth

weight rate for urban Texas areas was 12.8 versus 11.9 for

rural care. This indicates that the quality of care is

relatively the same in rural or urban areas of Texas (Center

for Rural Health Initiatives 1992, 35).

The Primary Health Care Services Program of the Texas

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Department of Health reported that, in 1990, of individuals living under one-hundred and fifty percent of the poverty level, 45.7 percent of them have private health insurance and 31.9 percent of them are actively enrolled in Medicaid (1992, 6). Medicaid funded[1] slightly over one-half of the black births and nearly one-half the Hispanic births in Texas in 1990 (see appendix page 121). Federal funding of services is not the only method of care for low income individuals offered in the state.

The Bureau of Maternal and Child Health Services assists in funding 49 local health agencies and over 300 clinics in the state (MCH 1991, 8). The Bureau coordinates referrals for maternal and child services between both state and federal agencies (MCH 1991, 8). These agencies are located primarily in urban areas. The MCH reported serving 74,499 women for maternity needs and 137,757 children (1991, 19). Of the children served, 22.9 percent were white, 19 percent were black, and 56.2 percent were Hispanic (1991, 17). These percentages are important since 53.1 percent of these children were under the age of one (MCH 1991, 17). Of the maternity needs for low income pregnant and postpartum women services, Hispanics comprised 55.4 percent, blacks 17 percent and whites

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[1] Medicaid funding of births is reported by fiscal year and the BVS birth report is by calendar year. A direct correlation is not possible, but the information provided (see appendix page   ) indicates a clear pattern of utilization across racial lines. Therefore, reporting utilization over a calendar period is sustainable.

26.3 percent of those served (MCH 1991, 9).

The information provided above indicates that access to
health care, principally for urban women and children, is not
racially biased by either location of services or
qualifications to receive services. It also means that black
women are just as predisposed as Hispanics to use Medicaid for
birth costs, but less active in the utilization of prenatal,
postpartum, and infant care services. Quality is not a factor
since if the low birth weight rate and infant mortality rates
were a function of perceived poor health care, Medicaid funded
services being the most often cited examples, Hispanics would
suffer a much worse experience than blacks. The popular
assertion that black infant mortality and low birth weight
rates are disproportionaly a function of their having a worse
experience in the access/quality factor is not supported.
Table 5.11 exhibits the information for each variable which
supports these findings.

**Table 5.11**

**Table 5.11Summary of Variables--Access/Quality**

| Variable | White | Black | Hispanic |
|---|---|---|---|
| Kessner Index Scores | | | |
| Adequate | 74.2 | 50.1 | 45.6 |
| Inadequate | 6.8 | 18.6 | 20.7 |
| Late Prenatal Care | | | |
| Urban | 19.6 | 38.2 | 40.5 |
| Rural | 27.2 | 51.0 | 47.0 |
| MCH Child Services | 22.9 | 19.0 | 56.2 |
| MCH Maternity Services | 26.3 | 17.0 | 56.2 |
| Medicaid Funded Births | 21.6 | 55.7 | 55.4 |
| Infant Mortality Rate | 6.8 | 14.6 | 7.3 |
| Low Birth Weight Rate | 5.8 | 12.7 | 6.3 |

As earlier stated, there does seem to be evidence in
the access/quality analysis that black women are less likely

to seek prenatal or infant health care. This perception
indicates another factor may be involved. The SPB portion of
this study will examine this perception as the final factor to
be scrutinized. It is important to note at this point in the
analysis that when controlled for, none of the commonly
accepted factors--education, poverty, and access/quality--
associated with infant mortality and low birth weight rates
have been found to have a disproportional impact on any ethnic
population of Texas. It is not an assertion of this study
that these factors do not affect the infant mortality and low
birth weight rates.

Closely amalgamated into the education, poverty, and
access/quality factors is an urbanicity element. The
literature review indicated most studies are focused on
examining the subjects of this effort in an urban setting.
Before scrutinizing SPB, the effect of urbanicity will be
probed.

## Urbanicity

Hypotheses:

> H: 4.1   If urbanicity is controlled, the
>          infant mortality rate will be similar
>          by race.

> H: 4.2   If urbanicity is controlled, the low
>          birth weight rate will be similar
>          by race.

In each section examined to this point, the research has
been affected in some manner by the residence, urban or rural,

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of the pregnant women and their babies. Few sources were

state-wide or national in their scope. Howze asserted the

poor infant mortality and low birth weight results were

indicative of an urban environment (1987, 124). What is

considered an urban or rural area?

The Center for Rural Health Initiatives (CRHI) offers an

excellent discussion of what is considered a urban or rural

area. Their discussion states:

> The two most common definitions used for
> health program purposes are based on the
> U.S. Bureau of the Census' urban/rural
> population distinction and on the Office of
> Management and Budget's (OMB)
> classification of metropolitan statistical
> areas (MSAs). The Census Bureau's
> urban/rural population scheme classifies as
> urban those persons living in urbanized
> areas--central cities with populations of
> 50,000 or greater--and those in towns with
> populations of 2,500 or greater. Persons
> living outside these areas are generally
> considered the rural population. The OMB's
> MSA based definition follows existing
> county boundaries and groups major urban
> centers of 50,000 or more persons with
> nearby, economically linked counties (1992,
> 1).

All statistical sources used in this study determined their

urban/rural information based on the Census Bureau definition

disclosed above.

The populations identified in most of the literature

reviewed were primarily urban in composition. The 1990 census

indicates that a larger percentage of blacks live in either

the central city or urban areas of Texas. According to the

1990 census the percentages (see appendix page 115) are:

**Table 5.12**

**Urban Residence-Texas 1990**

| White | Black | Hispanic |
|-------|-------|----------|
| 89.1  | 96.3  | 93.0     |

This information reflects that while a large percentage of blacks--higher than either whites or Hispanics--lived in urban areas of Texas, it could not be classified as so significant as to account for the difference in birth outcomes along racial lines.

The infant mortality and low birth weight rates in Texas for the year 1990 were as follows:

**Table 5.13**

**Urban vs. Rural Infant Mortality Rates - Texas 1990**

|          | Urban | Rural | Total |
|----------|-------|-------|-------|
| White    | 6.7   | 8.4   | 7     |
| Black    | 14.2  | 12.4  | 14    |
| Hispanic | 6.8   | 8.3   | 7     |
| Total    | 7.9   | 8.8   | 8     |

Source: CRHI 1992, 25.
Note: 1. Rate is per one thousand births.
2. The figures in the total column were rounded by CRHI.

**Table 5.14**

**Urban vs. Rural Low Birth Weight Rates - Texas 1990**

| % of Live Births | Urban | Rural | Total |
|------------------|-------|-------|-------|
| White            | 5.7   | 6.1   | 5.8   |
| Black            | 12.8  | 11.9  | 12.7  |
| Hispanic         | 6.2   | 6.9   | 6.3   |
| Total            | 7.0   | 7.0   | 7.0   |

Source: CRHI 1992, 25.
Note:  The figures in the total column were rounded by CRHI.

In the examination of access/quality, the implications of urban and rural effects on the ethnicities was discussed. What was not addressed in that section was the fact that, at least in Texas, the consequence attached by so many researchers of urbanicity does not emerge ethnically as a significant factor. Since there are differences perhaps they are a product of negative influences such as drug use.

Drug utilization by pregnant women is universally considered a perilous component of birth outcomes. The Center for Rural Health Initiatives indicated alcohol use by the urban populations, male and female, was 89.1 percent and the rural population usage rate was 84.9 percent; tobacco use was exactly the same at 71.1 percent (1992, 22). The urban population was found to have a higher utilization rate of illegal substances (CRHI 1992, 22). Table 5.15 highlights the Center for Rural Health Initiatives findings on illegal substance usage (1992, 22).

### Table 5.15

### Illegal Drug Use

|  | Urban | Rural |
|---|---|---|
| Marijuana | 31.3% | 19.4% |
| Cocaine | 10.6% | 5.0% |
| Uppers | 14.2% | 8.9% |
| Downers | 6.4% | 4.3% |

The lower numbers for the rural area may be the result of a higher overall arrest rate in rural areas of the state (CRHI 1992, 23). Table 5.16 indicates the arrests per thousand population as reported by the Department of Public Safety

(CRHI 1992, 23).

## Table 5.16

## Arrests

|  | Urban | Rural | State |
|---|---|---|---|
| Alcohol (DWI & Public Intoxication | 14.1 | 25.5 | 16.7 |
| DWI Only | 5.4 | 9.1 | 6.4 |
| Drug Trafficking (All Drugs) | 0.6 | 0.8 | 0.7 |
| Drug Possession | 3.6 | 3.3 | 3.8 |
| Marijuana Trafficking | 0.1 | 0.3 | 0.1 |
| Marijuana Possession | 1.5 | 2.1 | 1.7 |

Tables 5.15 and 5.16 clearly demonstrate that the rural area population is as susceptible to drugs as the urban area population. The use of alcohol and tobacco are similar while illegal drug use is lower. Perhaps, as evidenced by Table 5.15, the lower use rate of the rural population is because the arrest rate for their population is greater in all but one category, drug possession, as the urban population and probably more public attention, a negative social stigma, is drawn to these cases. Social stigma is an integral piece of the next topic to be appraised. Before moving on to the consideration of SPB, conclusions on urbanicity must be stated. The information contained in this section, as well as relationships identified with urbanicity in previous sections conspicuously finds that when controlling for urbanicity, neither infant mortality or low birth weight rates are

in terms that can be agreed on by researchers. Cramer addressed this when he pointed to three failings of researchers in studying social differentials in infant mortality (1987, 299). Cramer states that first there is a problem of determining descriptive statistics that correlate to risk factors (1987, 299). Second, he finds that many studies do not specify how social factors are identified (1987, 300). Finally, Cramer points out that the problem in explaining an interaction of social factors with infant mortality is the result of a lack of a conceptual framework to explain variations in risk (1987, 300).

Schoendorf et al. identify factors associated with psychological, which results in physiological, risk as (1) poor maternal health before pregnancy, (2) poor health habits during pregnancy, and (3) poor access and quality of care (1992, 1525). Health habits are the result of cultural, and or family, influence, economic status, and education (Reis et al. 1992, 14). The Kessner index scores, previously discussed, attempts to measure access, quality and can imply, all access and quality factors being equal, the attitude of pregnant women. Reis et al. also found that the attitude and knowledge expressed by individuals, regardless of sex, was the result of their social network (1992, 14). The attitude towards pregnancy can also be influenced by religious indoctrination and social stigma.

Joyce and Grossman indicated that pregnancy and prenatal

behavior was a form of self selection (1990, 2). With contraception techniques and abortion being readily available, women have the means to control the number and timing of their pregnancies and births (Joyce and Grossman 1990, 2). In addition to a religous influence, self-selecting could be prejudiced by psychological, or social mores.

In 1990, 17.9 percent of all births were to single mothers (Bureau of Vital Statistics 1991, 22). According to the BVS, along racial lines the number of mothers, in 1990, not married were:

**Table 5.17**

**Marital Status--Texas Mothers 1990**

|  | White | Black | Hispanic |
|---|---|---|---|
| **Single** | 8.9% | 48.3% | 17.8% |
| **Married** | 91.1% | 51.7% | 82.2% |

Source: BVS 1991, 22.

These numbers may be misleading since there is no box on the birth certificate to indicate a marital status for the mother (see appendix page 113). The marital status is therefore implied by last names being the same for the mother and father, or addresses being listed as the same for the mother and father or any variations in the paternal and maternal sections of the form. According to Dale Cherry of the Data Management Branch-Bureau of Vital Statistics-Texas Department of Health, there is no cross referencing to either applications for marriage or reports of divorce (Interview, 24 Jan 1994). Any reported information by marital status is, as

a result of oversight in the design of the Birth Certificate

form and lack of cross-referencing, suspect.

The 1990 census of Texas indicated, by race, the marital

status of females age 15 and over as:

**Table 5.18**

**Marital Status-females age 15+**

|  | White | Black | Hispanic |
|---|---|---|---|
| **Married-except separated** | 57.5% | 34.7% | 53.5% |
| **Divorced** | 10.2% | 13.3% | 8.1% |

Table 5.18 indicates that white and Hispanic women share,

relatively the same marriage and divorce rates while blacks

have a much higher divorce rate and a lower marital rate.

William Julius Wilson attributes the black marital and divorce

rates to black-male (1) unemployment, (2) mortality, and (3)

incarceration rates along with antisocial and self destructive

behavior (1987, 83; Jencks 1992, 16). Christopher Jencks and

John Sibley Butler acknowledge Wilsons' position but offer

additional factors.

Jencks maintains that the stability of two-parent

families, in the United States, was influenced during the

1960s and 1970s by elite attitudes toward marriage, sex,

single parenthood and removal of the stigma of divorce (1992,

133). The elites believed that having babies out of wedlock

and divorce were socially acceptable (Jencks 1992, 134).

Butler believes that the black church became so preoccupied

with civil rights and political matters that they have ignored

other concerns including the importance of many social mores

such as marriage, and parenting (1991, 326; Telephone

interview, 20 December 1993). Michael Michie concluded that

the foundation a church offers young members of the black

community can have profound effects (1993, 65). The single

parenthood, divorce, and abortion rates, across all racial

lines, increased after the 1970s (1992, 132).

With the above information as a background; there were

89,051 abortions performed in Texas in 1990 (Bureau of Vital

Statistics 1991, 225). The three races under scrutiny in this

study accounted for 85,683 [96.2%] of the total. Contrary to

birth certificates, the form used in reporting an abortion

does classify marital status (BVS 1991, 225). Whites having

an abortion in 1990 comprised 53.4 percent, blacks were 21

percent, and 25.6 percent of the total were Hispanic (see

appendix page 98). Almost seventy-six percent [75.8] were to

unmarried women (see appendix page 127). Only 444 abortions

were performed on females 15 years old or younger (Bureau of

Vital Statistics 1991, 227).

The largest cohort to have abortions in Texas in 1990 were

the 20 to 24 age group (Bureau of Vital Statistics 1991, 227).

Over one-half [61.5%] stated they were experiencing their

first abortion (Bureau of Vital Statistics 1991, 225). The

ratio of births to abortions are shown in Table 5.19.

## Table 5.19

### Ratio of Births to Abortions-1990

| White | Black | Hispanic |
|-------|-------|----------|
| 3.3:1 | 2.4:1 | 5.3:1 |

The above information is reinforced by the analysis of Jencks and Butler. They found that social mores and attention given to the maternal practices of women by religious organizations has an impact on the birth rate. The above information also confirms not only the assertions of Jencks and Butler but also the findings of Joyce and Grossman, that Hispanics and older women are the least likely to abort (1990, 12).

Hispanics are predominantly raised in a more rigid social, cultural, and religious, Roman Catholic, setting than either blacks or whites in the United States. In the Reis et al. study the significance of family influence in the black community was found to have a negative impact on the attitude and understanding of the need black women felt toward their pregnancy and prenatal care (1992, 18). The literature indicated that the Hispanic structure is far more family oriented and steeped in a tradition of support for a pregnant woman and, later, her child. Hispanics also experience a higher birth weight average than blacks but close to the averages of whites (Cramer 1988, 177-8). Data indicates that while Hispanics experience a higher poverty level, their

utilization of government sponsored services is relatively
equal to that of blacks except in the areas of individual and
child health services.

Poor health and nutrition habits are difficult to
quantify. The BVS collects information on the birth
certificate about alcohol and tobacco use during pregnancy
(BVS 1991, 27). The BVS information is not a reliable
indicator of usage because of a high incidence of incomplete
data. The BVS reported the percentage of missing information
on tobacco as 40.7 percent and alcohol usage during pregnancy
as 51.8 percent. According to Babbie, to exclude all cases
with missing data would tend to bias the representative aspect
of the findings (1989, 402). Maternal interest in caring for
themselves, their fetus and child are very important in the
consideration of infant mortality and low birth weight
outcomes. Women who need assistance and search it out, could
be said to practie a positive SPB attribute.

The Women, Infants and Children [WIC] program provides
nutrition education and specific food items to poor pregnant
women. The program is available in all counties in the state
of Texas. In fact, the services are available in 475 clinics
in the state (CDF 1991, 16). Only twenty-seven percent of the
eligible population is participating in the program (CDF 1991,
16). This population, after the birth of their child, usually
enrolls in the AFDC program. According to the Program Budget

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and Statistics--Client Self-support Services State Office--
Texas Department of Human Services [TDHS] in 1990, the black
population utilized, as a percentage of all enrolles, AFDC
services more than either whites or Hispanics (1992, 17). The
percentages are shown in Table 5.20.

**Table 5.20**

**AFDC Enrolles-1990**

| | |
|---|---|
| **White** | 22% |
| **Black** | 39% |
| **Hispanic** | 38% |

The utilization rate for AFDC services by Hispanics is almost
equal to that of blacks indicating, among other things, that
the Hispanic and black populations made use of the WIC
services equally.

Another indicator of maternal interest in having a healthy
birth outcome is looking at the utilization rate of the
Maternal and Child Health services. The total number of
maternity patients served in 1990 was 74,499 (MCH 1991, 8).
Of that number 55.4% were Hispanic, 17% were black, and 26.3%
were white (MCH 1991, 9). The seventeen percent black
utilization rate converts into 12,665 pregnant women or 29.2%
of black women having children in 1990. This is a
significantly higher percentage than either for whites or
Hispanics.

Additionally, it is interesting to note that forty-three
percent of maternity services provided occured in metropolitan
areas-Dallas, Fort Worth, Austin, San Antonio, and Houston-of

the state (MCH 1991, 18). The Kessner index could be indicative of this high rate of utilization by black urban women. Black women who sought prenatal care in their first trimester was higher than Hispanics [58.6% versus 57%], yet lower than whites [79.3%] (BVS 1991, 67). The frequency of governmental assistance to pregnant black women over whites and Hispanics may be an indicator of the lack of family and or cultural support received by black women.

The cultural importance of pregnancy and children is further indicated by the higher utilization of child health services by Hispanics. In 1990, 137,757 children were served by MCH care givers (MCH 1991, 16). Hispanics comprised 56.2%, blacks 19%, and 22.9% whites made use of the child health services offered through MCH (MCH 1991, 17). Over half of these children were under the age of one (MCH 1991, 17). It is interesting to note that fifty-three percent of these children served were from the same metropolitan areas mentioned above (MCH 1991, 18).

The maternal and child health programs in Texas spent four billion, eight hundred and sixty million dollars in fiscal year 1991 (CDF 1991, 21). One billion, seven hundred and nineteen million came from state revenues (CDF 1991, 21). Over one-half of these funds were used for services related to pregnancy, birth, and the first year of a childs life (CDF 1991, 21). The government and private philanthropic efforts may be not focusing their attention in the proper direction.

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The next chapter will discuss how this research will analyze the commonly recognized factors of infant mortality and low birth weight rates.

In chapter four the stated method of examining the socio-psychological/behavioral [SPB] aspect of the infant mortality and low birth weight rate is the nomothetic model. The analysis of SPB is well suited to this model since there are few variables which can be empirically and statistically, at this time, affixed to this influence (Babbie 1989, 62). The variables identified by the literature review and found in the information presented in this chapter meet the criteria, previously discussed, Babbie established for consideration of causality (1989, 63). What does the evidence presented in this study indicate about SPB?

The nomothetic model, according to Babbie, aids the researcher in assigning general patterns of cause and effect and its' utility is in pointing to the need for more extensive study in the area being examined (1989, 63). SPB is a new concept in the study of infant mortality and low birth weight rates. The information provided above establishes relevance, within the parameters of the nomothetic model of inquiry, and further examination of SPB in the study of infant mortality and low birth weight rates. Thomas Kuhn points out that discovery is the result of new alternatives being presented (1970, 76). Perhaps this research is a minor suggestion that there is something, SPB, beyond the horizon in the study of

infant mortality and low birth weight.

# CHAPTER SIX

## CONCLUSIONS

### General

The postulations investigated in the previous chapter were not supported by the evidence. When each factor was controlled for, there were not similarities along racial lines in either the infant mortality or low birth weight categories. Evidence was presented that suggests SPB may be, with further examination, an acceptable alternative to explain the variance. The following sections discuss each factor examined.

### Education

The analysis in this study indicated there was a disproportion of Hispanic women giving birth in 1990 who did not have at least twelve years of education at the time of the birth of their child. The teenage birth rate was almost the same for blacks and whites. Education can therefore be said to not have a significant correlation to the higher black infant mortality and low birth weight rates experienced in Texas in 1990.

### Poverty

In every category examined, Hispanics were found to experience an asymmetric result. While the black population, per capita, experiences substantially lower incomes than whites, Hispanics encountered an even greater influence due to an even lower income than blacks. The impact of low incomes

on the black population having children could not be found to
be more adversely affected than Hispanics. The effect of
every other grouping in the poverty area was not more harsh
on blacks, over whites or Hispanics. The black infant
mortality or low birth weight rates in 1990 are not reflected
in their suffering higher poverty status than other groups
studied.

**Access/Quality**

The information presented and analyzed in this study
demonstrated that Hispanics and blacks have relatively equal
access to and quality of care in the state of Texas. Whites
were found to not use services frequented by blacks or
Hispanics as often. It was assumed that the whites not using
like service, sought care at different places than either
blacks or Hispanics. Hispanics experienced similar birth
outcomes as whites and significantly better results than
blacks while using similar care providers. Based on this
analysis, the disparate birth outcomes experienced by blacks
can not be attributed to access or quality in health care.

**Urbanicity**

The effect of urban residence on infant mortality and low
birth weight rates was found to be essentially the same for
blacks and Hispanics. The percentages of blacks and Hispanics
living in urban areas was fundamentally equal. The white
population living in urban areas, as a percentage, was not far
behind the other two groups. The drug problem, which is often

cited as being more pronounced in urban areas, was discovered
to be equally commonplace in the rural areas of Texas.

**Socio-Psychological/Behavioral**

SPB was demonstrated in this analysis as the only factor
exhibiting more negatives for the black population than
others under study. This analysis was advanced only to
consider SPB as a possible consideration in the factors
associated with infant mortality and low birth weight rates.
Information available for examination and empirical
documentation on this subject indicated that this area is of
study may hold a very important key to successfully
understanding the infant mortality and low birth weight rate
differences along racial lines. Clearly, more sophisticated
examination of this topic is warranted.


## Implications for Public Health Administrators

**Introduction**

In 1965 and again in 1969, Daniel Patrick Moynihan warned
that the programs of the "Great Society" would have serious
negative ramifications (1970, lx; 1992, 55). He has continued
his analysis throughout the years and most recently pointed
out that the problem with social policy is that no one has any
real indication of what is sufficient (1992, 60). His
skepticism is manifested in quoting "Rossi's Iron Law."


Rossi's statement was:

> If there is any empirical law that is emerging
> from the past decade of widespread evaluation
> research activities, it is that the expected
> value for any measured effect of a social
> program is zero (Moynihan 1992, 61).

There have been widely publicized policy statements at all governmental levels on the need to reform many programs designed to assist various portions of our society. Any changes this analysis suggests must be tempered by the reality that they must be frugal in both cost and the manpower needed to implement and manage them. Further, any suggestions must be mindful that they, if implemented, should show immediate positive results.

Public health administrators are in a more precarious situation than many other public servants since their decisions and actions have a more immediate and profound effect on their constituency than many other administrators. For example, the under funding of one clinic could effect the birth outcome of thousands of children. If a child is born with what could have been a preventable birth defect, the cost to society for the life of that individual is staggering. With that in mind, in addition to a discussion on each factor, state government action will be discussed independently. Suggestions will be discussed within the framework of the factor even though they may, and probably do, have corresponding implications in another area.

**Government**

    1.  Texas does control health related activities under

one agency. The Texas Department of Health, Department of Human Services, Mental Health and Mental Retardation, and Texas Education Agency are primary players involved in health matters in the state of Texas. Many activities these agencies engage in are duplications and cross over into areas of expertise of other agencies. There is little coordination of activities between agencies. All state agencies with departments with health related activities should be identified and a single agency, probably the Department of Health, assigned the task of organizing these departments under their sphere of control.

2. If, for whatever reason, consolidation is not accomplished, public administrators examining issues must learn to seek information from other agencies and departments. During the course of this examination it became clear, to this researcher, that agencies were not comfortable with the notion of collecting data from sources outside their sphere of influence. There were many instances, when discussing various aspects of this project with assorted agencies, where information previously gathered was shocking news to a department studying that issue. The reason for this consternation was that they had no knowledge of other information gathered and reported by another agency. This activity is petty, unprofessional, and a great injustice to the public trust.

3. All counties in the state should establish health

departments and, where applicable, satellite services to areas within the county identified as high risk. County governments can establish their costs to the County Indigent Health Care Program [CIHCP] and charge their costs against their mandated ten percent CIHCP liability. Case management of health care clients using assistance programs could be managed by this department. Costs could be supplemented by the state through savings derived from personnel reductions at state level resulting from the consolidation of responsibilities.

4. The state agency responsible for health should provide assistance to established and proposed private health providers in the application process, administration of, and grant renewal process of federal programs available.

5. The birth certificate used by the state should include specific marital status, substance use, and pregnancy funding source information.

**Education**

1. The Texas Education Agency should support legislation to include prenatal education in the schools beginning at either the sixth or seventh grade level. This instruction would include the male population of the schools to ensure their understanding of the need for, importance of, and assistance available to pregnant women.

2. Minority leadership, principally among religious leaders and their congregations, should be recruited at the local level to aid in the education, training, and support for

prenatal, maternal, parenting and child care. Morality is not the provence of the public health administrator. Literature, trainers, and other support functions could be supplied to these groups at a minimal cost to the state with a higher exposure rate than other forms of public disclose.

**Poverty**

1. The threshold of 133 percent of the poverty level for entry into state and federally funded assistance should be raised to 150 percent. This level has been found to be the optimum level to maximize results.

2. All pregnant women, regardless of marital status, enrolled in any government assistance program should be identified to all local health providers and enrolled automatically to receive care. Once identified, they could be monitored by health care providers to ensure proper health and prenatal care activities are provided. Women in this category who refused or did not actively participate in a program of prenatal and maternal health care would risk the loss of governmental assistance.

3. AFDC should not be tied to the marital status of the care giver of the child. Fathers, or mothers in some cases, should be encouraged to live with their families and not abandon them for financial benefits. If a family is found to qualify for AFDC assistance their could be a bonus paid for both parents residing together. This bonus could be for a time certain payment period where increased income would not

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void the assistance payment.

4. Immunizations for infants should be made available at no cost to the family through the hospital where the child was born and monitored by the state to assure compliance. This action would alleviate costs involved to the family.

**Access/Quality**

1. Physicians who desire to hold a license and practice medicine in the state of Texas should not exclude Medicaid patients. If this could not be accomplished by volunteer action it could be legislated.

2. Insurance companies and government reimbursement schemes should fund prenatal, infant, and postpartum care at 100 percent of billings. Losses for private companies in these areas could receive favorable tax treatment to offset the portion of losses above what is now paid.

3. Constant review of health care providers to ensure the highest level of care possible is provided.

**Socio-Psychological/Behavioral**

1. Extensive studies into this area must be accomplished. Funding for this activity could come from a partnership between private health care providers and government agencies.

2. Increased awareness of the potential effects of SPB on birth outcomes should be provided to health care providers at all levels, interested private concerns, and the general public.

# APPENDIX

# Revised 1989 Sample Certificate of Birth

STATE OF TEXAS — CERTIFICATE OF BIRTH — BIRTH NO

**CHILD**

1. NAME (Type or print) (a) First (b) Middle (c) Last
2. DATE OF BIRTH
3. SEX

4a. PLACE OF BIRTH — COUNTY
4b. CITY OR TOWN (If outside city limits, give precinct no.)
4c. PLACE OF BIRTH: Clinic/Doctor's Office, Hospital, Residence, Other (Specify), Licensed Birthing Center

4d. NAME OF HOSPITAL (If not in hospital, give street address)
4e. INSIDE CITY LIMITS? YES NO
5a. THIS BIRTH SINGLE, TWIN, TRIPLET, ETC. (Specify)
5b. IF NOT SINGLE BIRTH — BORN 1st, 2nd, 3rd etc. (Specify)

**FATHER**

6. NAME (a) First (b) Middle (c) Last
7. DATE OF BIRTH
8. BIRTHPLACE (State or foreign country)

9. RACE (American Indian, Black, White, etc.)
10a. IS FATHER OF HISPANIC ORIGIN? YES NO
10b. IF YES, SPECIFY (Mexican, Cuban, Puerto Rican, etc.)

**MOTHER**

11. NAME (a) First (b) Middle (c) Last (maiden)
12. DATE OF BIRTH
13. BIRTHPLACE (State or foreign country)

14. RACE (American Indian, Black, White, etc.)
15a. IS MOTHER OF HISPANIC ORIGIN? YES NO
15b. IF YES, SPECIFY (Mexican, Cuban, Puerto Rican, etc.)

16a. RESIDENCE — STATE
16b. COUNTY
16c. CITY OR TOWN (If outside city limits, show rural)
16d. STREET ADDRESS

16e. INSIDE CITY LIMITS? YES NO
17. MOTHER'S MAILING ADDRESS (If same as residence, enter Zip Code only)

18a. I hereby certify that this child was born alive on the date stated above at M
18b. ATTENDANT'S SIGNATURE AND DATE SIGNED
18c. ATTENDANT'S ADDRESS
18d. ATTENDANT'S NAME (Type or Print)
18e. ATTENDANT AT BIRTH: M.D. D.O. C.N.M. Lay Midwife Other (Specify)

19a. REGISTRAR'S FILE NO
19b. DATE REC'D BY LOCAL REGISTRAR
19c. SIGNATURE OF LOCAL REGISTRAR

**SIGNATURES**

20a. BY MY SIGNATURE, I AFFIRM THAT I AM THE MOTHER OF THIS CHILD.
20b. SOC SEC NO OF MOTHER
20d. DO YOU WANT A SOCIAL SECURITY NO FOR YOUR NEW BABY? YES NO

20c. BY MY SIGNATURE, I AFFIRM THAT I AM THE FATHER OF THIS CHILD.
20e. SOC SEC NO OF FATHER

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**CONFIDENTIAL INFORMATION BELOW — FOR MEDICAL AND HEALTH USE ONLY — THIS SECTION MUST BE FILLED OUT**

| PREGNANCY HISTORY | | EDUCATION Specify Only Highest Grade Completed 0-17 | USUAL OCCUPATION | KIND OF BUSINESS OR INDUSTRY |
|---|---|---|---|---|
| LIVE BIRTHS (Do not include this child) | OTHER PREGNANCIES NOT RESULTING IN A LIVE BIRTH | | | |
| 21a. Now Living  Number ___  □ None | 21b. Now Dead  Number ___  □ None | 22a. Number ___  □ None | 23a. Father | 24a. Father | 25a. Father |
| | | | 23b. Mother | 24b. Mother | 25b. Mother |
| 21c. DATE OF LAST LIVE BIRTH (Month, Year) | 22b. DATE LAST OTHER PREGNANCY ENDED (Month, Year) | 26. BIRTH WEIGHT  G. or  LB.  OZ. | | 27. CLINICAL ESTIMATE OF GESTATION (Weeks) |

28. DATE LAST NORMAL MENSES BEGAN (Mo., Day, Yr.)
29. MONTH OF PREGNANCY PRENATAL CARE BEGAN (1st, 2nd, 3rd, etc.) (Specify)
30. PRENATAL VISITS — Total Number (If none, so state)
31. EYE PROPHYLAXIS USED? □ YES □ NO

SEROLOGIC (SYPHILIS) TEST DONE? □ YES □ NO
32a. DURING PREGNANCY □ YES □ NO
32b. AT DELIVERY □ YES □ NO
33a. Rh FACTOR OF MOTHER □ Positive □ Negative □ Unknown
33b. Rh FACTOR OF INFANT □ Positive □ Negative □ Unknown
33c. Rho (D) GIVEN? □ YES □ NO

---

**34a. MEDICAL FACTORS FOR THIS PREGNANCY** (Check all that apply)

| | |
|---|---|
| None | 01 □ |
| Unknown | 02 □ |
| Anemia (Hct. < 30/Hgb. < 10) | 03 □ |
| Cardiac disease | 04 □ |
| Acute or chronic lung disease | 05 □ |
| Diabetes | 06 □ |
| Hydramnios/Oligohydramnios | 07 □ |
| Hemoglobinopathy | 08 □ |
| Hypertension, chronic | 09 □ |
| Hypertension, pregnancy-associated | 10 □ |
| Eclampsia | 11 □ |
| Incompetent cervix | 12 □ |
| Previous infant 4000 + grams | 13 □ |
| Previous preterm or small-for-gestational-age infant | 14 □ |
| Renal disease | 15 □ |
| Rh sensitization | 16 □ |
| Preterm rupture of membranes (< 37 weeks) | 17 □ |
| STD | 18 □ |
| Other _____ (Specify) | 19 □ |

**34a. OTHER FACTORS FOR THIS PREGNANCY** (Complete all items)

Tobacco use during pregnancy  Yes □ No □
  Average number cigarettes per day ___
Alcohol use during pregnancy  Yes □ No □
  Average number drinks per week ___
Pre-pregnancy weight ___ lbs.
Weight gained during pregnancy ___ lbs.

**35. OBSTETRIC PROCEDURES** (Check all that apply)

| | |
|---|---|
| None | 20 □ |
| Amniocentesis | 21 □ |
| Electronic fetal monitoring | 22 □ |
| Induction of labor | 23 □ |
| Stimulation of labor | 24 □ |
| Tocolysis | 25 □ |
| Ultrasound | 26 □ |
| Other _____ (Specify) | 27 □ |

**36. EVENTS OF LABOR AND/OR DELIVERY** (Check all that apply)

| | |
|---|---|
| None | 28 □ |
| Febrile (> 100°F or 38°C) | 29 □ |
| Meconium, moderate/heavy | 30 □ |
| Premature rupture of membrane (> 12 hours) | 31 □ |
| Abruptio placenta | 32 □ |
| Placenta previa | 33 □ |
| Other excessive bleeding | 34 □ |
| Seizures during labor | 35 □ |
| Precipitous labor (< 3 hours) | 36 □ |
| Prolonged labor (> 20 hours) | 37 □ |
| Dysfunctional labor | 38 □ |
| Breech/Malpresentation | 39 □ |
| Failure to progress in labor | 40 □ |
| Cord prolapse | 41 □ |
| Other _____ (Specify) | 42 □ |

**37. METHOD OF DELIVERY** (Check all that apply)

| | |
|---|---|
| Vaginal | 43 □ |
| Vaginal birth after previous C-section | 44 □ |
| Primary C-section | 45 □ |
| Repeat C-section | 46 □ |
| Forceps | 47 □ |
| Vacuum | 48 □ |

**38. ABNORMAL CONDITIONS OF THE NEWBORN** (Check all that apply)

| | |
|---|---|
| None | 49 □ |
| Anemia (Hct. < 39/Hgb. < 13) | 50 □ |
| Fetal alcohol syndrome | 51 □ |
| Hyaline membrane disease/RDS | 52 □ |
| Meconium aspiration syndrome | 53 □ |
| Assisted ventilation < 30 min | 54 □ |
| Assisted ventilation ≥ 30 min | 55 □ |
| Seizures | 56 □ |
| Other _____ (Specify) | 57 □ |

**38. CONGENITAL ANOMALIES OF CHILD** (Check all that apply)

| | |
|---|---|
| None noted | 58 □ |
| Anencephalus | 59 □ |
| Spina bifida/Meningocele | 60 □ |
| Hydrocephalus | 61 □ |
| Microcephalus | 62 □ |
| Other central nervous system anomalies  Specify | 63 □ |
| Heart malformations | 64 □ |
| Other circulatory/respiratory anomalies  (Specify) | 65 □ |
| Rectal atresia/stenosis | 66 □ |
| Tracheo-esophageal fistula/Esophageal atresia | 67 □ |
| Omphalocele/Gastroschisis | 68 □ |
| Other gastrointestinal anomalies  (Specify) | 69 □ |
| Malformed genitalia | 70 □ |
| Renal agenesis | 71 □ |
| Other urogenital anomalies  (Specify) | 72 □ |
| Cleft lip/palate | 73 □ |
| Polydactyly/Syndactyly | 74 □ |
| Limb reduction | 75 □ |
| Club foot | 76 □ |
| Diaphragmatic hernia | 77 □ |
| Other musculoskeletal/integumental anomalies  (Specify) | 78 □ |
| Down's syndrome | 79 □ |
| Other chromosomal anomalies  (Specify) | 80 □ |
| Other _____ (Specify) | 81 □ |

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## INFANT MORTALITY RATE - TEXAS 1990

Deaths Per
1000 Live
Births

|  | Urban | Rural | Total |
|---|---|---|---|
| White | 6.7 | 8.4 | 7 |
| Black | 14.2 | 12.4 | 14 |
| Hispanic | 6.8 | 8.3 | 7 |
| Total | 7.9 | 8.8 | 8 |

Source:        BVS 1990 Statistical Report
               Table 12, page 67

## LOW BIRTH WEIGHT RATE - TEXAS 1990

|  | Urban | Rural | Total |
|---|---|---|---|
| % of Live Births |  |  |  |
| White | 5.7 | 6.1 | 5.8 |
| Black | 12.8 | 11.9 | 12.7 |
| Hispanic | 6.2 | 6.9 | 6.3 |
| Total | 7 | 7 | 7 |

Source:   Texas Rural Health Chartbook
          Center for Rural Health Initiatives
          Texas Department of Health
          page 35

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## RESIDENCE BY RACE

| | Population | % by Race |
|---|---|---|
| **WHITE** | | |
| Total | 12794762 | |
| In Central City | 5318645 | 41.6 |
| Inside Urban Area | 2824973 | 22.1 |
| Outside Urban Area | 709554 | 5.6 |
| Rural | 1395077 | 10.9 |
| **BLACK** | | |
| Total | 2021632 | |
| In Central City | 1347196 | 66.6 |
| Inside Urban Area | 256812 | 12.7 |
| Outside Urban Area | 78204 | 3.9 |
| Rural | 74414 | 3.7 |
| **HISPANIC** | | |
| Total | 4339905 | |
| In Central City | 2583210 | 59.5 |
| Inside Urban Area | 568190 | 13.1 |
| Outside Urban Area | 196447 | 4.5 |
| Rural | 302550 | 7 |

Source:    1990 Census of Population--General
                Population Characteristics--Texas

| | Educational Attainment- Mothers 1990 | | | | |
| | Less than 12 | 12 years | 12 to 16 | 17 + | Unknown | Total |
|---|---|---|---|---|---|---|
| **White** | | | | | | |
| 11 to 14 | 165 | 2 | 0 | 0 | 4 | 171 |
| 15 to 19 | 10290 | 5015 | 655 | 17 | 246 | 16223 |
| 20 to 24 | 9162 | 18508 | 9667 | 483 | 342 | 38162 |
| 25 to 29 | 4418 | 18345 | 21895 | 3931 | 313 | 48902 |
| 30 to 34 | 1703 | 9421 | 17399 | 5491 | 203 | 34217 |
| 35 to 39 | 497 | 2578 | 5596 | 2483 | 74 | 11228 |
| 40 to 44 | 76 | 345 | 662 | 359 | 14 | 1456 |
| 45 + | 4 | 14 | 15 | 5 | 1 | 39 |
| Unknown | 15 | 22 | 12 | 4 | 11 | 64 |
| Total | 26330 | 54250 | 55901 | 12773 | 1208 | 150462 |
| % by Race | 17.5 | 36.1 | 37.1 | 8.5 | 0.8 | 100 |
| % by Total | 25.5 | 51.2 | 69.1 | 81.3 | 32.5 | 48.6 |
| | | | | | | |
| **Black** | | | | | | |
| 11 to 14 | 387 | 0 | 0 | 0 | 12 | 399 |
| 15 to 19 | 6458 | 3171 | 355 | 6 | 167 | 10157 |
| 20 to 24 | 2899 | 8107 | 3042 | 63 | 196 | 14307 |
| 25 to 29 | 1257 | 4832 | 3901 | 320 | 128 | 10438 |
| 30 to 34 | 544 | 2182 | 2529 | 474 | 70 | 5799 |
| 35 to 39 | 181 | 698 | 832 | 222 | 35 | 1968 |
| 40 to 44 | 35 | 98 | 82 | 28 | 3 | 246 |
| 45 + | 1 | 2 | 7 | 1 | 0 | 11 |
| Unknown | 5 | 6 | 2 | 2 | 2 | 17 |
| Total | 11767 | 19096 | 10750 | 1116 | 613 | 43342 |
| % by Race | 27.2 | 44.1 | 24.8 | 2.6 | 1.4 | 100 |
| % by Total | 11.4 | 18.1 | 13.3 | 7.1 | 16.5 | 14 |
| | | | | | | |
| **Hispanic** | | | | | | |
| 11 to 14 | 552 | 0 | 0 | 0 | 19 | 571 |
| 15 to 19 | 17011 | 3681 | 328 | 3 | 367 | 21390 |
| 20 to 24 | 20098 | 12250 | 3849 | 151 | 553 | 36901 |
| 25 to 29 | 14692 | 9858 | 5461 | 684 | 477 | 31172 |
| 30 to 34 | 8509 | 4886 | 3453 | 693 | 301 | 17842 |
| 35 to 39 | 3364 | 1562 | 1083 | 253 | 135 | 6397 |
| 40 to 44 | 758 | 217 | 121 | 45 | 31 | 1172 |
| 45 + | 49 | 12 | 3 | 0 | 2 | 66 |
| Unknown | 38 | 11 | 4 | 0 | 8 | 61 |
| Total | 65071 | 32477 | 14302 | 1829 | 1893 | 115572 |
| % by Race | 56.3 | 28.1 | 12.4 | 1.6 | 1.6 | 100 |
| % by Total | 63.1 | 30.7 | 17.6 | 11.6 | 51 | 37.4 |
| TOTAL | 103168 | 105823 | 80953 | 15718 | 3714 | 309376 |
| % OF TOTAL | 33.4 | 34.2 | 36.2 | 5.1 | 1.1 | 100 |

Source: Statistical Services
Texas Department of Health
Bureau of Vital Statistics

## EDUCATION LEVEL OF MOTHERS-1990

|  | White | Black | Hispanic | Total |
|---|---|---|---|---|
| % Below 12 years | 17.5 | 27.2 | 56.3 | 33.4 |
| % Above 12 years | 81.7 | 71.4 | 42.1 | 65.5 |

Source:    Statistical Services
Texas Department of Health
Bureau of Vital Statistics

## HOUSEHOLDS BELOW POVERTY LINE WITH CHILDREN PRESENT

| | Population | % by Race | % of total |
|---|---|---|---|
| **White** | | | |
| Married Couple | 147655 | 57.7 | 46.1 |
| Male-head of household | 14048 | 5.5 | 41.9 |
| Female-head of household | 94036 | 36.8 | 37.8 |
| Total Families Below Poverty Line | 255739 | 100 | 42.7 |
| % of All Families Living Below Poverty Line | | 15.2 | |
| **Black** | | | |
| Married Couple | 23156 | 21.5 | 7.2 |
| Male-head of household | 6184 | 5.8 | 18.4 |
| Female-head of household | 78229 | 72.7 | 31.4 |
| Total Families Below Poverty Line | 107569 | 100 | 17.8 |
| % of All Families Living Below Poverty Line | | 38.3 | |
| **Hispanic** | | | |
| Married Couple | 149881 | 62.5 | 46.7 |
| Male-head of household | 13311 | 5.5 | 39.7 |
| Female-head of household | 76662 | 32 | 30.8 |
| Total Families Below Poverty Line | 239854 | 100 | 39.8 |
| % of All Families Living Below Poverty Line | | 37.5 | |

| | Total by Category | % by Category |
|---|---|---|
| **TOTALS** | | |
| Total Married Couples | 320692 | 53.2 |
| Total-Male head of household | 33543 | 5.5 |
| Total-Female head of household | 248927 | 41.3 |
| Total-Families below poverty line | 603162 | 100 |
| % of All Families Living Below Poverty Line | | 23.1 |

Source:   1990 Census of Population--General
          Population Characteristics--Texas

| NUMBER OF CHILDREN IN HOUSEHOLDS BELOW POVERTY LINE | | | |
|---|---|---|---|
| | | White | |
| | Population | % by Race | % of Total |
| Married Couple | 1395975 | 82.7 | 68.4 |
| Male-head of household | 58348 | 3.5 | 57.4 |
| Female-head of household | 232998 | 13.8 | 50.2 |
| Total Children Below Poverty Line | 1687321 | 100 | 64.7 |
| % of All Families-Living Below Poverty Line | | 15.2 | |
| | | | |
| | | Black | |
| Married Couple | 145526 | 51.8 | 7.1 |
| Male-head of household | 15184 | 5.3 | 15 |
| Female-head of household | 120511 | 42.9 | 26 |
| Total Children Below Poverty Line | 281221 | 100 | 10.8 |
| *% of All Families-Living Below Poverty Line | | 38.3 | |
| | | | |
| | | Hispanic | |
| Married Couple | 500256 | 78.3 | 24.5 |
| Male-head of household | 28055 | 4.4 | 27.6 |
| Female-head of household | 110804 | 17.3 | 23.9 |
| Total Children Below Poverty Line | 639115 | 100 | 24.5 |
| *% of All Families-Living Below Poverty Line | | 37.5 | |
| | | | |
| | | TOTALS | |
| | Total by | % by | |
| | Category | Category | |
| Married Couple | 2041757 | 78.3 | |
| Male-head of household | 101587 | 3.9 | |
| Female-head of household | 464313 | 17.8 | |
| Total Children Below Poverty Line | 2607657 | 100 | |
| % of All Families-Living Below Poverty Line | | 23.1 | |
| | | | |
| Source:    1990 Census of Population--General | | | |
| Population Characteristics--Texas | | | |

### POVERTY STATUS BY RACE

|  | White | Black | Hispanic | Total |
|---|---|---|---|---|
| Population Above Poverty Level | 10759326 | 1335015 | 2828173 | 14922514 |
| Population Below Poverty Level | 1742084 | 599936 | 1394983 | 3737003 |
| % Above Poverty Level by Race | 86 | 69 | 67 | |
| % Below Poverty Level by Total | 14 | 31 | 33 | |

Source:   1990 Census of Population--General
Population Characteristics--Texas


POVERTY 4


## POVERTY INCOME GUIDELINES FOR THE CONTINENTAL UNITED STATES
## CALENDAR YEAR 1990

| Family Size | Actual Guideline |
|---|---|
| 1 | $6,280 |
| 2 | $8,420 |
| 3 | $10,560 |
| 4 | $12,700 |
| 5 | $14,840 |
| 6 | $16,980 |
| 7 | $19,120 |
| 8 | $21,260 |

**For each additional family member, add $2140**

Source:   U.S. Department of Health and Human Services
"Federal Register of Rules and Regulations."
2-16-90

## MEDICAID FUNDED DELIVERIES - TEXAS

| Fiscal Year | White | Black | Hispanic | Total |
|---|---|---|---|---|
| 1991 | 32552 | 23960 | 57630 | 114142 |
| 1990 | 27419 | 21512 | 46924 | 95855 |
| 1989 | 19622 | 17952 | 32956 | 70530 |
| 1988 | 12522 | 14337 | 20445 | 47804 |

Source: Texas Department of Human Services
Special Analysis, November, 1992

## BIRTHS—TEXAS

| Calendar Year | White | Black | Hispanic | Total |
|---|---|---|---|---|
| 1991 | 146221 | 43057 | 120996 | 310274 |
| 1990 | 150461 | 43342 | 115576 | 309379 |
| 1989 | 151083 | 42938 | 106925 | 300946 |
| 1988 | 153452 | 43242 | 100035 | 296729 |

Source: BVS 1990 Statistical Report
Texas Department of Health

## PER CAPITA INCOME-TEXAS

| | |
|---|---|
| White | $14,629 |
| Black | $8,102 |
| Hispanic | $6,833 |
| Total Population | $12,904 |

|  | Employed | | | Unemployed | | |
|---|---|---|---|---|---|---|
|  | Population | % by Race | % by Total | Population | % by Race | % by Total |
| WHITE |  |  |  |  |  |  |
| Males 16 and over | 3422053 | 35.1 |  | 204397 | 2.1 |  |
| Females 16 and over | 2644105 | 27.1 |  | 160749 | 107 |  |
| Total by Race | 6066158 | 62.2 | 43.2 | 365146 | 3.7 | 2.6 |
| BLACK |  |  |  |  |  |  |
| Males 16 and over | 391852 | 27.4 |  | 62120 | 4.3 |  |
| Females 16 and over | 415721 | 29.1 |  | 58513 | 4.1 |  |
| Total by Race | 807573 | 56.4 | 5.6 | 120633 | 8 | 0.9 |
| HISPANIC |  |  |  |  |  |  |
| Males 16 and over | 981179 | 34.4 |  | 114065 | 4 |  |
| Females 16 and over | 666277 | 23.4 |  | 84655 | 3 |  |
| Total by Race | 1647456 | 57.8 | 11.7 | 198720 | 7 | 1.4 |
| TOTAL | 8521187 |  | 60.1 | 684499 |  | 4.9 |

|  | Not In Labor Force (less 65 +) | | | Over 65 | | |
|---|---|---|---|---|---|---|
|  | Population | % by Race | % by Total | Population | % by Race | % by Total |
| WHITE |  |  |  |  |  |  |
| Males 16 and over | 520686 | 5.3 |  | 599427 | 6.1 |  |
| Females 16 and over | 1344972 | 13.8 |  | 877566 | 9 |  |
| Total by Race | 1865658 | 19.1 | 13.3 | 1476993 | 15.1 | 10.5 |
| BLACK |  |  |  |  |  |  |
| Males 16 and over | 155262 | 10.9 |  | 61195 | 4.3 |  |
| Females 16 and over | 190795 | 13.3 |  | 95757 | 6.7 |  |
| Total by Race | 346057 | 24.2 | 2.5 | 156952 | 11 | 1.1 |
| HISPANIC |  |  |  |  |  |  |
| Males 16 and over | 215899 | 7.6 |  | 106536 | 3.7 |  |
| Females 16 and over | 557625 | 19.6 |  | 124515 | 4.4 |  |
| Total by Race | 774524 | 27.2 | 5.5 | 231051 | 8.1 | 1.7 |
| TOTAL | 2986239 | 21.3 | 21.3 | 1864996 | 13.3 | 13.3 |

|  | Totals | | |  |  |  |
|---|---|---|---|---|---|---|
|  | Population | % by Race | % by Total |  |  |  |
| WHITE |  |  |  |  |  |  |
| Males 16 and over | 4728563 | 48.5 | 33.7 |  |  |  |
| Females 16 and over | 5027392 | 51.5 | 35.8 |  |  |  |
| Total by Race | 9755955 | 100 | 69.5 |  |  |  |
| BLACK |  |  |  |  |  |  |
| Males 16 and over | 670429 | 46.8 | 4.8 |  |  |  |
| Females 16 and over | 760786 | 53.2 | 5.4 |  |  |  |
| Total by Race | 1431215 | 100 | 10.2 |  |  |  |
| HISPANIC |  |  |  |  |  |  |
| Males 16 and over | 1418679 | 49.8 | 10.1 |  |  |  |
| Females 16 and over | 1433072 | 50.2 | 10.2 |  |  |  |
| Total by Race | 2851751 | 100 | 20.3 |  |  |  |
| TOTAL | 14038921 | n/a | 100 |  |  |  |
| TOTAL MALES 16+ | 6817671 |  | 48.6 |  |  |  |
| TOTAL FEMALES 16+ | 7221250 |  | 51.4 |  |  |  |
|  |  |  |  |  |  |  |
|  | Source: | 1990 Census of Population--General |  |  |  |  |
|  |  | Population Characteristics--Texas |  |  |  |  |

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# Family Composition

|  | White | |
| --- | --- | --- |
|  | Population | % by Race |
| Total Households | 4800925 | 100 |
| Families-children present | 3383168 | 70.4 |
| Married-children present | 2820207 | 58.7 |
| Female head-no husband | 426564 | 8.8 |
| Persons per household | 2.6 | n/a |
| Persons per family | 3.15 | n/a |

|  | Black | |
| --- | --- | --- |
| Total Households | 684255 | 100 |
| Families-children present | 480461 | 70.2 |
| Married-children present | 255917 | 37.4 |
| Female head-no husband | 190788 | 27.9 |
| Persons per household | 2.84 | n/a |
| Persons per family | 3.46 | n/a |

|  | Hispanic | |
| --- | --- | --- |
| Total Households | 1158010 | 100 |
| Families-children present | 953340 | 82.3 |
| Married-children present | 760973 | 65.7 |
| Female head-no husband | 181798 | 15.7 |
| Persons per household | 3.62 | n/a |
| Persons per family | 4.01 | n/a |

Source:    1990 Census of Population--General
           Population Characteristics--Texas

**MEAN MATERNAL AGE AT FIRST BIRTH - TEXAS 1965-1990**

| Year | White Metro | White Rural | Black Metro | Black Rural | Hispanic Metro | Hispanic Rural |
|------|-------------|-------------|-------------|-------------|----------------|----------------|
| 1965 | 21.1 | 20.5 | 19.5 | 19 | 20.9 | 20.1 |
| 1970 | 21.4 | 20.8 | 19.4 | 18.9 | 20.9 | 20.3 |
| 1975 | 22.1 | 21.2 | 19.5 | 18.6 | 20.7 | 19.9 |
| 1980 | 23.2 | 21.8 | 20.5 | 19.5 | 21.1 | 20.3 |
| 1985 | 24.2 | 22.4 | 21.4 | 19.9 | 21.6 | 20.3 |
| 1990 | 25.2 | 22.8 | 22 | 20.3 | 22 | 20.8 |

Source:  BVS 1990 Statistical Report
Texas Department of Health
Table 11-4, page 29

| FIRST BIRTH RATES BY AGE OF MOTHER - 1970-1990 (Per 1000) | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | Age of Mother | | | | |
| Year and Race | | | | | | | |
| of Child | 15 to 44 | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 to 44 |
| ALL RACES | | | | | | | |
| 1970 | 37.5 | 1.6 | 64.6 | 85.6 | 29.2 | 5.8 | 1.6 | 0.3 |
| 1975 | 31 | 1.8 | 58.3 | 60.3 | 30.1 | 6.3 | 1.4 | 0.2 |
| 1980 | 33.8 | 1.7 | 56.1 | 64.8 | 37.6 | 11.6 | 2.3 | 0.3 |
| 1985 | 31.5 | 1.7 | 51.6 | 67.5 | 42.1 | 15.3 | 3.4 | 0.4 |
| 1990 | 30.1 | 1.4 | 52.7 | 62.6 | 40.3 | 18.3 | 5.4 | 0.8 |
| WHITE | | | | | | | |
| 1970 | 34 | 0.6 | 54 | 83.1 | 29.8 | 5.3 | 1.2 | 0.2 |
| 1975 | 26.7 | 0.6 | 43.4 | 56.1 | 32 | 6.3 | 1.1 | 0.1 |
| 1980 | 30.4 | 0.6 | 42.1 | 61.6 | 41 | 12.6 | 2.1 | 0.2 |
| 1985 | 29.5 | 0.6 | 38.1 | 65.4 | 47.8 | 18.1 | 3.7 | 0.3 |
| 1990 | 26.8 | 0.5 | 36.7 | 55.6 | 44.8 | 21.3 | 6.3 | 0.8 |
| BLACK | | | | | | | |
| 1970 | 42.8 | 5.7 | 98.1 | 73.3 | 17.9 | 4.1 | 1.3 | 0.2 |
| 1975 | 36.1 | 5.9 | 89.3 | 52.9 | 17.6 | 3.9 | 1 | 0.1 |
| 1980 | 36.2 | 4.6 | 77.5 | 57.8 | 24.3 | 7.9 | 1.6 | 0.1 |
| 1985 | 32.8 | 4.7 | 72.1 | 63.4 | 28.9 | 9.8 | 2.4 | 0.3 |
| 1990 | 32.3 | 3.8 | 75.3 | 63.6 | 30.2 | 12.9 | 3.8 | 0.7 |
| HISPANIC | | | | | | | |
| 1970 | 49.3 | 2.1 | 79.9 | 107.9 | 34.7 | 9.5 | 3.5 | 0.9 |
| 1975 | 44.8 | 2.7 | 85 | 82.1 | 30.7 | 7.9 | 3.1 | 0.6 |
| 1980 | 44.5 | 2.6 | 81.6 | 80.7 | 33.6 | 10 | 3.5 | 0.6 |
| 1985 | 36.8 | 2.4 | 72 | 75.2 | 32.5 | 9.6 | 3 | 0.5 |
| 1990 | 36.9 | 2 | 69.8 | 75.6 | 34.9 | 13.2 | 3.9 | 0.7 |
| | | | | | | | |
| | Source: | 8VS 1990 Statistical Report | | | | | |
| | | Texas Department of Health | | | | | |
| | | Table 11-5, page 30 | | | | | |

## PRENATAL CARE RECEIVED AFTER FIRST TRIMESTER - 1990

| | Urban | Rural | State |
|---|---|---|---|
| % Receiving Late Prenatal Care | | | |
| White | 19.6 | 27.2 | 20.9 |
| Black | 38.2 | 51 | 39.6 |
| Hispanic | 40.5 | 47 | 41.5 |
| Total | 29.8 | 36.3 | |

Source:  Texas Rural Health Chartbook
page 34

## ONSET OF PRENATAL CARE WITHIN FIRST TRIMESTER-1990

| | Total | % |
|---|---|---|
| Texas | 210589 | 68.4 |
| White | 122632 | 79.3 |
| Black | 24478 | 58.6 |
| Hispanic | 63479 | 57 |

Prenatal Care 2

### KESSNER INDEX - 1990

| | White | Black | Hispanic | Total |
|---|---|---|---|---|
| % Adequate Prenatal Care | 74.2 | 50.1 | 45.6 | 60.8 |
| %Inadequate Prenatal Care | 6.8 | 18.6 | 20.7 | 13.3 |

Source: BVS 1990 Statistical Report
Texas Department of Health
Table 12

ABORTION 1

### INDUCED TERMINATIONS OF PREGNANCY - 1990

| | White | Black | Hispanic | Total |
|---|---|---|---|---|
| Population | 45743 | 18022 | 21919 | 85684 |
| Percentage | 53.40% | 21% | 25.60% | 100% |

Source: Statistical Services
Texas Department of Health
Bureau of Vital Statistics

## RATE OF ABORTION BY RACE-TEXAS 1990

| | Total Pregnancies | Births | % by Race | Abortions | % by Race |
|---|---|---|---|---|---|
| White | 196204 | 150461 | 76.70% | 45743 | 23.30% |
| Black | 61364 | 43342 | 70.60% | 18022 | 29.40% |
| Hispanic | 137495 | 115576 | 84.10% | 21919 | 15.90% |
| Total | | 309379 | N/A | 85684 | N/A |

Source: Statistical Services
Texas Department of Health
Bureau of Vital Statistics

## TEXAS RESIDENT ABORTIONS 1990

| RACE | MARRIED | UNMARR | UNK | Total |
|---|---|---|---|---|
| HISPANIC | 6256 | 15508 | 155 | 21919 |
| WHITE | 10413 | 34898 | 431 | 45742 |
| BLACK | 3249 | 14558 | 214 | 18022 |

Prepared by: Statistical Services
Texas Department of Health
Bureau of Vital Statistics
February 16, 1994

## MARRIED MOTHERS-1990

| AGE | White | Black | Hispanic |
|---|---|---|---|
| 11 to 14 | 68 | 39 | 242 |
| 15 to 19 | 11586 | 2698 | 14642 |
| 20 to 24 | 33447 | 6806 | 29884 |
| 25 to 29 | 46607 | 6907 | 27396 |
| 30 to 34 | 33126 | 4295 | 16032 |
| 35 to 39 | 10812 | 1474 | 5692 |
| 40 to 44 | 1395 | 185 | 1010 |
| 45+ | 37 | 9 | 53 |
| Unknown | 58 | 7 | 51 |
| | | | |
| Column Total | 137136 | 22420 | 95002 |
| Percentage | 91.1 | 51.7 | 82.2 |

## NOT MARRIED-1990

| | White | Black | Hispanic |
|---|---|---|---|
| 11 to 14 | 103 | 360 | 329 |
| 15 to 19 | 4637 | 7459 | 6748 |
| 20 to 24 | 4715 | 7501 | 7017 |
| 25 to 29 | 2295 | 3531 | 3776 |
| 30 to 34 | 1091 | 1504 | 1810 |
| 35 to 39 | 416 | 494 | 705 |
| 40 to 44 | 61 | 61 | 162 |
| 45 + | 2 | 2 | 13 |
| Unknown | 6 | 10 | 10 |
| | | | |
| Column Total | 13326 | 20922 | 20570 |
| Percentage | 8.9 | 48.3 | 17.8 |

Source:  BVS 1990 Statistical Report
Texas Department of Health
p. 16

|  | White | |
|---|---|---|
|  | Population | % by Race |
| Female-15 years and over | 5108159 | 100 |
| Married-except separated | 2935313 | 57.5 |
| Divorced-not married | 521441 | 10.2 |

|  | Black | |
|---|---|---|
| Female-15 years and over | 775642 | 100 |
| Married-except separated | 269118 | 34.7 |
| Divorced-not married | 103308 | 13.3 |

|  | Hispanic | |
|---|---|---|
| Female-15 years and over | 1489422 | 100 |
| Married-except separated | 797413 | 53.5 |
| Divorced-not married | 120955 | 8.1 |

Source:   1990 Census of Population--General
Population Characteristics--Texas

## TOBACCO USED DURING PREGNANCY

| AGE | White | Black | Hispanic |
|---|---|---|---|
| 11 to 14 | 20 | 5 | 11 |
| 15 to 19 | 3328 | 331 | 700 |
| 20 to 24 | 6711 | 997 | 1384 |
| 25 to 29 | 6281 | 1182 | 1210 |
| 30 to 34 | 3642 | 792 | 786 |
| 35 to 39 | 1116 | 233 | 257 |
| 40 to 44 | 151 | 30 | 40 |
| 45+ | 4 | 1 | 6 |
| Age Unknown | 9 | 1 | 2 |
| | | | |
| Column Total | 21262 | 3572 | 4396 |
| Percentage | 14.10% | 8.20% | 3.80% |

## TOBACCO NOT USED DURING PREGNANCY

| AGE | White | Black | Hispanic |
|---|---|---|---|
| 11 to 14 | 133 | 353 | 513 |
| 15 to 19 | 11137 | 8633 | 18675 |
| 20 to 24 | 27075 | 11541 | 32006 |
| 25 to 29 | 36914 | 7902 | 27021 |
| 30 to 34 | 26375 | 4311 | 15415 |
| 35 to 39 | 8576 | 1477 | 5525 |
| 40 to 44 | 1120 | 178 | 1011 |
| 45+ | 29 | 10 | 52 |
| Age Unknown | 40 | 11 | 43 |
| | | | |
| Column Total | 111399 | 34416 | 100261 |
| Percentage | 74% | 79.40% | 86.80% |
| Use Unknown | 11.80% | 12.40% | 9.40% |

Source: Statistical Services
Texas Department of Health
Bureau of Vital Statistics

## POPULATION PER PHYSICIAN

| Urban | Rural | State |
|-------|-------|-------|
| 684 | 1395 | 754 |

Source:   Texas Rural Health Chartbook p. 41

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