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**HIGH-RISK, GOOD OUTCOMES: THE HEALTH PARADOX
OF LATINA MOTHERS AND INFANTS**

By

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January 1995

**A Publication of the
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The Chicano/Latino Policy Project is an affiliate of the
Institute for the Study of Social Change at the University of California at Berkeley.

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HIGH RISK, GOOD OUTCOMES: HEALTH CARE
IN CHINA, MOTHERS AND INFANTS

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The Chicano/Latino Policy Project is an affiliated research program of the Institute for the Study of Social Change at the University of California, Berkeley. The Policy Project coordinates and develops research on public policy issues related to Latinos in the United States and serves as a component unit of a multi-campus Latino policy studies program in the University of California system. The Policy Project's current priority research areas are education, health care, political participation and labor mobility with an emphasis on the impact of urban and working poverty and immigration.

The Institute for the Study of Social Change is an organized research unit at the University of California at Berkeley devoted to studies that will increase understanding of the mechanisms of social change and the development of techniques and methods to assist the direction of social change for the general improvement of social life. It has a particular mandate to conduct research and to provide research training on matters of social stratification and differentiation, including the condition of both economically and politically depressed minorities as well as the more privileged strata.

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ABSTRACT

The Mexican-origin population in California is one of the fastest growing groups in the state, due to high immigration and fertility rates. Despite the presence of a variety of risk factors associated with poor pregnancy outcomes in other populations, Mexican-origin women enjoy low rates of infant mortality and low birthweight. This striking epidemiological paradox in such a significant portion of the state's population merits close examination.

This working paper brings together a number of studies that have sought to explain the phenomenon of positive birth outcomes in the at-risk Mexican-origin population. Past studies center around four hypotheses which suggest that 1)selective migration might favor more healthy mothers; 2)protective socio-cultural factors could outweigh many of the risk factors associated with adverse birth outcomes; 3)excessive fetal deaths within the population eliminate weaker fetuses before birth; and 4)infant deaths may go unreported.

An understanding of these issues will aid policy makers and health care providers in designing interventions and policies to protect the health of Latina mothers and children in California.



I. INTRODUCTION

The 22 million Latinos in the United States account for 9% of the total population, and as a group are growing five times faster than the nation as a whole -- a rate nine times that of non-Latino whites. While approximately half of this increase is due to immigration, Latina women are also having children at a rate 50% higher than non-Latina women.¹

Nowhere is this demographic trend more apparent than in California, where more than half of the nation's Latinos reside. While Latinos currently represent 26% of the state's population, they make up more than 50% of the immigration inflow, and Latina women collectively give birth to 42.3% of the state's babies.² Among Latinas in the state, the general fertility rate in 1990 was 127.3 per 1,000 women of childbearing age (15-44 years). This contrasts sharply with rates of 64.3 per 1000 among whites, 89.1 per 1000 among blacks, and 77.5 per 1000 among Asians and "others."³

The increasing proportion of infants born to Latina women, predominantly of Mexican descent, in California each year provides a compelling rationale for examining the birth outcomes of this population. In doing so, one encounters a fascinating epidemiological paradox: despite multiple social and health risks affecting Latina women, their birth outcomes are strikingly favorable.

Latina women of reproductive age share a socioeconomic profile characterized by low educational attainment and a high incidence of poverty. In addition to poverty, health status is compromised by lack of health insurance, delayed entry into prenatal care services, large families with short birth spacing intervals, high rates of teen pregnancy, and advanced maternal age.

These characteristics have traditionally been considered as risk factors associated with adverse birth outcomes in other populations. Yet, Latina women have favorable birth outcomes. For example, overall infant mortality rates, which include rates of both neonatal (infant death at 0-27 days) and postneonatal mortality (infant death at 28-364 days), show *differentials along ethnic lines*. While more than 16 non-Latino black infants died for every 1,000 live births in California in 1990, the infant mortality rates for non-Latino whites and Latinos were 7.2 per 1,000 and 7.4 per 1000, respectively.⁴ Similarly, Vital Statistics records in California throughout the 1980's show notably low rates of postneonatal mortality among Latinos and among those of Mexican descent in particular. In 1986, the postneonatal mortality rate among California's Latinos (2.8 per 1000 live births) was lower than that for non-Latino whites (3.5), and less than half that of non-Latino blacks (7.2).⁵

Another indicator of birth outcomes is low birthweight. Infants who at birth weigh 2500 grams or less have been found to have higher rates of morbidity, neurological impairments and mortality during the early years of life. Among Mexican-Americans in California, the rate of low birthweight is equal to

that of non-Latino whites (5.1%), and well below that of non-Latino blacks (12.5%).⁴

II. COMPETING EXPLANATIONS OF THE HEALTH PARADOX OF LATINA MOTHERS AND INFANTS

In recent years, researchers have explored a number of hypotheses that might explain the phenomenon of good birth outcomes in the at-risk Latina population. These hypotheses include selective migration favoring more healthy mothers; the presence of protective socio-cultural factors that could outweigh many of the risk factors associated with adverse birth outcomes; excessive fetal deaths within the population, which would eliminate the weaker fetuses before they are born; and the underreporting of infant deaths.

This working paper will bring together and analyze the tenets of these hypotheses and the research findings that support or refute them. It will focus in particular on birth outcomes and other reproductive health issues among Mexican-born and U.S. born women of Mexican descent, as these subgroups constitute the largest segment of the Latino population in California. These issues will be examined in order to inform policy makers and recommend interventions that enhance and protect the health of Latina mothers and children in California.

A. Selective Migration

The birth outcomes of Mexican immigrant women residing in the United States are markedly better than those of women residing in Mexico. In Mexico, as many as 15% of babies are born at a low birthweight, and 47 Mexican-born infants die in their first year for every 1,000 live births.⁶ The health differences between the parent population and the "migrant population" may lie in selective migration factors which bring more healthy representatives of the Mexican population to the United States.

The question of whether migrants are a "superior" group because of their willingness to uproot and resettle, or the "desperate and unsuccessful" in their country of origin, has long been debated,⁷ with some agreement that the sociodemographic and health characteristics of international migrants are almost never representative of the native population.^{8,9}

Migration can be selective on many levels. One suggestion is that selection could occur for psychological or biological reasons.^{10,11,12,13} Since it takes strong initiative to move, those who are willing to face the risks inherent in uprooting and adapting to a new society can be thought of as "psychologically selected."¹⁰ Similarly, a biological selection may occur as more frail individuals stay behind and the

sturdy ones leave.

In addition, several studies have shown that both economic and cultural self-selection processes operate in voluntary migration.^{7,14,15} A strong motivation to improve their socio-economic condition and the ability to adapt to change are two characteristics which seem to be particularly influential among individuals who decide to migrate.^{10,16} Immigration is expensive and requires a substantial investment. Lack of economic means deters the very poor in Mexico from joining the immigration flow. It is rather the somewhat more affluent and skilled persons who, being exposed to the forces of modernization, are the most likely to go in search of higher wages and a better lifestyle.¹⁶

Recent evidence suggests that selection factors may also vary according to gender roles and expectations. Studies by Frisbie and Bean,¹⁶ Portes¹⁰ and Cornelius¹⁷ indicate that Mexican male migrants are pushed out of their communities by lack of employment and pulled to the United States by labor and higher wages. Guendelman and Perez-Itriago elaborate on this notion by examining the social function tied to seasonal migration between Mexico and the United States.¹⁸ For men, the disruption of social ties inherent in migration is outweighed by the enhanced economic and social status in the home community enjoyed by those willing to cross the border to become viable breadwinners and send remittances back home.

As is the case with male migrants, women are subject to social forces and pressures but are not motivated to migrate for purely economic reasons. According to Guendelman, for most women, participation in migration is a means of keeping the family together and providing continuity of care.¹⁹ Similarly, in her examination of female migrants living in 10 outmigrating communities in the Mexican states of Jalisco, Michoacan, Guanajuato and Nayarit, Donato found that the influence and support of the family network is the strongest predictor for migration among women.²⁰ It appears, as Grasmuck and Pessar argue, that households are the social units in which decisions are made about who migrates and when.²¹

Such studies on female migration, which focus on the importance of the family network and protection of the family unit, suggest that health selection factors may be stronger among male migrants who are most often the initiators of migration, than among females, who are often the implementors of household decisions to migrate.

Other studies conducted outside the United States, focusing primarily on adult males, have identified health characteristics that distinguish migrants from non-migrants. For example, research examining immigrant mortality in England and Wales determined that it was the healthier and more motivated who were prepared to face the hardships involved in uprooting and resettlement.¹¹ Similar

findings were reported in an Australian study on cancer¹² and a British study in cardiovascular disease.¹³ Bentham examined data on self-reported morbidity from the 1981 Census for Great Britain, and found that the health status of migrants differed considerably from that of non-migrants; age at and distance of migration significantly affected this differential.²² Young migrants moving longer distances, such as those undertaking international migration, were relatively healthy, while older people tended to migrate fairly short distances in search of better medical services and/or living conditions when their health was relatively poor. Migration rates were also higher among adults than children; these rates rose with income and social status, especially for long-distance migration. Furthermore, Bentham observed that outmigration from any area negatively affected the overall health status of the sending community, while presenting a favorable health picture in the receiving community.

If Bentham's findings also apply to Mexican immigrants to the United States, we would expect that 1) Mexican female immigrants of reproductive age would be in good health, since they migrated as children or young adults, and that 2) the health status of the "parent population" or sending community would be more depressed than that of the immigrant or receiving community. These differences would be reflected in birth outcome differentials between Mexican women living in Mexico and in the United States. The extent to which selection factors influence differences in health outcomes between Mexican women residing in Mexico and the United States needs to be further elucidated with strong epidemiological research.

B. Protective Socio-Cultural Factors

A second hypothesis put forth to explain the epidemiological paradox is that Mexican immigrants bring with them a socio-cultural orientation including a variety of cultural scripts and strong systems of social support, as well as a number of behavioral factors which seem to be associated with favorable birth outcomes.

Family and other Social Supports

The Mexican culture is often referred to as offering a "context for childbearing" such that it is considered both a joy and an obligation for both parents. A number of studies have concluded that fertility levels among Mexicans are high because children and family are highly valued.^{23,24,25}

A culturally-based appreciation for children among Mexican-Americans is set in a social context where the family is the main focus of social identification. Kinship comprises not only relatives, but also the Latino "compadre" system, which establishes "co-parents" in the Catholic tradition, who share broader,

less formalized obligations toward the children.²⁶

The same network that draws migrants to the United States continues to affect the development and behaviors of individuals, families and community in the host country. In a review of research on Latino families throughout the 1980s, Vega notes the role played by family networks in facilitating "socioeconomic incorporation" and other aspects of social adaptation.²⁷ A number of studies have focused on the importance of family ties not only in facilitating immigration but in promoting resettlement and adaptation processes.^{28,29,30}

While the effect of these cultural norms on health and well-being might be intuited as positive, the extent to which family structure and relationships directly affect birth outcomes has not been sufficiently studied.

Behavioral Factors

Several authors have posited a link between protective behavioral factors among Mexican American women and their favorable birth outcomes.^{31,32,33} Protective behavioral factors include:

1. *Planned Pregnancy*: It has been noted that a planned pregnancy is highly correlated with a cluster of attitudinal variables whereby women engage in self-care practices to protect the health of the baby. One study of prenatal care suggests that Mexican-Americans are more likely to plan pregnancies than African-American women (52% vs. 25% of women).³⁴ Perhaps this is connected to the cultural expectation among Mexicans that having a child demonstrates one's femininity; fertility signifies womanhood.

2. *Low Levels of Substance Use*: Smoking, alcohol and caffeine intake have all been associated with poor birth outcomes. Fetal growth retardation has been associated with smoking^{35,36} and with moderate to high levels of alcohol use,^{37,38} and both smoking and caffeine intake have been associated with low birthweight.^{35,36,39,40}

A study on the Mexican-origin population, conducted by Guendelman and Abrams, shows very low levels of alcohol, drug and cigarette use in comparison with the non-Latino white population. Using data from the Hispanic Health and Nutrition Examination Survey (HHANES) conducted in 1982-84, the study examined dietary, alcohol and tobacco intake across four reproductive groups of Mexican-American women (interconceptional, pregnant, lactating, and non-lactating postpartum), and then compared these intakes to those of the non-Latina white women surveyed in the parallel National Health and Nutrition Examination Survey (NHANES II, conducted in 1976-80). The researchers found that, while the Mexican-American women had lower socioeconomic status and worse perceived health when compared

with non-Latino whites, their health habits were markedly better.

Twenty-three percent of Mexican American women smoked in the interconceptional period, but smoking was lower among pregnant and lactating women. Only 8.1% smoked during pregnancy and 6.5% during lactation. Among non-Latina white women, however, there were twice as many interconceptional smokers (43%) and this level remained high during pregnancy (37.3%). Only lactating women had less elevated smoking levels (9.7%).⁴¹

Mexican-American women also reported low levels of alcohol (less than .1 ounce servings per day) and caffeine use (less than 1.5 daily servings) in comparison with non-Latino whites (.25 and 2.6 daily servings, respectively). These differentials were especially prevalent during pregnancy and lactation, indicating that Latina women may be cognizant of the potential negative consequences of substance abuse and tobacco use during pregnancy.

Similarly, work by Zambrana and Scrimshaw in Los Angeles shows that Mexican-American women tend to abstain from use of illicit drugs. In their multi-ethnic sample of 107 primiparous women, marijuana use was reported by 25% of black respondents, 1.5% of recent immigrants and by no Mexican-Americans. Whereas 10% of black respondents reported use of hard drugs, no Mexican-Americans did so.³⁴

These findings, based on self-report, are consistent with those of Vega et al. in a recent large-scale, biologically-based study of perinatal substance abuse. Through anonymous urine toxicology screening of pregnant women, this study found that 6.9% of Latina women used alcohol during pregnancy. This prevalence rate was close to that of non-Latino whites (6.1%) but significantly lower than that of African Americans (11.6%). Rates of illicit drug use provide an even starker contrast; whereas 4.9% of non-Latino whites and 11.9% of African American women used illicit drugs during pregnancy, the rate among Latina women was only 1.5%. Self-reported tobacco use in this study ranged from 20.1% for African-American women, 14.8% for non-Latino whites to 3.3% for Latina women.⁴²

3. *Nutrition:* The impact of diet on pregnancy outcomes, milk production during lactation, and body weight has also been documented. Specific nutrients, such as folic acid, calcium and zinc, have been empirically related to pregnancy outcomes,^{35,43} and there is no evidence of substantial differences in nutritional requirements among various ethnic groups.³⁵

Several authors have suggested that the diet and health habits of Mexican-American women may contribute to favorable birth outcomes in this population.^{31,32,33} Again, using data from the 1982-84 HHANES and the 1976-80 NHANES to compare nutrient intake between Latina and non-Latina white women of reproductive age, Guendelman and Abrams found significant ethnic differences in dietary

intake. Mexican Americans reported significantly higher intakes of protein, folic acid and zinc than non-Latina white women.⁴⁴

The Effect of Acculturation on Pregnancy Risks and Outcomes

A closer examination of health status among Latinas shows that Mexican-born mothers have more favorable birth outcomes than U.S.-born mothers of Mexican origin. For instance, rates of low birthweight for Mexican-born mothers have been recorded as low as 3.9%, while second or third generation Mexican-origin mothers born in the U.S. have a low birthweight rate of 6.1%.³³ Similarly, the postneonatal mortality rate among infants of Mexican-born mothers (2.6 per 1,000 live births) is lower than that of infants of U.S.-born mothers (3.6 per 1,000 live births).³¹ Differentials in pregnancy outcome favoring immigrant women born in Mexico may be a result of a different social, behavioral and risk profile. Compared with U.S.-born mothers of Mexican descent, Mexican-born, first generation women have a lower socioeconomic status, a higher percentage of mothers giving birth when they are over 35 years of age, and less adequate prenatal care. These characteristics would seem to place first generation women at higher risk for adverse birth outcomes. Yet, it is important to note that with increasing acculturation, other risk factors for poor birth outcomes develop. Alcohol intake, illicit drug consumption and tobacco use increase markedly, and nutritional habits deteriorate.^{45,46} For example, Vega et al. compared Mexican-born women with U.S.-born women of Mexican descent and found that alcohol use during pregnancy increased from 6.7% to 7.3% and the rate of prenatal illicit drug use increased from .63% to 3.4%.⁴² Similarly, Guendelman et al. found that the prevalence of smoking increased from 21% among foreign-born to 28% among U.S.-born women of Mexican descent who were of childbearing age.³³ Shifts in these behaviors could result in the increased prevalence of low birthweight in Mexican-Americans who are second generation and beyond.³³

Differences in nutrient intake between first and second generation women of Mexican origin may also explain differences in birth outcomes. Guendelman and Abrams in a recent study found that despite lower socioeconomic status among first generation immigrant women, their average intake of protein, vitamins and minerals involved in fetal development was higher than that of second generation Mexican-American women.⁴⁴ It appears that Mexican-born women of childbearing age adhere to a traditional Mexican diet, whereas the nutritional intake of second generation women born in the U.S. resembles the less healthy habits of non-Latino whites.

The above findings suggest that the mix of protective factors and risk factors is altered in the acculturation process. In addition to changes in behavior, changes in sociodemographic status occur,

which may also affect pregnancy outcomes. Mexican immigrants are considered to be of low socioeconomic status in the United States. Yet, it has been amply documented that average family earnings are significantly improved over those in Mexico, and a large proportion of immigrants are able to accumulate small savings and send remittances back home.¹⁷ These improvements in objective socioeconomic conditions may perhaps result in an enhanced sense of well-being, which could decrease the risk of poor pregnancy outcomes. In contrast, U.S.-born women of Mexican descent do not appear to enjoy a similar sense of getting ahead in society. Many become stalled in poverty and feel oppressed by social discrimination.⁴⁷ Subjective feelings of poverty and discrimination have been shown to affect birth outcomes negatively.⁴⁸

Evidence on the effects of acculturation on birth outcomes is still scant. Further studies, particularly those focusing on the impact of years of residency in the United States, will be necessary in order to understand better the associations between protective sociocultural behaviors that immigrants bring to the U.S., the negative effects of acculturation, and birth outcomes.

C. Excess Fetal Deaths

Instead of stressing the strengths or attributes of the immigrant population, other viewpoints focus on deficits to explain the paradox of positive perinatal outcomes among Latina women. One such theory suggests that excess fetal deaths occur within the Latino population, eliminating biologically weaker fetuses and "selecting" those more likely to survive as healthy children.^{49,50} The logic of this theory leads to the expectation that fetal death rates among women of Mexican origin would be higher than those of other populations.

A decade ago, Hedderson and Daudistel suggested that low rates of infant mortality among the Spanish-surname population residing in the Southwest could be due to high rates of fetal deaths resulting from a delay in or absence of prenatal care prior to delivery, or to receipt of less adequate medical care in general. Higher fetal mortality rates could also occur in this population because Latina women are less likely to terminate high-risk pregnancies through induced abortion.

Hedderson and Daudistel found that the Spanish surname population in Texas had a lower neonatal mortality rate than Anglos. The sum of fetal and neonatal death rates, however, was 12% higher among Spanish-surname women than among Anglos; thus, the lower neonatal mortality among the Spanish surnamed was more than offset by their higher fetal mortality.⁵⁰

In general, studies of fetal mortality are few, and those attempted have often been plagued by data collection difficulties and poor comparability due to different laws on fetal death reporting among the

states. However, the results of a recent large-sample study conducted in California, where the law mandates reporting of fetal deaths after 20 weeks gestation, do succeed in shedding some light on this issue.

The California study focused on low-income women enrolled in the Comprehensive Perinatal Services Program between 1984 and 1989 and assessed ethnic differentials in fetal mortality at 20 or more weeks gestation. It found that, after the 20-week mark, the fetal death rate per 1,000 live births and fetal deaths was 7.8 for Latinos, 8.4 for non-Latino whites, and 20.5 for non-Latino blacks.⁵¹ These ethnic disparities persisted even after controlling for a host of social and behavioral characteristics, such as maternal age and education, support systems, level of acculturation, tobacco use before and during pregnancy, and use of prenatal care services. One predictor of fetal death after 20 weeks was previous fetal loss, and by self-report this rate was also lower among Latinas. Rates of fetal death under 20 weeks gestation were also examined and reported at 8.9 per 1,000 among Latinas, comparing favorably with rates among non-Latino whites (13.4) and non-Latino blacks (16.7).

It is important to note that this study sampled women who were enrolled in a prenatal care program and were motivated to seek care. Underreporting could occur among women experiencing fetal deaths who never sought prenatal care, those with poor education who may not have recognized an early miscarriage, or among undocumented Latina women who may fear legal repercussions in seeking medical care or advice. Although the study's findings suggest that it is unlikely that excess fetal deaths lead to more positive live birth outcomes in the Latino population, further studies are needed to test this proposition. Future research should focus in particular on women who do not obtain prenatal care, since they might be at higher risk for fetal death.

D. Under-reporting of Infant Deaths

A final hypothesis developed in an attempt to explain the epidemiological paradox posits that infant mortality among Latino infants often goes unreported, skewing statistics so that overall infant health outcomes appear more favorable than what in fact they are. Because of the very low rates of out-of-hospital births to Latinos in California (0.75%),³² and the fact that the majority of neonatal deaths (under 28 days of life) occur before the first hospital discharge, it is presumed that underreporting of neonatal deaths is not a significant phenomenon in this state. Underreporting, if it does occur, is more likely to happen in the postneonatal period. One third of all infant deaths in the U.S. occur in the postneonatal period (between 28-364 days old), when in most cases the infant has been living at home for some time. Since the infant has been discharged after birth as medically stable, the family, environment and other

social factors are presumed to have more influence on postneonatal mortality.⁵²

It is perplexing to note that compared with non-Latino whites, Latinos in California have similar rates of neonatal mortality, but show much lower rates of postneonatal and overall infant mortality.⁵ Mexico's shared border with California, and the high mobility of the migrant population, make these differentials particularly suspect. To evaluate the extent of underreporting of infant deaths in California's Mexican-origin population, a number of sources need to be examined, such as misclassification of ethnicity due to inconsistent definitions and lack of linked birth and infant death files; loss of infant death data due to migration; out-of-hospital births; and either midwife or parental concealment of infant demise.

1. *Misclassification of Ethnicity Due to Inconsistent Definitions and Lack of Linked Birth and Infant Death Files.* Over time, there has been a distinct lack of uniformity in defining the ethnicity of infants. Whereas birth certificates typically classify infants according to the ethnicity of the mother, upon death a child's ethnicity is often determined by that of the father. Failure to match these records makes for inconsistent and otherwise unreliable data.

In 1983, when health authorities began to implement linked birth-death data at a national level, serious flaws were revealed in previous estimates of infant mortality among minorities. Pre-1983 records from several states showed that as many as 30% of Latino children at the time of their death had been misclassified.⁵³ Only in 1989, however, was uniformity established in determining an infant's ethnicity by that of the mother. Reported rates of Mexican-American infant mortality rose with the new standards in place. When a correction factor was applied to the original Mexican-American infant mortality rate, the rate increased from 8.9 to 9.4 per 1000 live births.⁵³ Although the corrected rate was slightly higher than that of non-Latino whites (corrected rate of 8.9 per 1,000), the differential was not sufficiently large to explain the epidemiological paradox.

Similarly, when the City of Chicago began linking birth and death certificates to calculate infant mortality rates, rather than relying strictly on death certificates, a 22% excess in deaths was discovered in the 1992 infant mortality rates among Mexican-Americans. But here again the adjusted mortality rate of 6.7 deaths per 1000 live births was significantly lower than that of the black (19.2), Puerto Rican (10.1) and white (8.0) rates in the city. An ongoing study on infant mortality among Mexican-Americans in four U.S. communities reveals that misclassification is less of a concern in U.S.-Mexico border regions and in small areas with large Latino representation.⁵⁴ Adjustments due to misclassification have not been reported for California. The state does, however, use linked birth-death records to calculate mortality rates.

2. *Loss of Infant Death Data Due to Migration.* Numerous studies have proposed that an infant's death may go unreported when the migrant family or mother returns to Mexico following birth.^{55,56,57} Crossing the border to give birth to a U.S.-born infant is not an uncommon event. In fact, one recent study found that 10.4% of the women living in the Mexican border city of Tijuana, who had given birth between 1982-87, had done so in California.⁵⁸ Women gave birth across the border, by their own report, principally in order to receive adequate medical care and/or to secure U.S. citizenship for their children. The study participants then returned with the child to live in Mexico, and any postneonatal mortality that may have occurred presumably went unreported in California.

No formal link exists between the vital registration systems of Mexico and California. As a result, postneonatal deaths of U.S.-born infants occurring in Mexico would likely not be registered in the state's Vital Statistics system, superficially lowering the rate of such deaths for the Latino population here.

It has been suggested that underregistration of deaths due to migration could be on the rise due to the Mexican government's cutbacks on health services and recently-established policies in the U.S. that make it possible for low-income undocumented women to deliver in public hospitals.⁵⁸ Yet, the extent to which these deaths of U.S. infants take place in Mexico is not known. Without coordination between the respective vital registration systems of California and Mexico, there will be an ongoing risk that U.S.-born infants are dying in Mexico and going unreported in California.

3. *Out-of-hospital births/midwife concealment.* Another explanation for the low reported rates of neonatal deaths among Latinos is linked to their reliance on lay midwife deliveries and out-of-hospital births. For instance, Becerra et al. report that Latinos are more than twice as likely as any other racial or ethnic group to be born outside of a hospital.³¹ Some commentators contend that mid-wives will be less likely than hospital personnel to report neonatal fatalities. Several studies have pointed to underreporting in Texas due to the presence of lay midwives and the high prevalence of out-of hospital births among Latinos.^{56,59} However, California's prohibition of lay midwifery reduces the plausibility of this hypothesis as an explanation of underreporting in our state. Furthermore, as Williams et. at. have reported, fewer than 1% of deliveries to Mexican American women in California occur in a non-clinical setting.³²

4. *Parental Concealment:* Anecdotal reports suggest that Latina women, and undocumented women in particular, might conceal a postneonatal death in order to avoid official sanction and/or the costs of a traditional burial.⁵⁷ This idea has been refuted by researchers who hold that women who have had contact with the health care system for delivery purposes are unlikely to avoid it if their citizen child is ill or has died.⁵⁰ A brief ethnographic study in Santa Ana, California revealed conflicting experiences

among health care professionals working with Latinos. Some providers describe considerable fear of authorities in the community, especially with increasing anti-immigrant sentiment in the state. Such fear might trigger attempts to conceal a death if the parent is undocumented. Other providers, however, say that these fears are minimal, and that laws enabling all low-income citizen children to be covered by Medi-Cal regardless of parental residency status make concealment of illness and death highly unlikely.⁵⁴ The Santa Ana report also notes mobilization of community support and charity efforts to assist families of deceased infants with both practical and emotional support. The presence of such supports would presumably lessen the likelihood of non-reporting.

5. *Other Incentives for Underreporting:* It has been suggested that infant deaths might go unreported because of the value of a birth certificate conferring U.S. citizenship.⁶⁰ There may be a market for such documentation or incentives for a family to keep the certificate despite the child's death as a safeguard against deportation. This source of underreporting has not been empirically studied.

In summary, it does appear that over time a certain amount of underreporting of infant deaths has occurred due to misclassification of ethnicity on death certificates and failure to link birth and death records. Correction for these flaws, however, does not resolve the epidemiological paradox, as perinatal outcomes remain surprisingly favorable among Latinas. Out-of-hospital births are unlikely to be a source of underreporting in California, as they are illegal and therefore quite rare. Other hypotheses relating to parental failure to report an infant death lack empirical evidence to support them. If there is significant underreporting of infant deaths occurring in California, then, the most plausible explanation relates to the mobility of the state's Latino population across the border with Mexico.

In general, current data collection systems must be viewed with caution. The vital statistics recording system, for instance, does not mandate a national standard of uniformity, meaning that data are collected inconsistently from state to state. In considering the likelihood of underreporting, it must be underscored that the California Vital Statistics system only records deaths that occur in the state, risking poor record-keeping at best when it comes to mobile populations such as Mexican border-dwellers. More research on migrant populations will be necessary in order to understand better the possible links among border crossings, fluid residency, and record-keeping on the health status of Latinos in California.

A Closer Look at Underreporting in San Diego County

A recent pilot study conducted in San Diego County attempted to discover some of the factors that might be associated with unreported infant death. Working with a sample consisting of 13 Latina

women who had recently lost an infant, Busch examined questions related to rituals and sites (country) of baptisms, funerals and burials in order to try to get a better sense of infant death practices and ties to Mexico and Mexican culture.⁶¹

Busch worked from the assumption that Mexican immigrants present a higher risk of underreporting given that they have poorer access to care and are more likely to cross the border for infant burials due to fear of the authorities and ties to friends and family in Mexico. While the study elucidates some of the difficulties in obtaining reliable samples and data for drawing conclusions about infant death in this population, it also offers some clues about the attitudes and experiences of the women involved.

Several of the Mexican-born women who had lived in the United States for three years or more considered burying their infant in Mexico. In considering a Mexican burial, the mothers said they thought it would be cheaper, that they wanted the infant to be buried nearby the grandparents, or that the parents had themselves considered returning to live in Mexico. Barriers to a Mexican burial, however, apparently outweighed the benefits for the women interviewed. These barriers, including the unexpectedly high costs and excessive paperwork involved in having a Mexican burial, were reinforced by growing attachments to the United States and a wish to bury the infant closer to a relocated family network.

Among U.S.-born Mexican-American mothers and more than half of the Mexican-born mothers, burying the infant in Mexico was not considered as an option. Many of these mothers felt that all of their family ties were in the United States, and a number had never lived in Mexico themselves. A number of parents shared the feelings expressed by one of the parents: "Here the child was born, here the child will be buried." Beyond this sense of propriety, however, were practical considerations such as proximity to the burial site for the infant's family.

This combination of factors seems to indicate that underreporting is an unlikely explanation for the low rates of Mexican-American infant mortality found in California. Before extrapolating any conclusions from these findings, however, one must note the severe limitations of this study, including the fact that those most at risk for underreporting -- illegal immigrants, the very poor, and drug-addicted mothers most prone to give birth out of hospitals -- were not included in the sample.

III. BEYOND BIRTH OUTCOMES: HEALTH DURING PREGNANCY

A great deal more research is needed to discern the factors that explain the epidemiological paradox of positive birth outcomes in the at-risk Latina population. A related issue is whether Latino children born at low risk retain their health advantage during infancy in the face of socio-economic

disadvantages. An effort to respond to this question entails looking at which household and environmental characteristics protect children against disease or put them at risk for adverse health outcomes.

Limited information indicates that infectious diseases, including pneumonia and tuberculosis, may be more prevalent among Latino children than in other groups. Ear infections and poor immunization rates also appear to be more common in Latino children than in other groups.^{62,63,64,65} In general, poor children are more likely than their affluent counterparts to become ill and have more serious illnesses.⁶⁶

Guendelman, English and Chavez recently completed a San Diego household survey, assessing 708 surviving infants of Mexican immigrant parents in order to determine whether health advantages at birth are sustained at 8-16 months of age, despite adverse socioeconomic conditions. The study documented the health status of the infants as well as the use of resources among immigrants, such as medical care, social supports, and health insurance, and explored how resource utilization affects children's health.

The results showed that 74% of the infants who were born without serious medical problems remained healthy, as indicated by the absence of serious infectious diseases, hospitalization for infectious diseases or prolonged infectious symptoms since birth. However, the remaining 26% of infants born without serious medical problems suffered health erosion due to social conditions. The prevalence of illness among low-income Latino infants in San Diego County was found to be on a par with that of non-Latino infants in other disadvantaged communities, such as central Harlem.^{67,68} These high rates of illness existed despite availability of public health insurance coverage and high use of well-baby care.⁶⁹

Recent studies also show a high prevalence of morbidity among California's Latino children due to environmental toxins such as lead.⁷⁰ Future studies that examine the household and environmental toxic substances to which Mexican-American children are exposed will help to assess infant health at birth and beyond.

IV. CONCLUSIONS AND POLICY IMPLICATIONS

Protecting the health of Mexican-American women and children is essential in California. The specific characteristics of Mexican-American women of reproductive age -- high fertility rates, low rates of prenatal care and deteriorating pregnancy outcomes with increasing acculturation -- require targeted health care interventions and a comprehensive strategy for meeting the needs of this rapidly growing population.

This paper has described the paradox of positive pregnancy outcomes among Mexican-Americans despite the presence of a number of risk factors traditionally associated with poor outcomes in other ethnic groups. These risk factors include the widespread prevalence of poverty, low maternal and paternal education, and poor access to health care.

Many researchers have noted this epidemiological paradox, but they have not undertaken a comparative examination of the hypotheses put forth to explain it. This paper has examined four such hypotheses and identified the various factors, i.e. socio-cultural, socio-economic, behavioral, medical and reporting, that are associated with the favorable rates of infant mortality and low birthweight in this population.

Selection factors may help to explain the favorable pregnancy outcomes of immigrant women born in Mexico. Psychological, biological, economic and cultural factors may operate in both the decision to migrate and the capacity to do so. A number of studies note a health bias among migrant populations that would imply a direct effect on birth outcomes among first generation immigrants to this country. However, many studies of migrant self-selection have focused on men. According to some studies, gender roles and expectations appear to distinguish the experience of female migrants from that of males by affecting the balance of economic and social incentives to move to the United States.

Mexican immigrants also bring with them sociocultural practices such as healthy dietary practices and abstinence or low levels of alcohol, tobacco and illicit drug use, which are all associated with good birth outcomes. The strong family networks and other social supports present in the Mexican-American community also appear to affect birth outcomes positively. These various factors may help to explain why low income Mexican-origin women have rates of fetal death that are lower than black or white non-Latina women of comparable socioeconomic status.

Yet, birth outcomes deteriorate with increasing acculturation. Fetal deaths, postneonatal mortality, infant mortality and low birthweight rates increase with more acculturation. These negative outcomes might be explained by the loss of protective sociocultural practices and an increase in risk factors in the second generation and beyond. When compared with Mexican-born women, U.S.-born women of Mexican descent show increased levels of tobacco, alcohol and illicit drug use and a deterioration in nutritional habits.

While protective socio-cultural factors seem to play an important role in explaining the favorable birth outcomes among immigrant women, the possibility that infant deaths go unreported in the Mexican-American population must also be considered. *Ethnic misclassification on birth and death certificates* appears to have affected vital statistics records in the past, but recent corrections to the recording system

decrease the likelihood of this type of error. The most plausible source of underreporting relates to the mobility of California's Latino population across the border with Mexico. As vital statistics are not shared across the border, significant gaps could exist in the databanks on either side. Underreporting and misclassification of ethnicity in the death certificate may artificially lower the rates of fetal, neonatal and postneonatal mortality, particularly in infants of Mexican-born mothers.

Understanding these issues will aid Latina women, policy makers and health care providers in a number of ways. First, the evidence in support of the role of protective socio-cultural factors in birth outcomes may help to guide maternal and child health programs and interventions such as WIC and the Comprehensive Perinatal Services Program in supporting the "more traditional," positive health practices of Mexican immigrant women so that they might be sustained and even passed on to future generations.

Second, despite the positive birth outcomes of Mexican immigrants, attention must be drawn to the fact that the health advantages at birth may not be sustained over the first year of life. Emerging information from San Diego County suggests that low income Latino infants born in good health stand a high risk of morbidity as they approach the end of the first year of life and beginning of the second year of life, despite good health care through Medi-Cal coverage. Preventive health efforts targeting low income immigrant populations -- particularly with respect to housing and environmental factors -- are needed if we are to safeguard the health of this population.

Third, low rates of infant mortality can actually pose a risk for the Mexican-American community. Traditionally low and decreasing rates signify the success of existing health programs and provide strong impetus for budgetary cutbacks and a reduction in resource allocation. In contrast, high and increasing infant mortality rates are used to indicate a need for improved environmental conditions and for proper health services such as sanitation, nutritional programs and medical care. In allocating resources for the Mexican-American population in California, policy makers must take heed of the possible deterioration of health during infancy as well as the deterioration of health with increasing acculturation. Reduction of morbidity and not solely mortality must be our goal for improving maternal and child health.



MEMORANDUM

TO : SAC, NEW YORK

FROM : SAC, NEW YORK

SUBJECT: [Illegible]

DATE: [Illegible]

RE: [Illegible]

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