Racial and Ethnic Health Disparities in Los Angeles: The Role of Immigration Status and Neighborhoods

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1 Introduction

It is well understood that there are large disparities in health status, health care utilization, and health insurance coverage by race and ethnicity, income, education, and wealth, yet the determinants of these disparities are less well-understood. Eradicating these disparities is a key goal of government.

In this paper, we examine the determinants of health insurance coverage, health care use and access to a usual source of care, and health status. Using the Los Angeles Family and Neighborhood Study, we analyze outcomes for children and adults in Los Angeles County. We look at differences by race and ethnicity while controlling for other key determinants of health outcomes. We pay particular attention to differences in coverage, utilization, and health status by nativity (born in the U.S. or elsewhere), citizenship (naturalized or U.S.-born) and immigration status (among non-citizens, documented or undocumented). The ability to differentiate the undocumented from the documented is relatively novel.

We find extensive differences in insurance coverage between Hispanics and other groups. However, most of these differences are explained by differences in immigration status. Controlling for immigration status makes the Hispanic-white differences disappear for adults and shrink considerably for children. The undocumented and their children (particularly their non-citizen children) are by far the most likely to lack insurance. Even after controlling for education and other characteristics, we find that Hispanic adults are less likely to have a usual source of care and less likely to have seen a dentist during the last year than whites, and the gap in dental visits persists after controlling for immigration status. Differences in use of preventive care for children are much smaller. We also find that some other average characteristics of people's Census tracts are associated with utilization patterns, but that presence of health facilities is not. We find that use of hospitals and emergency rooms does not vary much by race and ethnicity once we have controlled for education.

We examine the prevalence of various chronic conditions and levels of self-rated health for adults and parent-rated health for children. There are substantial racial and ethnic differences in asthma prevalence for children and adults and in parent-rated general health for children. Once we control for parent's immigration status, Hispanic children are actually more likely to have asthma than white children, as are black children in a number of the controlled comparisons. There are few differences in prevalence for adults. Parents of black and Hispanic children are also less likely than parents of white children to report their children are in excellent or very good health.

2 Data

We use LAFANS to study the health outcomes of residents of Los Angeles County. The LAFANS data we use is from the first wave of what is planned as a panel study of people within neighborhoods in Los Angeles County. The first wave collected information on representative adults and children within 65 1990 Census tracts in Los Angeles County. Poor neighborhoods were oversampled. Within each neighborhood, people from around 40 households were interviewed.

For each household, interviewers constructed a roster of persons living there. The respondent was asked about age, gender, marital status, parent identification, ethnicity, education, welfare use, and language used at home. A knowledgeable adult was asked about various sources of household income, housing net worth and possession of other assets, and participation in public assistance programs. For a randomly selected adult from each household, information was collected about education, employment, income, migration and immigration, marital history, children ever born, health status, health care utilization, family background, and welfare use. Interviewers also collected an event history for each of the adults interviewed, tracking landmark events for the previous two years as well as residences, employment, unemployment, public assistance use, and health insurance coverage (for the adult and for children).

If the household contained children under 18, one of the children was selected to be interviewed (the randomly selected child). If there were siblings of the randomly selected child, they were also interviewed. The primary caregiver for the randomly selected child was also interviewed about the child's living arrangements, residential history, place of birth and immigration status, schooling, child care, education, child support, and health. Computer assisted personal interview modules were administered in person. Only the relevant person for each interview was asked about the relevant topic. Interviews were completed during 2000–2001.

County, using the 2000 Census.

Advantages of using LAFANS for our analysis are several. First, it has extensive health status information combined with information on documentation status (including whether respondents have valid visas or are undocumented), detailed assets and income data (collected with unfolding brackets), and migration history. Second, it has a clustered design, which ensures that many individuals share the same access to local neighborhood facilities, and there are restricted use versions of the LAFANS data with extremely detailed geographic data on where people live, work, go to school, and receive care when sick. We use the geographic data to link people with characteristics of their neighborhoods, as

discussed below. The disadvantages of using LAFANS for this study are as follows. LAFANS interviews were only conducted in Spanish and English. Persons who could not speak Spanish or English were considered out of scope. Thus the data may not be representative of persons not speaking English or Spanish (e.g., some Asians).

Our health outcomes cover three broad areas: Health insurance coverage, health care utilization, and health status. Our health insurance coverage variables are constructed from a retrospective event history calendar completed by adults (by the primary caregiver for children). This event history calendar covers the previous two years and asks about landmark events (to anchor time recollection); spells of employment, unemployment, layoffs, and times when the respondent was not in the labor force; location of work; salary and occupation; usual hours; residential moves; and health insurance coverage (as well as reason for not having coverage), starting from the most recent spell. Parents were asked separately about their own and children's insurance coverage. From these measures, we calculate both current measures and measures of having had any coverage of a particular type over the two years preceding the interview.

We have aggregated these coverage measures to four each for current coverage and coverage over the previous two years: Having no coverage, having private coverage (including employer provided and privately purchased, and Champus, TriCare, or other military health insurance), public insurance (including Medi-Cal, Medicare, Healthy Families, and other government provided insurance), and any Medi-Cal (including Medi-Cal only and joint Medi-Cal and Medicare).[1] We examine current health insurance because it measures coverage at the time of the survey. However, we supplement this by looking at coverage over the last two years.

Our health care utilization measures encompass two main types, 1) use of preventive care/having a usual source of care, and 2) utilization over the last year. Measures of use of preventive care include having seen a dentist in the last year (for adults and children), and having had a checkup in the last year for children. We also have a measure of whether the person has a regular source of care. The other outcomes we examine are utilization measures which are less likely to be preventive care than the measures we discuss above. For adults, we examine whether they had an overnight hospital stay in the previous year and whether they saw a doctor during the previous year. For children, we examine whether they visited an emergency room (whether or not they were admitted) during the previous year and whether they saw a doctor during the last year.

[1]Most studies include military health insurance as public insurance, however, we are interested in public programs related to poverty status, and thus include military health insurance as employer provided.

Our measures of health status include whether the adult or child has one of a number of chronic conditions, for children, whether they have had an asthma attack during the last year, and measures of self-rated general health. The chronic conditions we look at for adults are all ones that are long term and difficult to manage, and include doctor-diagnosed diabetes, coronary heart disease, and asthma. Asthma is the only child chronic condition we examine. We also have a measure of whether children's asthma is being well-managed, whether they have had an asthma attack during the previous year. Our general health measures include self-rated general health being excellent or very good (for adults) or parent-rated child general health being excellent or very good (for children). Self-rated general health being poor is highly correlated with subsequent mortality for adults (Idler and Benyamini, 1997). The advantage of these general health outcomes is that they are not dependent on having seen a doctor in order to receive a diagnosis or a condition. The disadvantage is that it is well understood that for unacculturated Hispanic adults, having poor self-rated general health is less strongly associated with mortality than it is for other adults (Finch et al., 2002).

We use several sources to obtain data about neighborhoods, which we link to our LAFANS data. First, we use 2000 Decennial Census data from the Summary File 3. These data are at the Census tract level, and include information on each tract's racial/ethnic composition, share of persons foreign-born by citizenship status, completed education for persons over 25, other languages spoken for persons 18–64, percent of persons 16–64 who have a sensory impairment or long-lasting condition limiting physical activity, the male and female unemployment rates, average commute times, median family income, and the share of persons under the poverty level or receiving public assistance. We converted this data to data for 1990 tracts by allocating 2000 tract values proportionately to the share of the 2000 population in each area where a 1990 and 2000 tract intersected, and then summing these numbers within each 1990 tract. We merged these data to our micro data for Los Angeles County by 1990 tract.

Our second source of information on neighborhood characteristics is ZIP Code Business Patterns data (ZBP) for 2000. The Census Bureau, in the ZIP Code Business Patterns data, produces counts of (mostly private) establishments by employment size class and North American Industry Classification System codes. We have ZBP data on hospitals, doctors and dentists offices, other clinics and ambulatory care, private human services agencies, churchs, and other types of establishments. As with the Census data, once we had the ZBP data at the 2000 Census tract level, we had to allocate the data to 1990 tracts. As above, this was done by allocating 2000 tract values proportionately to the share of the 2000 population in each area where a 1990 and 2000 tract intersected, and then summing these numbers within each 1990 tract. We merged these data to our micro data for Los Angeles County by 1990 tract.

The third source of data on neighborhood characteristics is the Office of Statewide Health Planning and Development's (OSHPD) annual utilization and financial reports for hospitals and primary care clinics. Section 127285 of the California Health and Safety Code requires every non-federally owned licensed hospital to file with OSHPD an annual utilization report for the calendar year. (Thus, in practice Veteran's Administration and other military hospitals are the ones excluded.) Hospitals that are taken over or reopened after closing may file more than one report. This administrative data has been filed electronically since 2002. We have aggregated these reports for specific hospitals and clinics by ZIP Code. For general acute care hospitals and for all hospitals, we constructed the licensed bed-weighted number of nonprofit, for-profit, government-owned, and overall hospitals; the share of births that were low birth weight; the ratio of total census on December 31 to total beds; the number of emergency medical treatment stations (a specific place in the emergency room to treat a single patient), total emergency room visits resulting in admissions, and the ratio of emergency room visits that were urgent or critical to the total number of emergency room visits. For clinics, we have counts of Federal Qualified Health Center and Federal Qualified Health Center Look-Alike clinics. Again, once the data were at the 2000 Census tract level, they were allocated to 1990 tracts as above, and merged to the LAFANS data.

3 Methods

We present simple differences across race and ethnicity, and across immigration status for Hispanics and non-Hispanics, adjusting only for age and gender, for children and adults. We then control for various factors besides race and ethnicity including completed education, immigration status, family income, housing wealth, total assets, and a host of the neighborhood characteristics discussed above. We see what share of existing gaps is shrunk by these other controls, and see which controls explain our outcomes.

3.1 Mean differences

We first present differences across race and ethnicity, and separately by Hispanic ethnicity across immigration status (U.S.-born, foreign-born naturalized citizen, documented, and undocumented).[2] These comparisons by race and ethnicity and immigration status and Hispanic origin are calculated using probit regressions (to ensure that relevant probabilities are contained within [0, 1]). These probit

[2]We separate by Hispanic ethnicity because almost no sample members are non-Hispanic and undocumented.

regressions also control for age and gender. The means presented are then the probabilities averaged over the relevant sample, with age and gender evaluated at the observation's own values and all the race (or immigration status and Hispanic origin) variables set to zero but the one being examined. Statistical significance relative to whites (for the race and ethnicity comparisons) or U.S.-born non-Hispanic adult or non-Hispanic child with U.S.-born parent (for the immigration status and Hispanic origin comparisons) are assessed by calculating the marginal effect of being in the relevant group relative to the baseline of white or U.S.-born non-Hispanic for all observations (having set the other race/ethnicity or immigration status variables to be 0), and then determining significance using the delta method.

Mean comparisons by race and ethnicity show values for non-Hispanic whites, Hispanics of any race, non-Hispanic blacks, and non-Hispanic Asians. The means for the category other race or race/ethnicity unknown is not shown in the main text but it was included in all comparisons (it consisted of 42 adults and 23 children). Mean comparisons by immigration status for adults show values for U.S.-born non-Hispanics, naturalized non-Hispanics, documented non-Hispanics, U.S.-born Hispanics, naturalized Hispanics, documented Hispanics, and undocumented Hispanics. Statistics for the categories undocumented non-Hispanic or race/ethnicity unknown, documentation unknown and non-Hispanic or Hispanic ethnicity unknown, and documentation unknown and Hispanic are not presented in the main text (3 percent of adults did not report immigration status). Similarly, categories for parent undocumented or of unknown immigration status and the child being non-Hispanic, or unknown immigration status and the child being Hispanic are also included in these comparisons but not reported in the text (3–5 percent of children, depending on race/ethnicity) did not report immigration status.

3.2 Regression-adjusted comparisons

Regression adjusted comparisons of the probabilities of outcomes for Hispanics, blacks, and Asians (relative to whites) after controlling for various factors are presented for coefficients from ordinary least squares models. Most regressions were estimated as linear probability models as the range of most outcomes was far from 0 or 1. The robustness of conclusions regarding outcomes that had extreme values was examined by estimating probit regressions. Educational attainment was controlled for in some specifications by including dummy variables for the respondent (in regressions involving adults) or the primary caregiver (in regressions involving children) being a high school dropout, having some college but no four-year degree, having at least a four-year college degree, and education being unknown. Respondents were asked about their education completed in the U.S., and separately about education

completed abroad if they did not complete any in the U.S. Income and assets data in LAFANS were very comprehensive. Respondents from each family (sometimes more than one) were asked about a long list of types of income including own, spouse, and minor child wages or salary income; income from TANF or other public assistance; Food Stamps; child support; SSI; Social Security; Low Income Heating and Energy Assistance or housing assistance; worker's compensation; unemployment compensation; the veteran's administration; foster care payments; alimony; or pension or trusts. Data on non-housing net worth was collected as well as asset income for the last year for a wide range of assets including real-estate holdings, own businesses or farms, retirement savings, stocks and mutual funds (and dividend income), savings and checking accounts, money market accounts (and interest payments), the value of vehicles, and an other asset category. Net worth and asset income were collected with unfolding brackets as in the Health and Retirement study. Estimated housing value was also collected but only in the ranges reported in the 2000 Census. Missing income, net worth, and housing data were fully imputed using the methodology used in the Health and Retirement study. We use these imputed values. Estimates that control for family income include the natural log of 1 plus total family income, and controls for there being family income of 0, a dummy for any component of family income being imputed, and a dummy for the family not having completed the income and asset module of the questionnaire. Estimates that control for non-housing net worth include controls for the natural log of 1 plus total non-housing net worth, a dummy for net worth being 0, a dummy for assets having been imputed. Estimates that control for housing value include a control for being a renter, for housing being any of the bottom three quantiles, for housing value having been imputed or housing ownership having been imputed, and for the family not having completed the income and asset module of the questionnaire.

4 Preliminary results

We discuss our preliminary results for health insurance coverage, health care utilization, and having a regular source of care.

4.1 Health insurance coverage

We first look at health insurance coverage for adults and children in Los Angeles County. Public health insurance and Medi-Cal in particular are a large and growing share of the state budget (e.g., MaCurdy et al., 2005), suggesting that understanding who has public insurance is important. Such

concerns may be particularly important in an era of increasing employee health insurance premiums which have led to decreases in the share privately insured and increases in the share without insurance (Chernew, Cutler, and Keenan, forthcoming), and which may cause increased pressures for expanding public programs. However, an independent rationale for examining health insurance coverage comes from research linking health insurance coverage to health status.

There are large differences in health insurance coverage by source, whether we look by race and ethnicity, or by immigration status, finding large disparities. We then examine factors which mitigate these large disparities, finding that immigration status is of particular importance. We find other factors such as education and family income also known to influence differences are important. Compared to persons within their own neighborhood, Hispanics are still more likely than whites to lack insurance, and blacks are actually more likely to have insurance than whites. Findings for current coverage are similar to those for any coverage of a particular type over the last two years.

We have explored a large number of comparisons controlling for various subsets of neighborhood characteristics from the sources above. Generally, these comparisons have little impact on the estimated racial and ethnic gradients. We can offer one hypothesis for these findings, but cannot rule it out with our data. A number of our neighborhood controls are measures of types of establishments or health facilities. The only natural link between their presence and having a particular type of insurance coverage is that with having public coverage. However, in Los Angeles County, enrollment for Medi-Cal is permitted at Medi-Cal offices, schools, clinics, and a wide variety of other sites which are likely present in nearly every tract.

4.2 Health care utilization and having a usual source of care

Concerns about health insurance coverage are tied to the belief that having coverage leads to more use of preventive care and screening and ultimately to better health status. Similarly, concerns about access to care and adequacy of utilization stem from the belief that access to care and increased health care utilization lead to better health. Having a regular source of care or sustained continuity of care has been linked to fewer hospitalizations and fewer visits to the emergency room and more use of preventive care (Cabana, and Jee, 2004; Sox et al., 1998; Petersen et al., 1998; Gill, Mainous, and Nsereko, 2000). Ettner (1996) presents evidence that having a usual source of care leads to more use of preventive services, after accounting for possible selection in who has a usual source of care. Starfield and Shi (2004) summarize evidence that having a usual source of care, longitudinal care, comprehensive care, and coordination of care lead to fewer health disparities.

Use of regular preventive care is one of the Healthy People 2010 objectives. Appropriate use of preventive care is associated with prevention or detection of disease at early stages. As a result, there are guidelines for how often adults and children ought to receive periodic examinations. In our LAFANS data, we have several measures of access and use of preventive care. For adults, we know whether they have a regular source of care (a place to go when they are ill or need medical advice) and whether they saw a dentist during the last year. For children, we have these two measures as well as whether they received a checkup or had a well-child care visit during the last year (as recommended by the American Academy of Pediatrics). We also examine whether adults or children went to a doctor for any reason during the last year. This could be lower for some groups because they lack access or it could be lower because they are in better health than other groups.

A growing concern in a time of rapidly rising medical costs (particularly costs born by the state) is unnecessary use of certain types of care. For example, preventable hospitalizations would fall in this category. Much discussion in the press concerns perceptions that certain groups are overusing resources such as emergency rooms. While we cannot measure unnecessary hospitalizations, we can look at whether adults stayed overnight in the hospital during the last two years and whether children visited the emergency room during the last year. These measures may well be higher for groups that are in worse health, or they may be higher because of use of hospitals for primary care.

After controlling for various factors, we see large utilization differences in use of preventive care for adults and children. First we see that, as with insurance coverage, adjusting for completed education reduces the gaps between whites and everyone else considerably. For example, when we just adjust for age and gender, Hispanic adults are 25% less likely to have seen a dentist during the last year, while after we adjust for education, they are only 9% less likely to have seen a dentist during the last year. Adjusting for immigration shrinks the gap in having seen a dentist last year to 7% for Hispanics. Finally, we note that controlling for average neighborhood characteristics from the Census, ZIP Code Business Patterns, and OSHPD also makes the gap for Hispanics go away, despite the fact that no particular neighborhood characteristics drive this finding. However, just controlling for health facilities (whether from ZIP Code Business Patterns or OSHPD), while shrinking the gap from 9% to 5–7%, does not eradicate the gap. Controlling for the Census characteristics alone does make the gap go away (it shrinks to an insignificant 0.4–1.3%, depending on which Census characteristics are controlled for).

A similar pattern holds for adults for explaining racial and ethnic gaps in having seen a doctor during the last year and having a usual source of care. Controlling for education shrinks the gap, and adding controls for immigration status, family income, or Census neighborhood characteristics makes

the gap small and statistically insignificant for these two outcomes. As in other research, we find that less education, lower family income, and being a renter or having fewer assets are all negatively associated with having seen a doctor or dentist during the last year, and with having a usual source of care.

There are no significant differences in the probability of having stayed overnight in the hospital during the last two years (for adults) by race and ethnicity, controlling for education, and also controlling for immigration status, family income or assets, or various neighborhood characteristics. Persons who are foreign born and naturalized or documented persons are 7–9% less likely to have stayed overnight in a hospital than the U.S.-born. For children, controlling for various characteristics leaves the racial and ethnic gaps more or less the same as in the means. For children, while there are few racial or ethnic gaps after controlling for parental education, dental care seems to be particularly sensitive to income. For children, having a parent who is naturalized makes one less likely to have visited an emergency room last year, controlling for parental education, relative to other children of the U.S.-born. Children with parents of other immigration groups are about as likely to have used the emergency room as children of the U.S.-born.

4.3 Why doesn't the supply of medical providers affect utilization?

One may wonder why our direct measures of provider supply such as the number of doctor's or dentist's offices in one's Census tract are not tied to having seen a doctor, having seen a dentist, or having gotten a check up during the last year. One hypothesis is that our measures of neighborhoods are not large enough in area to capture the extent to which proximity affects utilization. To further explore this, we take advantage of the fact that for persons with a usual source of care, we know the Census tract of this source for most of the sample (some people gave insufficient address information to permit coding the Census tract of their source of care). Of the 75% of adults with a place to go when sick, about 83% gave detailed enough address information for us to determine whether the usual source of care is within their home Census tract. Only 5% of adults with a usual source of care and with sufficient geographic information go to a provider within their Census tract. We also know what tract most people work in, if they work. Of the 75% of adults with a usual source of care, 41% were working and provided enough address information for both their place of work and their usual source of care to tell whether their usual source of care was in the same tract where they worked. Only 3% of adults who had a usual source of care and provided enough geographic information for both the source and their place of work go to a provider within the tract they worked in. We can perform a similar exercise for children,

looking at whether their usual source of care is in their home or school census tract. For children with a usual source of care and the relevant geographic information, only 10% go to a provider within the tract they live in, and only 8% go to a provider within the tract where their school is located. (The school comparison is only for school aged children.) Taken together with the fact that for persons with insurance, whether a provider accepts one's insurance is an important determinant of what doctor one sees, this suggests that our findings are not so surprising.

5 Health status

Here we look at whether the differences we observe across ethnicity, immigration status, and socioeconomic status also appear in health status. Given the extensive findings about racial and ethnic disparities in health status, we expect to find such differences. However, it is an open question how much of these gaps may be explained by immigration status.

Our health outcomes of interest include doctor-diagnosed chronic conditions such as hypertension or high blood pressure, diabetes, coronary heart disease, and asthma for adults; and asthma for children. Hypertension, diabetes, and asthma are all conditions that are considered to be sensitive to receipt of ambulatory care. For these, effective management can help prevent flare-ups that result in hospital admission. In fact, the Agency for Health Care Quality (2005) includes benchmarks for hospitalizations for these conditions (among others) as Prevention Quality Indicators, which are used to assess primary care access or outpatient services for a community by using hospital discharge data. For children, we also know whether they have been diagnosed with anemia. Finally, we have one measure of whether chronic conditions are being well managed. For children, we know whether they have had an asthma attack during the last year. One disadvantage with looking at conditions that are diagnosed by physicians is that persons who obtain less frequent care may be less likely to have been diagnosed with a specific condition. Our other health status measure is self-rated (for adults) or parent-rated (for children) general health being excellent or very good. This measure is not dependent on whether you have seen a doctor.

5.1 Challenges in explaining health differences

Most of our health status measures are conditions potentially shaped by a lifetime of experiences and health-related behaviors. Thus, health today is a function of current and past use of medical care, health behavior, and one's ability to adhere to treatments, which may itself be tied to education. This

suggests a possible challenge in interpreting health disparities as being caused by characteristics such as low income or low wealth rather than causing them (Smith, 1999; Smith and Kington, 1997). It also suggests that health from long ago may influence health now.

5.1.1 The Hispanic paradox and immigrant selection

It is also relevant to mention the Hispanic paradox (also known as the Epidemiological paradox). This is generally defined as the fact Hispanics have better health outcomes than non-Hispanic whites and others, or at times than non-Hispanic blacks, despite being of low socioeconomic status. The health outcomes in question range from infant and child mortality to adult mortality to adult health status. This so-called paradox is tied to the general issue of how immigrants' health might differ from that of natives (see Jasso et al., 2002, for a detailed discussion of health selection for immigrants). By definition, immigrants have left their country of birth, trading one environment and set of risks for another. Immigrants may be positively selected in that only relatively healthy individuals reach a new country. The degree of selectivity may vary with age, as there is substantial emigration back to their country of origin, particularly for the Mexican born. Both of these factors could contribute to the paradox, particularly if the most unhealthy return to their home countries. The other key difference between some Hispanic immigrants and natives is that many Hispanic immigrants retain the culture and norms of their country of origin. Some posit that immigrants retaining healthier behaviors from home explain why first generation outcomes are better than those for U.S. natives. Then, the gradually worsening outcomes over generations are because more acculturation leads to adopting "bad" native behaviors. The third unique thing about immigrants is that they have immigrated, and this act is viewed as stressful with possibly negative health impacts. At the same time, immigration is often associated with much higher income in the new country, and we know that often income is positively associated with health. All of these issues make interpreting our findings about possible differences in health status more challenging.

5.2 Findings

There are substantial racial and ethnic differences in asthma prevalence and parent-rated general health. Once immigration status is controlled for, Hispanic children are actually more likely to have asthma than white children, as are black children in a number of the controlled comparisons. There are few differences for adults. While few factors impacted racial and ethnic differences in chronic conditions or general self-rated health, a number of variables themselves were associated with these conditions. There

is a strong educational gradient in both hypertension and self-rated general health. Naturalized adults are considerably less likely to have hypertension than the U.S. born, and both the documented and undocumented are less likely to have asthma than the U.S. born. There is a strong income gradient for diabetes and self-rated general health; the higher one's family income, the less likely to have diabetes, and the better self-reported health. More assets also lead to better self-rated health. Again, we find little consistent impact of our neighborhood characteristics on adult health. This is consistent with the findings of Sastry and Pebley (forthcoming, 2003) that neighborhoods have little impact on child or adult health status, once other characteristics are controlled for. The relationship between controls and child health is somewhat different. Children with more educated parents are actually more likely to report their children have asthma, while anemia is more common for children of less educated parents and for families with fewer assets. Asthma is also less common for children of foreign-born parents, as is having had an asthma attack during the last year.