



Child health in the United States: Recent trends in racial/ethnic disparities



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ABSTRACT

In the United States, race and ethnicity are considered key social determinants of health because of their enduring association with social and economic opportunities and resources. An important policy and research concern is whether the U.S. is making progress toward reducing racial/ethnic inequalities in health. While race/ethnic disparities in infant and adult outcomes are well documented, less is known about patterns and trends by race/ethnicity among children. Our objective was to determine the patterns of and progress toward reducing racial/ethnic disparities in child health. Using nationally representative data from 1998 to 2009, we assessed 17 indicators of child health, including overall health status, disability, measures of specific illnesses, and indicators of the social and economic consequences of illnesses. We examined disparities across five race/ethnic groups (non-Hispanic white, non-Hispanic black, Hispanic, non-Hispanic Asian, and non-Hispanic other). We found important racial/ethnic disparities across nearly all of the indicators of health we examined, adjusting for socioeconomic status, nativity, and access to health care. Importantly, we found little evidence that racial/ethnic disparities in child health have changed over time. In fact, for certain illnesses such as asthma, black–white disparities grew significantly larger over time. In general, black children had the highest reported prevalence across the health indicators and Asian children had the lowest reported prevalence. Hispanic children tended to be more similar to whites compared to the other race/ethnic groups, but there was considerable variability in their relative standing.

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Introduction

Nowhere is the changing race and ethnic profile of the U.S. more evident than among children. While approximately 80% of U.S. adults over age 65 are non-Hispanic white, only 55% of individuals under age 18 fall into this category (U.S. Census Bureau 2010; Author calculations). These young cohorts of today indicate what the racial/ethnic demographic makeup of the U.S. adult population will be in the future. Some projections suggest that the U.S. will become a “majority minority” population by 2050 (i.e., non-Hispanic whites will comprise less than half of the U.S. population) (Ortman & Guarneri, 2009). These demographic trends have brought renewed policy and research attention to racial/ethnic minorities and their social and economic wellbeing, including understanding racial/ethnic differences in population health (Dentzer, 2011).

In the U.S., race is considered a key social determinant of health because of its long-standing association with poverty, discrimination, residential segregation, and unequal access to health care (Link & Phelan, 1995; Williams & Jackson, 2005). Numerous studies indicate that race/ethnicity is also an important social category that has strong associations with many health outcomes, even after adjusting for traditional measures of socioeconomic status (SES) such as education and income. These findings are believed to highlight differences in a complex set of social, economic, and biological assets available to different race/ethnic groups (Link & Phelan, 1995; Williams & Jackson, 2005; Williams, Mohammed, Leavell, & Collins, 2010) that are often unable to be fully accounted for or inadequately measured in empirical work (Krieger, Williams, & Moss, 1997; Krieger, Chen, Waterman, Rehkopf, & Subramanian, 2005; LaVeist, 2005). Indeed, from a social determinants of health perspective, race/ethnicity can be considered a “fundamental cause” of disease in the U.S. due to both historical (e.g., slavery and Jim Crow) and current (e.g., redlining and employment discrimination) forms of institutionalized discrimination. Race/ethnicity determines access to crucial resources, such

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as knowledge, money, prestige, power, as well as interpersonal resources, which assist people in avoiding diseases and their negative consequences.

Although accurate population-wide health data on racial/ethnic groups have only been available since the mid-20th century, racial/ethnic differences in health have become one of the most widely studied topics in U.S. health disparities research (Jones, LaVeist, & Lillie-Blanton, 1991; Williams, 1994). On differences between non-Hispanic blacks and whites, but there has been increasing attention given to Hispanics and Asian-origin populations, groups that have both grown rapidly as a result of changes in U.S. immigration policy in the mid-1960s.

An important policy concern is whether the U.S. is making progress toward reducing racial/ethnic inequalities in health (Agency for Healthcare Research and Quality, 2011; U.S. Department of Health and Human Services, 2010). However, with the exception of infant outcomes, the majority of the research examining U.S. racial/ethnic health differentials has focused on adults. Changes over time in race/ethnic differences among adults have been well characterized. For example, the black–white gap in life expectancy at age 50 has been relatively stable for males and declined steadily for females since the mid-1990s, although large disparities persist for both sexes. A number of recent studies have also examined trends in adult inequalities with respect to disability, major adult chronic diseases, and their risk factors (e.g., Burt et al., 1995; Crimmins & Saito, 2001; Egan, Zhao, & Axon, 2010; Lee, Brancati, & Yeh, 2011; Moss & Mannino, 2002; Williams & Collins, 1995).

Similarly, changes over time in infant mortality have also been well characterized, at least between blacks and whites. Throughout most of the twentieth century, the black–white ratio of the infant mortality rate (IMR) has increased (although the absolute black–white difference has declined over much of this period) (Singh & van Dyck, 2010). In 2000, the IMR among black infants was more than 2.5 times that of white infants, a relative disparity which decreased only slightly between 2000 and 2007 (Singh & van Dyck, 2010). In contrast, we know comparatively less about changes over time in race/ethnic inequalities in child health. With respect to race/ethnic differences, perhaps the best studied child health indicator is asthma (e.g., Akinbami, Moorman, Garbe, & Sondik, 2009; Akinbami & Schoendorf, 2002). One nationally representative study indicated that black–white differences in asthma prevalence increased between 1997 and 2003 (in that blacks were increasingly more likely to have asthma compared to whites) (McDaniel, Paxson, & Waldfogel, 2006). More recent changes in the black–white disparity have not been assessed to our knowledge. In addition, recent nationally representative evidence suggests that increases in the prevalence of autism have been more pronounced in whites compared to blacks and Hispanics between 1997 and 2008 (Boyle et al., 2011). A recent technical report by the American Academy of Pediatrics (AAP), which reviewed the existing evidence on race/ethnic disparities, concluded that “[r]acial/ethnic disparities in child health and health care are extensive, pervasive, and persistent, and occur across the spectrum of health and health care” (Flores & Committee On Pediatric Research, 2010; Flores & Tomany-Korman, 2008). The AAP report also indicated that few studies have examined trends in child health disparities.

Our objective is to examine whether racial/ethnic differences in child health have been widening or narrowing over time. We focus on the recent 1998–2009 period and compare trends occurring across multiple indicators of child health. This comparative perspective enables researchers to understand how the overall health of children is changing over time and whether there are variations in race/ethnic disparities across different dimensions of child health. In addition, this approach allows for the differentiation between improvements in child population health overall

versus improvements in reducing racial/ethnic disparities in child health, both important but distinct national health policy goals (Koh, Graham, & Glied, 2011; National Research Council, 2004; U.S. Department of Health and Human Services, 2010). We utilize large-scale nationally representative data and include Asian-origin children, a group that has been traditionally excluded from the race/ethnic disparities literature.

Data and methods

We used the 1998–2009 waves of the National Health Interview Survey (NHIS), which is an annual and ongoing cross-sectional survey of the U.S. non-institutionalized population. We did not include earlier data because information on many child health indicators was not available or not comparable with data from more recent survey waves. Since 1998, the NHIS has consisted of a core component that collects a limited set of data from all members in a family including children and a “Sample Child” interview, which collects more detailed information from a randomly selected child (ages 0–17) in each family. Information in the Sample Child interview is obtained from a knowledgeable adult (usually the parent) in the household (National Center for Health Statistics, 2012). Most of the health indicators we used are contained in the Sample Child interview, although some indicators are contained in the core interview and therefore are available for a larger number of children. In order to obtain the most stable estimates, we used all available data for each of the health indicators. The study did not require ethics review, since this is a secondary analysis of deidentified publicly available data.

The 1998–2009 NHIS waves contain a total of 286,232 children ages 0–16, of which 133,647 were part of the Sample Child file. We limited the analysis to children under the age of 17 because of the possibility that some 17 year olds are selected out of the household due to college attendance. We omitted respondents with missing data on at least one covariate, which resulted in a small attrition from the sample (1–2%). The health indicators were also reported for the vast majority of the samples with missing information well under 1% of respondents for each of the indicators. The exception was missing school days, which was unusable for approximately 2.5% of the school-aged sample (ages 5+). This proportion of missing data was partly because 0.9% of the school-age sample (ages 5–16) was reported as not attending school. All analyses were based on public-use NHIS data files provided by the University of Minnesota’s Integrated Health Interview Series (IHIS). The IHIS contains a harmonized set of NHIS variables for multiple NHIS years and is therefore ideally situated to investigate trends (Minnesota Population Center and State Health Access Data Assistance Center, 2012).

Child health indicators

We examined 17 indicators of child health. For purposes of presentation, we categorized the 17 indicators into four broad groupings: (1) Overall health status; (2) Disability; (3) Consequences of illness; and (4) Specific conditions. All indicators were measured dichotomously. Overall health status elicited responses based on the standard 5-point Likert scale (Excellent, Very Good, Good, Poor, Fair). We created a 0/1 dummy variable indicating Poor/Fair health (alternative models treating this variable linearly resulted in similar substantive conclusions). We examined two measures of disability: limitations in play and activities of daily living (ADL) limitations. Limitations in play is restricted to children ages 0–4. Consequences of illness indicators highlight the potential social and economic costs of poor child health. We examined number of missed school days in the prior year due to illness or

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