

# Health Disparities and Children in Immigrant Families: A Research Agenda

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immigrant children, immigrant families, health disparities, acculturation, immigrant paradox, health policy

**ABBREVIATION**

SCHIP—State Children's Health Insurance Program

The views presented in this article are those of the authors, not the organizations with which they are affiliated.

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## abstract

Children in immigrant families now comprise 1 in 5 children in the United States. Eighty percent of them are US citizens, and 53% live in mixed-citizenship families. Their families are among the poorest, least educated, least insured, and least able to access health care. Nonetheless, these children demonstrate better-than-expected health status, a finding termed “the immigrant paradox” and one suggesting that cultural health behaviors among immigrant families might be protective in some areas of health. In this article the strength of the immigrant paradox, the effect of acculturation on health, and the relationships of acculturation, enculturation, language, and literacy skills to health disparities are reviewed. The current public policy issues that affect the health disparities of children of immigrant families are presented, and a research agenda for improving our knowledge about children in immigrant families to develop effective interventions and public policies that will reduce their health disparities is set forth. *Pediatrics* 2009;124:S187–S195

In recent decades, the large growth in the number of children living in immigrant families, whether born abroad or in the United States, has produced problems with health care that are a concern. These children and their families can be characterized by their country of origin, culture, religious background, social class, reason for immigrating, health status before immigrating, access to resources, and receptiveness of the US sociopolitical environment. The common factors of poverty and racial or ethnic biases can affect health status and access to health care for these children. The characteristics of their immigrant family can also influence the health disparities they experience. Thus, it is imperative that the pediatric community understand the health disparities among immigrant children and the impact of current and future public policies on their health status.

In this article the demographic characteristics of children in immigrant families, their health status and its relationship to the “immigrant paradox,” the roles of acculturation and enculturation in their health outcomes, the legal issues that contribute to disparities, and research priorities are profiled.

### THE DEMOGRAPHIC SHIFT

In 2030, non-Hispanic white children will constitute less than half of US children.<sup>1</sup> Although higher birth rates among minority groups will account for most of this demographic change, immigration will also contribute. Currently, 1 in 5 US children lives in an immigrant family, defined as a family with at least 1 immigrant parent.<sup>2,3</sup> The greatest proportions of immigrants come from Latin America (57% in 2000) and Asia; among those from Latin America, ~75% are from Mexico.<sup>4</sup>

Children in an immigrant family can be either first generation (foreign-born)

or second generation (US-born). The current census data show that 80% of children in immigrant families are US citizens because they were born in the United States, and 28% have at least 1 US-born parent.<sup>5</sup> The result is that more than half of the children in immigrant families (53%) live in a mixed-status family, with at least 1 citizen and 1 noncitizen family member (parent or sibling).

Children in immigrant families have different social and economic risk factors from native families. For example, first- and second-generation children are more likely than children from native families to live in a family headed by a married couple (78.9%, 81%, and 69.8%, respectively) and to live in a multigenerational household (13.2%, 12.9%, and 7.8%, respectively).<sup>4</sup> First- and second-generation children are more likely to live in families that live below the poverty line than children from native families (28.3%, 19.4%, and 16.7%, respectively). In addition, first- (55%) and second-generation (47.3%) children are more likely than native children (17%) to live in families in which at least 1 parent has not graduated from high school and that have  $\geq 1$  parent who is not fluent in English (76.4%, 55.2%, and 2.2%, respectively). Although a significant proportion of immigrant families own their home, 60% of first-generation and 44% of second-generation children live in crowded housing ( $>1$  person per room) versus 11% of children from native families.

Traditionally, the low economic and educational achievement profile of immigrant families would indicate that their children are at increased risk of health disparities. However, observations on their health status suggest that these relationships might be weaker than would be predicted from models of health risk that focus solely on socioeconomic factors.

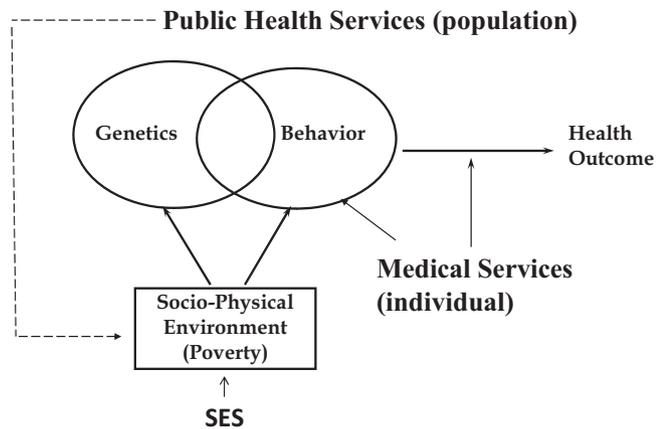
### THE HEALTHY IMMIGRANT PHENOMENON

The “healthy immigrant phenomenon,” also known as the “immigrant paradox” or the epidemiologic paradox, is that although Hispanic immigrants have higher poverty rates, lower education levels, and less access to health care than US-born Hispanics and non-Hispanic whites, they have similar or better health outcomes for several health parameters.<sup>5</sup> Since the 1980s, the best substantiated findings supporting the immigrant paradox are the prevalence of low birth weight infants and infant mortality rates.<sup>6–8</sup> In 1984, the prevalence of low birth weight infants in first-generation Mexican American women (3.9%) was lower than that in US-born Mexican Americans (5.5%).<sup>9</sup> Even after researchers controlled for the effects of smoking, drinking, marital status, Medicaid coverage, access to care, and levels of obesity, US-born Mexican American mothers were 1.73 times more likely to have a low birth weight infant than foreign-born Mexican American mothers.<sup>10</sup>

Several investigators have found that the immigrant paradox’s effect varies among immigrant groups but is most consistent among Hispanic immigrants.<sup>11–13</sup> However, some of the largest differences in low birth weight (11.8% vs 8.0%) and infant mortality rates (12.9 vs 10.5 per 1000) have occurred between foreign- and US-born non-Hispanic blacks. The immigrant paradox with respect to low birth weight seems to be partially related to drinking, smoking, and weight gain during pregnancy, although other factors might also be involved. The use of prenatal care does not necessarily decrease the prevalence of low birth weight among immigrant mothers, which seems to contradict our notion that prenatal care is essential for healthy infants.<sup>13</sup> The association of infant mortality with the mother’s immi-

grant status is less well understood, but as with low birth weight, multivariate analyses have indicated that immigrant status plays a significant role.<sup>13</sup> After infancy, the immigrant paradox is less well documented, primarily because limited data are available on children beyond infancy in immigrant families, and postinfancy samples usually include children born outside the United States. Samples of immigrant groups other than Mexican Americans are usually small and frequently aggregated into general categories rather than country-specific groups (eg, Asian instead of Chinese, Vietnamese, Filipino, etc), thereby limiting analyses.<sup>14</sup> Nonetheless, some insights can be drawn from the current literature. Depending on their country of origin, children born outside the United States frequently experience several health problems, including malnutrition resulting in wasting and stunting, untreated infectious diseases, severe dental problems, and serious mental health problems that are a result of stress from the causes of migration (war and violence) or the migration process itself.<sup>15–20</sup> Yet, once in the United States, these immigrant children can improve if they receive the appropriate services.<sup>15,21</sup> Children in immigrant families can continue to be affected by poverty, as exemplified by poor linear growth, which results in greater risk of stunting and obesity.<sup>20,22</sup> In other areas, they seem to be less affected. For example, parents of children in immigrant families have reported that their children had asthma less often than native children (first generation: 4%; second generation: 10%; and native families: 15%).<sup>2</sup> However, these children's lack of access to health care could have led to undiagnosed disease.

Children in immigrant families seem to do somewhat better in the areas of mental health and risky health behaviors than do children of native families.



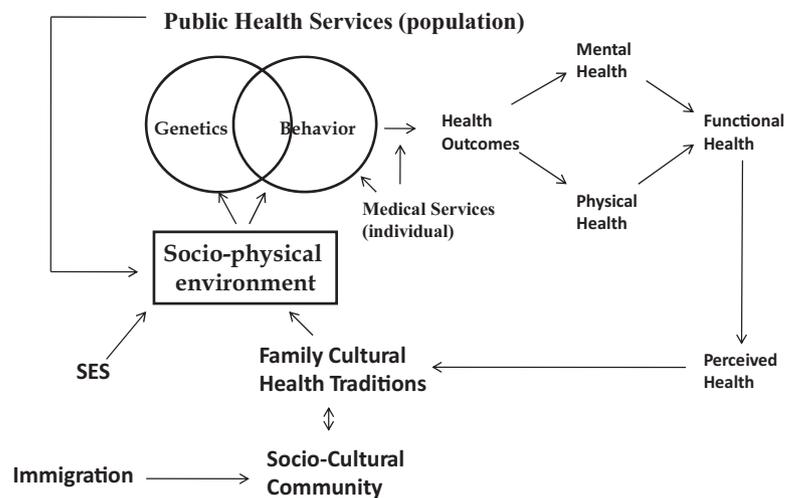
**FIGURE 1** Traditional health model. SES indicates socioeconomic status. (Reproduced with permission from Mendoza FS, Fuentes-Afflick E. *West J Med.* 1999;170(2):86.)

A national study found that first-generation adolescents were less likely to report fair-to-poor health; missing school because of health or emotional problems; experiencing learning difficulties; having obesity or asthma; or engaging in risky health behaviors involving early sex, participating in violent acts, or taking drugs.<sup>23</sup> However, other studies have found that parents of first-generation Mexican American children and adolescents rated their children's health to be fair to poor more often than native parents.<sup>2,20</sup>

The strongest evidence for the immigrant paradox comes from infants born

to immigrant mothers; the data for older children are less conclusive. Nonetheless, taken as a whole, the current information suggests that when the immigrant paradox occurs, it is associated with positive health behaviors that, presumably, the family and community environment encourage and support.

Counter to the traditional health model in which the sociophysical environment (primarily determined by socioeconomic status) interacts with individuals' genetics and behaviors (Fig 1), a model proposed by Mendoza and Fuentes-Afflick (Fig 2) includes the health-promotion activities of the fam-



**FIGURE 2** The immigrant paradox: family-community health promotion model. (Reproduced with permission from Mendoza FS, Fuentes-Afflick E. *West J Med.* 1999;170(2):88.)

ily and the community.<sup>24</sup> The model suggests that support of positive cultural health behaviors by the family and its community accounts for the protective effects of the immigrant paradox. In the Mendoza–Fuentes–Afflick model, the support of culturally derived positive health behaviors by the family and its community buffers the detrimental effects of poverty. When positive cultural health behaviors are believed to produce good functional health (eg, healthy infants or a sense of well-being) and, consequently, good perceived health, the family and community reinforce the behaviors through cultural norms. In the model, the cultural milieu is maintained by continued immigration into the community, thereby creating a critical mass of people to support the cultural norms of the family and its community.

Although the model's components and their relationships need further exploration, this schematic nonetheless points to the need to develop health models that are more sensitive to the cultural milieu of family and community. The immigrant paradox and the cultural nuances of health and well-being it emphasizes should open our thinking about factors that can buffer the effects of poverty and other traditional risk factors to produce the unexpected: good health.

## **HEALTH AND THE ACCULTURATION RISK**

Berry has defined acculturation as “a process of cultural and psychological change in cultural groups, families, and individuals following intercultural contact.”<sup>25</sup> The Institute of Medicine report on the health of children in immigrant families indicated that as these children became acculturated to the American lifestyle, they developed poorer outcomes for a number of health-status measures.<sup>2</sup> In a review of the literature on acculturation and

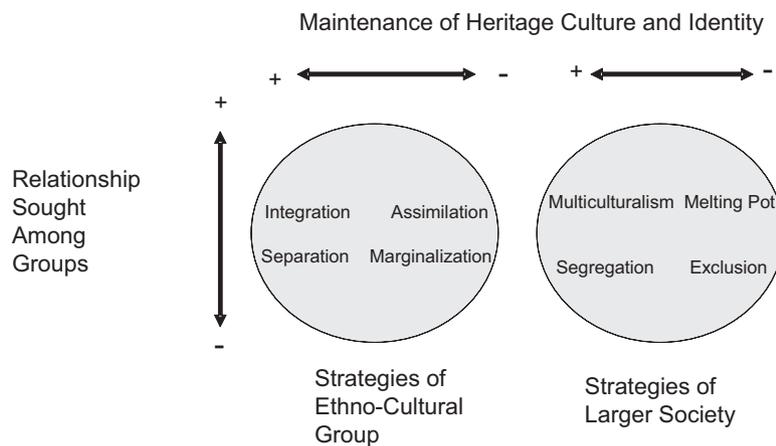
Latino health, however, Lara et al<sup>26</sup> found that acculturation of children and adults leads to both negative and positive health outcomes. In studies of children and adults, those who were acculturated had poorer health behaviors (such as increased rates of smoking, drinking, and drug use) and poorer nutritional intake. However, acculturated individuals also reported better access to health care and health screening, better satisfaction with care, and less perceived poor health. Other studies have demonstrated mixed results, which Lara et al believed were a result of the inadequacy of the acculturation theoretical construct and to problems with acculturation measures' validity and reliability. Although an assessment of language usage is common to all acculturation measures and accounts for a significant portion of those measures' variance, language usage alone is not sufficient to address the processes involved in acculturation.<sup>27</sup> Beyond language usage, the cultural perceptions, attitudes, and behaviors of non-English speakers differentiates them from English-speaking, acculturated immigrants. Furthermore, acculturation is not static but changes over time, and immigrant family members usually have different acculturation levels. As a result of these characteristics, acculturation's impact on health is difficult to assess.<sup>25,26</sup> Not surprisingly, the question of whether acculturation is a stressor or a facilitator of good health remains unanswered but is important for research to address.

## **CHILDREN IN IMMIGRANT FAMILIES: PRODUCTS OF ENCULTURATION AND ACCULTURATION**

All children of immigrant families become enculturated, or socialized to the culture of their parents' country of origin. Conversely, they become accultur-

ated to US culture to a greater or lesser degree depending on their age at migration, their length of contact with US culture, and the degree to which the family and community maintain their culture of origin. As contact with the US culture and the opportunity for acculturation occur, children's and adolescents' values, attitudes, and behaviors may differ from those of their families. If these changes lead to dysfunctional mental health or an increase in risky health behaviors, the changes can result in poorer health outcomes.

In contrast to acculturation, the enculturation process of children and adolescents results in the development of an ethnic identity. In children, ethnic identity is thought to be rudimentary and developed from the basic information received from parents about cultural attitudes and behaviors.<sup>28</sup> In contrast, adolescents develop a true ethnic identity as they determine their group's identities and explore the meaning of that identity.<sup>29–31</sup> A significant contributor to maintaining cultural identity for children and adolescents is proficiency in the ethnic language, which helps maintain the family's cultural values, attitudes, and behaviors.<sup>32</sup> Phinney et al<sup>33</sup> found 4 distinct profiles of adaptation to a new culture derived from the youths' attitudes about becoming acculturated, ethnic and national identities, language proficiency and usage, values concerning family relationships, peer contacts, and perceived discrimination. These 4 profiles were integration (equal participation in both cultures [biculturalism]), ethnic (focus on ethnic culture with limited participation in receiving culture), national (assimilation [limited participation in own ethnic culture]), and diffuse (confusion and not identified with either culture). Berry<sup>25</sup> developed a complementary framework for understanding immi-



**FIGURE 3**

Berry's acculturation strategies framework. (Reproduced with permission from Berry JW. Acculturation strategies and adaptation. In: Lansford JE, Deater-Deckard K, Bornstein MH, eds. *Immigrant Families in Contemporary Society*. New York, NY: Guilford Press; 1999:73.)

grant families' acculturation process. This framework is centered around 2 pivotal strategic decisions made by immigrant families in their interactions with the outside society: (1) the family's decision to maintain its cultural heritage and identity and (2) its decision about how much contact it will have with the larger society and other ethnocultural groups. These 2 strategic preferences are in the context of the larger society's acceptance of different cultures and society's willingness to have all communities fully participate in its institutions. Figure 3 presents the relationship of the pivotal strategies to each strategic decision and their consequence for the ethnocultural group and society. The immigrant family that wants a strong relationship with the mainstream and does not mind losing its cultural identity will choose to assimilate; those wanting to participate in the greater society but still keep their ethnocultural identity will integrate; those who feel disenfranchised and want to keep their cultural identity will become a separate ethnocultural community; and those that have lost their identity and have limited participation in society are likely to be marginalized.

Among all these options for acculturation, Berry<sup>25</sup> suggests that integration is the healthiest for immigrant families because it lets them maintain their identity as an ethnic family while adapting to their new environment. Society typically responds to the ethnic group in 1 of 4 possible ways: the melting pot, multiculturalism, segregation, and exclusion. Our country's history includes examples of all 4 scenarios.

How does the interaction between enculturation and acculturation affect children's health disparities? Children and adolescents with a strong ethnic identity are more likely to have a sense of self and good mental health.<sup>34,35</sup> A strong ethnic identity in immigrant adolescents has a positive correlation with self-esteem, coping, mastery, school adjustment, and optimism and a negative correlation with depression and loneliness.<sup>36</sup> Therefore, immigrant youth who select integrative acculturation are most likely to have the best long-term well-being outcomes.<sup>37</sup>

### IMPACT OF LANGUAGE AND LITERACY

Immigrant families' need for access to services, particularly health care services, for their children usually starts

on their arrival in the country. Non-English-speaking or limited-English-speaking parents frequently have problems interacting with the health care system, thereby increasing their children's risk of poor health outcomes.<sup>38</sup> Significant deficits in care and health outcomes result from imperfect or absent translational services.<sup>39</sup>

Healthy People 2010 defines health literacy as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."<sup>40</sup> Expanding on this construct, Duran<sup>41</sup> has recommended viewing literacy in a broad context as "literate action"; in other words, immigrants need to understand the use of language and other forms of communication in their daily sociocultural context. This suggests the need to extend literacy skills for immigrant families beyond interactions with the health care system and to include the literacy skills needed to interact with other social systems (such as schools, social welfare, and the legal system) that affect their children's well-being. This would be an important step in decreasing disparities for their children. Literacy programs for immigrant families need to take into account racial, ethnic, religious, and other cultural issues that can affect the parents' ability to become functionally literate in their environmental context.<sup>42</sup>

### CHILDREN IN IMMIGRANT FAMILIES AND MINORITY CHILDREN

Although children of immigrant families and those in US minority families commonly live in poverty, they display differences in health status. For example, children of immigrant Mexican American families (the largest immigrant group) are more likely to be impoverished, have less educated parents, and be uninsured than third-

generation and later generations of Mexican American children (US Hispanics) and black children.<sup>43</sup>

Although these characteristics suggest that children of immigrant families have a greater risk or poor health outcomes, the earlier discussion shows that children of immigrant families seem to have better-than-expected outcomes in a number of health areas. What makes this happen? Perhaps having a greater likelihood of being part of an intact 2-parent family, living with an extended family that provides social support, and being enculturated to an ethnic culture that helps define their self-identity buffer aspects of poverty in their environment that seem to be detrimental to children's health. These characteristics of immigrant families are less common among US minority groups living in poverty or low socioeconomic status conditions, particularly those who have had long-term family and community experiences that have resulted in marginalization. Berry's acculturation models of families into the greater society can be applied to all groups.<sup>25</sup> Perhaps the differences occur because immigrant families came to this country seeking the opportunity to integrate and have the perspective that this possibility exists, whereas US minorities have had experiences over generations that have erased that dream for them and their communities.

Kao<sup>44</sup> offered an example of this difference in a review of research on the adaptation of immigrant youth to school. The review showed that although these youth endured greater rejection from native whites and their own native ethnic group, they did better in school than their native ethnic group and showed strong resilience. Moreover, their families promoted educational success, and immigrant parents were optimistic about their children's upward mobility in society.<sup>45</sup> Ultimately, what parents transmit to children about what their future holds

**TABLE 1** Restrictions on the Use of Federal Programs by Documented and Undocumented Immigrants

Program	Documented	Undocumented
Child care and development fund subsidies	Eligible	Not eligible
Federal earned income tax credit	Eligible	Not eligible
Food stamps	No restrictions for children; adults barred for 5 y	Not eligible
Housing assistance (public housing)	Eligible	Not eligible
Public health insurance (Medicaid and SCHIP)	Eligible	Not eligible
Supplemental Security Income	Barred from benefit	Not eligible
Temporary Assistance for Needy Families	Barred for 5 y	Not eligible
Unemployment insurance	Eligible	Not eligible
Special Supplemental Nutrition Program for Women, Infants, and Children	Eligible	Varies by state
School lunch	Eligible	Eligible
Emergency Medicaid	Eligible	Eligible

Data source: Peninsula Family Advocacy Program, personal communication, 2009.

and what society can offer can make a significant difference.

### LEGAL AND REGULATORY POLICIES

Changes in immigration policy over the past decades have influenced disparities for children in immigrant families primarily by restricting access to Medicaid and the State Children's Health Insurance Program (SCHIP). In 2000, one third of all uninsured low-income children were children of immigrant families, of which 33% were undocumented children and 50% were citizen children of noncitizen parents.<sup>46</sup> In contrast, only 16% of citizen children with naturalized immigrant parents were uninsured.

The public policies that limit access to health and social service programs have been major contributors to health disparities among children of immigrant families. Table 1 lists the current health and social services limitations for children in immigrant families, determined from the literature and personal communication with the Peninsula Family Advocacy Program ([www.peninsulafap.org/index.php](http://www.peninsulafap.org/index.php)). Before the reauthorization of the SCHIP this year, documented immigrant children were not able to access public health insurance for the first 5 years after arrival. By changing this policy in the reauthorization of the CHIP, the

health of documented immigrant children in the United States will improve. Thus, as we study health disparities among children in immigrant families, we need to examine disparities caused by public policy as well as those determined by the environment and biology.

The Institute of Medicine report on the health of children in immigrant families described the impact of key public policies since 1965.<sup>2</sup> The policy on "public charge" (the use of public funds) has become critical for immigrant parents, who are concerned that this could prevent them or their children from becoming legal residents or citizens. The variability in and misunderstanding of public-charge assessment has led some immigrant families to avoid obtaining health services for their children. Since 1996, the use of food stamps by mixed-citizenship families has decreased by 20%, and the proportion of children of immigrant parents without health insurance has increased to 28.4%.<sup>47,48</sup> Many of these children are US citizens.<sup>49</sup>

As national public benefits policy for immigrants has changed, state and local governments have worked to improve health care access for children of immigrant families. Communities in California have taken the lead in developing health insurance programs for

undocumented children, such as the “Healthy Kids” program supported by a mix of public and private funds.<sup>50</sup> They have also attempted to increase access to Medicaid and the SCHIP for citizens and legal immigrant children in immigrant families through informational campaigns. These efforts have reduced the number of uninsured children, but the battle to provide consistent and sustainable health insurance for all children, particularly in border states, is a significant problem for health and public policy makers.<sup>49</sup> State policies concerning coverage of legal immigrants vary according to state.<sup>51</sup> Fortunately, the reauthorization of the SCHIP will help improve this situation. A humane national policy for children in immigrant families is clearly needed, and Congress has taken the first step in that direction.

### RESEARCH PRIORITIES

From the discussion above, the priorities for research on children in immigrant families can be divided into 3 areas: (1) improving their access to health care; (2) improving the quality of their health care; and (3) elucidating the cultural factors that support positive health and developmental outcomes. To achieve these goals, investigators will need data on these children that allow identification of the children’s country of origin and their parents’ residential status. Researchers will also need to acquire research instruments that provide culturally valid information on these diverse populations. One survey that has addressed the challenges in assessing immigrant communities is the California Health Interview Survey.<sup>52</sup> This unique survey has become an important data source for researchers and policy makers in California.

Currently, research on how to improve access to health care for children in immigrant families is critical. Research to understand the barriers and develop interventions could have the greatest immediate impact on these children and would have a timely impact on policy makers, particularly in states with large immigrant populations. The present crisis in the cost of health care along with the economic downturn will clearly increase the risk that a greater proportion of these children will become uninsured. Therefore, research on access to health care for these children needs to explore venues for providing care that are different from traditional systems. Community health workers, group care, and binational health care systems might provide the economic models needed to expand access more cost-efficiently.

Research on the quality of care given to children in immigrant families is the other half of the critical agenda for children in immigrant families. Even when children in immigrant families have access to health care, the quality of that care might be reduced because providers or the health care system do not provide culturally competent care. The use of medical interpreters, although important, is not sufficient to ensure high-quality care for immigrant families and their children because they also usually have a different culture, religion, or social class that affects their interactions with the provider and the health care system. Furthermore, disparity in quality of care can arise because access to health care for these children frequently occurs at high-volume facilities that commonly have limited resources and may have less access to regionalized pediatric services. There-

fore, as we retool our health care system to provide patient-centered and transparent care, we need to consider how to train our health care providers and teach our future providers to provide culturally competent care, and how we insure that access to care is also appraised by the quality of the care received by these children. Although some health care systems have started to address these issues, the economic drive to provide cost-efficient care (getting it right the first time) will increase incentives to move in this direction as the populations of children become more diverse. Research in this area will not only improve care for children of immigrant families but for all families by emphasizing the family’s individual needs.

Finally, the immigrant paradox can expand the discussion of health risks and disparities to involve the possible benefits of culture in maintaining good health. The implications of this are academically interesting and economically intriguing. For example, in perinatal care, which involves significant morbidity and health care costs, maintaining the low prevalence of low birth weight infants among immigrant women and translating the contributing factors to other groups of women is a high priority for research. Research also needs to explore and modify cultural factors that contribute to poor health, such as attitudes about obesity. Effective research in this area will require a multidisciplinary approach with researchers from outside the fields of health and public health. Understanding the triad of biology, environment, and culture will provide the basis for improved health for children in immigrant families and will be a step forward in reducing children’s health disparities in the United States.

## REFERENCES

- Hernandez D, Denton N, Macartney S. *Children in America's Newcomer Families* [Research Brief Series]. Albany, NY: Child Trends & the Center for Social and Demographic Analysis, State University of New York at Albany; 2007
- Hernandez DJ, Charney E. *From Generation to Generation: The Health and Well-being of Children in Immigrant Families*. Washington, DC: National Academies Press; 1998
- Hernandez DJ, Denton NA, Macartney SE. Family circumstances of children in immigrant families. In: Landford JE, Deater-Deckard K, Bornstein MH, eds. *Immigrant Families in Contemporary Society*. New York, NY: Guilford Press; 2007:9–29
- US Census Bureau. *Selected Characteristics of the Foreign-Born Population by Period of Entry Into the United States: American Community Survey*. Washington, DC: US Census Bureau; 2006
- Markides KS, Coreil J. The health of Hispanics in the southwestern United States: an epidemiologic paradox. *Public Health Rep*. 1986;101(3):253–265
- Ventura SJ, Taffel SM. Childbearing characteristics of U.S.- and foreign-born Hispanic mothers. *Public Health Rep*. 1985;100(6):647–652
- Williams RL, Binkin NJ, Clingman EJ. Pregnancy outcomes among Spanish-surname women in California. *Am J Public Health*. 1986; 76(4):387–391
- Mendoza FS, Ventura SJ, Valdez RB, et al. Selected measures of health status for Mexican-American, mainland Puerto Rican, and Cuban-American children. *JAMA*. 1991; 265(2):227–232
- Scribner R, Dwyer J. Acculturation and low birthweight among Latinos in the Hispanic HANES. *Am J Public Health*. 1989;79(9): 1263–1267
- Guendelman S, Gould J, Hudes M, Eskenazi B. Generational differences in perinatal health among the Mexican American population: findings from the HHANES 1982–1984. *Am J Public Health*. 1990;80(suppl): 61–65
- Fuentes-Afflick E, Hessol NA, Pérez-Stable EJ. Maternal birthplace, ethnicity, and low birth weight in California. *Arch Pediatr Adolesc Med*. 1998;152(11):1105–1112
- Gould JB, Madan A, Oin C, Chavez G. Perinatal outcomes in two dissimilar immigrant populations in the United States: a dual epidemiologic paradox. *Pediatrics*. 2003;111(6 pt 1). Available at: [www.pediatrics.org/cgi/content/full/111/6/e676](http://www.pediatrics.org/cgi/content/full/111/6/e676)
- Landale NS, Oropesa RS, Gorman BK. Immigration and infant health: birth outcomes of immigrant and native-born women. In: Hernandez DJ, ed. *Children of Immigrants: Health, Adjustment, and Public Assistance*. Washington, DC: National Academies Press; 1999:244–285
- Mendoza FS, Javier JR, Burgos AE. Health of children in immigrant families. In: Lansford JE, Deater-Deckard K, Bornstein MH, eds. *Immigrant Families in Contemporary Society*. New York, NY: Guilford Press; 2007:30–50
- Schumacher LB, Pawson IG, Kretchmer N. Growth of immigrant children in the newcomer schools of San Francisco. *Pediatrics*. 1987;80(6):861–868
- Nelson LJ, Schneider E, Wells CD, Moore M. Epidemiology of tuberculosis in the United State, 1993–2001: the need for continued vigilance. *Pediatrics*. 2004;114(2):333–341
- Armstrong GL, Mast EE, Wojczynski M, Margolis HS. Childhood hepatitis B virus infections in the United States before hepatitis B immunization. *Pediatrics*. 2001;108(5): 1123–1128
- Weine SM, Kuauzovic Y, Besic S, et al. Family consequences of refugee trauma. *Fam Process*. 2004;43(2):147–160
- American Psychological Association. The mental health needs of immigrants. Available at: [www.apa.org/ppo/ethnic/immigrant/health.html](http://www.apa.org/ppo/ethnic/immigrant/health.html). Accessed February 2, 2009
- Mendoza FS, Dixon LB. The health and nutritional status of immigrant Hispanic children. In: Hernandez DJ, ed. *Children of Immigrants: Health Adjustment and Public Assistance*. Washington, DC: National Academies Press; 1999:187–243
- Daley TC. Beliefs about treatment of mental health problems among Cambodian American children and parents. *Soc Sci Med*. 2005; 61(11):2384–2395
- Martorell R, Malina RM, Castillo RO, Mendoza FS, Pawson IG. Body proportions in three ethnic groups: children and youths 2–17 years in NHANES II and HHANES. *Hum Biol*. 1988;60(2):205–222
- Harris KM. The health status and risk behaviors of adolescents in immigrant families. In: Hernandez DJ, ed. *Children of Immigrants: Health, Adjustment, and Public Assistance*. Washington, DC: National Academies Press; 1999:286–347
- Mendoza FS, Fuentes-Afflick E. Latino children's health and the family-community health promotion model. *West J Med*. 1999; 170(2):85–92
- Berry JW. Acculturation strategies and adaptation. In: Lansford JE, Deater-Deckard K, Bornstein MH, eds. *Immigrant Families in Contemporary Society*. New York, NY: Guilford Press; 1999:69–82
- Lara M, Gamboa C, Kahramanian M, Morales L, Hayes Bautista D. Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. *Annu Rev Public Health*. 2005;26: 367–397
- Marin G. Issues in the measurement of acculturation among Hispanics. In: Geisinger KF, ed. *Psychological Testing in Hispanics*. Washington, DC: American Psychological Association; 1992:23–51
- Bernal ME, Knight GP, Garza CA, Ocampo KA, Cota MK. Development of Mexican American identity. In: Bernal M, Knight G, eds. *Ethnic Identity: Formation and Transmission Among Hispanics and Other Minorities*. Albany, NY: State University of New York Press; 1993:31–46
- Phinney JS, Ong AD. Ethnic identity development in immigrant families. In: Lansford JE, Deater-Deckard K, Bornstein MH, eds. *Immigrant Families in Contemporary Society*. New York, NY: Guildford Press; 2007:51–68
- Knight GP, Bernal ME, Garza CA, Cota MK, Ocampo K. Family socialization and the ethnic identity of Mexican-American children. *J Cross-Cultural Psych*. 1993;24(1):99–114
- Phinney JS. A three-stage model of ethnic identity development in adolescence. In: Knight GP, Bernal ME, eds. *Ethnic Identity: Formation and Transmission Among Hispanic and Other Minorities*. Albany, NY: State University of New York Press; 1993: 61–79
- Phinney JS, Romero I, Nava M, Huang D. The role of language, parents, and peers in ethnic identity among adolescents in immigrant families. *J Youth Adolesc*. 2001;30(2): 135–153
- Phinney JS, Berry JW, Vedder PI, Liebkind K. The acculturation experience: attitudes, identities, and behaviors of immigrant youth. In: Berry JW, Phinney JS, Sam DL, Veder P, eds. *Immigrant Youth in Cultural Transition: Acculturation, Identity, and Adaptation Across National Contexts*. Mahwah, NJ: Erlbaum; 2006:71–116
- Phinney JS, Kohatsu EL. Ethnic and racial identity development and mental health. In: Maggs JL, Schulenberg J, eds. *Health Risks and Developmental Transitions During Adolescence*. New York, NY: Cambridge University Press; 1997:420–443
- Nesdale D, Rooney R, Smith L. Migrant ethnic

- identity and psychological distress. *J Cross Cult Psychol*. 1997;28(5):569–588
36. Roberts RE, Phinney JS, Masse LC, Chen Y, Roberts CR, Romero A. The structure of ethnic identity of young adolescents from diverse ethnocultural groups. *J Early Adolesc*. 1999;19(3):301–322
  37. Berry JW. Immigration, acculturation, and adaptation. *Appl Psychol*. 1997;46(1):5–68
  38. Berkman ND, DeWalt DA, Pignone MP, et al. Literacy and health outcomes. *Evid Rep Technol Assess (Summ)*. 2004;(87):1–8
  39. Flores G. The impact of medical interpreter services on the quality of health care: a systematic review. *Med Care Res Rev*. 2005;62(3):255–299
  40. US Department of Health and Human Services. *Healthy People 2010*. Washington, DC: US Government Printing Office; 2000
  41. Duran R. English immigrant language learners: cultural accommodation and family literacy. In: Benjamin L, Lord J, eds. *Family Literacy: Directions in Research and Implications for Practice: Summary and Papers of a National Symposium*. Washington, DC: Department of Education; 1996:25–30
  42. Gadsden VL. Designing and conducting family literacy programs that account for racial, ethnic, religious, and other cultural differences. In: Benjamin L, Lord J, eds. *Family Literacy: Directions in Research and Implications for Practice: Summary and Papers of a National Symposium*. Washington, DC: Department of Education; 1996:31–38
  43. Burgos A, Schetzina K, Dixon B, Mendoza F. Importance of generational status in examining access to and utilization of health care services by Mexican American children. *Pediatrics*. 2005;115(3). Available at: [www.pediatrics.org/cgi/content/full/115/3/e322](http://www.pediatrics.org/cgi/content/full/115/3/e322)
  44. Kao G. Psychological well-being and educational achievement among immigrant youth. In: Hernandez DJ, ed. *Children of Immigrants: Health, Adjustment, and Public Assistance*. Washington, DC: National Academies Press; 1999:410–477
  45. Kao G, Tienda M. Optimism and achievement: the educational performance of immigrant youth. *Soc Sci Med*. 1995;76(1):1–19
  46. Lessard G, Ku L. Gaps in coverage for children in immigrant families. *Future Child*. 2003;13(1):101–115
  47. Dinan KA. Federal policies restrict immigrant children's access to key public benefits. In: *Children in Low-Income Immigrant Families: Policy Brief*. New York, NY: Mailman School of Public Health, Columbia University; 2005:1–11
  48. Kaushal N, Kaestner R. Welfare reform and health of immigrant women and their children. *J Immigr Minor Health*. 2007;9(2):61–74
  49. Lavarreda SA, Brown ER, Yoon J, Glenn S. More than half of California's uninsured children eligible for public programs but not enrolled. In: Brown ER, ed. *Health Policy Fact Sheet*. Los Angeles: University of California at Los Angeles; 2006:1–2
  50. Stevens GD, Rice K, Cousineau MR. Children's health initiatives in California: the experiences of local coalitions pursuing universal coverage for children. *Am J Public Health*. 2007;97(4):738–743
  51. Ku L. *Reducing Disparities in Health Coverage for Legal Immigrant Children and Pregnant Women*. Washington, DC: Center on Budget and Policy Priorities; 2007
  52. California Health Interview Survey. Making an impact. Available at: [www.chis.ucla.edu/about.html](http://www.chis.ucla.edu/about.html). Accessed September 3, 2009

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