The Health of Latino Children

Urgent Priorities, Unanswered Questions, and a Research Agenda

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Latinos recently became the largest racial/ethnic minority group of US children. The Latino Consortium of the American Academy of Pediatrics Center for Child Health Research, consisting of 13 expert panelists, identified the most important urgent priorities and unanswered questions in Latino child health. Conclusions were drawn when consensus was reached among members, with refinement through multiple iterations. A consensus statement with supporting references was drafted and revised. This article summarizes the key issues, including lack of validated research instruments, frequent unjustified exclusion from studies, and failure to analyze data by pertinent subgroups. Latino children are at high risk for behavioral and developmental disorders, and there are many unanswered questions about their mental health needs and use of services. The prevalence of dental caries is disproportionately higher for Latino children, but the reasons for this disparity are unclear. Culture and language can profoundly affect Latino children's health, but not enough cultural competency training of health care professionals and provision of linguistically appropriate care occur. Latinos are underrepresented at every level of the health care professions. Latino children are at high risk for school dropout, environmental hazards, obesity, diabetes mellitus, asthma, lack of health insurance, nonfinancial barriers to health care access, and impaired quality of care, but many key questions in these areas remain unanswered. This article suggests areas in which more research is needed and ways to improve research and care of Latino children.

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LATINOS ARE THE LARGEST MINORity group of children (11.6 million) in the United States,[1] comprising 16% of the population younger than 18 years.[1] In California, the most populous state, Latinos surpassed whites as the state's largest racial/ethnic group of children in 2000.[2] By 2010, approximately half of all California children will be Latino, and they will outnumber white children by 1.9 million; in 2030, 57% of California children (9.2 million) will be Latino, and they will outnumber white children by 5.3 million.[2] Given the tremendous growth of this population, pediatricians and other health care practitioners, child health researchers, and child health policy makers are increasingly likely to encounter Latino children in their practices, study populations, and legislative agendas.

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Latino children are a model population for evaluating effective approaches to improving the health of underserved and high-risk populations because they experience a disproportionate burden of health risk factors, morbidity, suboptimal health status, underuse of health services, impaired access to care, and health disparities.[3] For example, Puerto Rican children have the highest prevalence of active asthma (11%), exceeding by far the prevalence for blacks (6%) and whites (3%).[4] Latino children are at significantly greater risk than whites of being hospitalized for or dying from injuries[5] and are 13 times more likely than whites to be infected with tuberculosis.[6] Even after adjustment for family income and parental education, Latino children are significantly more likely than whites to have suboptimal health status, spend more days in bed for illness, and make fewer physician visits.[7] Latino children face numerous barriers to health care, including language problems, cultural issues, and lack of health insurance.[8] Health disparities for Latino children include a lower likelihood of vision screening,[9] receiving prescriptions,[10] being adequately medicated for pain,[11] and receiving high-quality care for asthma[12] and gastroenteritis.[13]

The mission of the Latino Consortium of the American Academy of Pediatrics Center for Child Health Research (CCHR) is to define the critical research and policy issues in Latino children's health.

METHODS

The Latino Consortium, sponsored and partially supported by the American Academy of Pediatrics, consists of 13 expert panelists selected to provide skills in multiple disciplines relevant to child health and includes pediatricians, health service researchers, a director of research at the Office of Minority Health, an academic dentist, an anthropologist, an academic nurse, a dean of a school of public health, and an environmental health expert.

The methods used in developing this assessment were as follows: first, each member was asked to identify the most important issue facing Latino children and youth, without repeating any issue. All topics identified were included; conclusions were agreed on by reaching consensus. Second, multiple iterations enabled topic refinement and clarification. A preliminary consensus statement was drafted after the initial group assessment of priorities and unanswered questions and was then reviewed 3 times by all consortium members, and suggestions were incorporated in each revision. Third, supporting references were reviewed and included, with the requirement that each topic identified as an urgent priority or unanswered question be validated or supported by published studies. Fourth, the manuscript was redistributed, discussed, and reviewed twice by each consortium member after peer review by THE JOURNAL.

Latino here denotes all US persons whose origins can be traced to the Spanish-speaking regions of Latin America, including the Caribbean, Mexico, Central America, and South America. *Hispanic* places narrow and excessive emphasis on the European influence of Spanish colonialism and does not properly acknowledge the crucial roles of indigenous Indian and African cultures in Latin American history.[14]

URGENT PRIORITIES AND UNANSWERED QUESTIONS IN LATINO CHILD HEALTH

The consortium's guiding conceptual framework was that the special health needs and disparities for Latino children originate from many factors, including insufficient methodologic approaches and inadequate inclusion in research, disproportionate disease burden and associated risk factors, special cultural and linguistic considerations that affect health and health care–seeking behaviors, underrepresentation of Latinos in the health care workforce, and substantial access barriers to quality health care.

RESEARCH AND METHODOLOGIC ISSUES

Lack of suitable, valid research instruments for Latino children is recognized as a concern by all consortium members. Such instruments rarely are designed with Latino children in mind or in consultation with Latino researchers and so are unsuitable for Latino children because they are not culturally or linguistically appropriate. For example, analysis of problems in translating the child and adult survey instruments of the Consumer Assessment of Health Plans Study[15] from English to Spanish revealed that initial Spanish translations were too awkward, culturally inappropriate, insufficiently idiomatic, frequently lacking in conceptual equivalence, and at an inappropriately high reading level for the target population.

Few child health research instruments have been adequately validated in Latino populations. For example, the Child Behavior Checklist[16] is a commonly used standardized assessment protocol for child behavior problems, but a MEDLINE review of the literature, conducted in December 2001, revealed only one study[17] on Child Behavior Checklist validity for Latino or Spanish-speaking children, which found that scales for low prevalence problems showed poor internal consistency in a community sample of children in Puerto Rico. The Conners' Parent Rating Scale[18] and the Conners' Teacher Rating Scale[19] also are commonly used research and clinical questionnaires for assessing childhood behavioral problems. In reviewing the literature, we encountered only 2 studies that examined the validity of the Conners' scales in Latino or Spanish-speaking children: in separate studies of children in Spain[20] and Colombia,[21] Spanish versions of the Conners' Parent Rating Scale had lower reliability and validity than the Conners' Teacher Rating Scale.

The consortium thus recommends that child health research instruments at least be validated in Spanish-speaking families, poor and low-literacy populations, communities with substantial proportions of noncitizens, and all relevant Latino subgroups (such as those of Mexican, Puerto Rican, Cuban, Dominican, Central American, and South American extraction). Failure to perform such validity tests may result in distorted study

results[22]; for example, validity and reliability problems, such as the use of inappropriate response formats and dichotomization, can substantially bias findings and conclusions regarding patient satisfaction among Spanish-speaking patients.[23] Examples of suitable, well-validated instruments available in both English and Spanish are the Pediatric Asthma Symptom Scale[24] and the Oucher, a self-report pain measure composed of photographs of a Latino male adolescent in varying expressions of pain.[25]

The ethnicity of study personnel administering a research instrument or recruiting participants may also introduce bias: a white male research assistant administering a survey, for example, may be viewed with suspicion and as lacking cultural understanding by Latino research subjects and their families. The consequences can be withholding or altering key information and distortion of data when there are immigration concerns and instruments are not available in Spanish. Investigators who understand the culture, education, and literacy levels of study subjects can be invaluable. For example, a study[26] found that even though Latinos believe that participating in clinical trials for cancer can be beneficial, they knew little about clinical trials, had basically no opportunity to participate in such trials, and cited "mistrust of white people" as an impediment to trial participation. Similarly, Latino patients with HIV/AIDS (human immunodeficiency virus/acquired immunodeficiency syndrome) are significantly less likely to be told about, know of, and participate in AIDS clinical trials.[27] A study[28] of predominantly white health care practitioners responsible for recruiting patients into AIDS clinical trials showed that significantly fewer practitioners felt comfortable with their ability to explain the trials in culturally appropriate terms to Latino patients. On the other hand, a study[8] of access barriers to health care for Latino children that used bilingual Latina research assistants to administer oral surveys in the mothers' language of choice resulted in high participation rates, particularly among difficult-to-reach populations that included noncitizens, recent immigrants, and the uninsured. This study also employed a successful but underused strategy for recruitment of qualified Latino research assistants: collaboration with local community-based organizations to identify appropriate personnel. An alternative to using research assistants to increase recruitment in minority communities is use of peer interviewers (trained individuals from the community).[29] Given the low number of Latino academic researchers, training and using young Latino investigators in research on Latino children can have multiple benefits. Of course, culturally sensitive research with Latino populations is not simply a matter of ethnic or language matching, but it is the identification of and proper response to the needs and preferences of communities and knowledge of how best to communicate with the communities' citizens.

Latinos frequently are not included in child health research. The consortium identified 3 common errors in study design that contribute to this omission. The first error is arbitrarily excluding all non–English speakers from study enrollment. This problem is particularly egregious when non–English speakers are excluded from studies conducted in metropolitan areas and states with many Latinos. Data from such studies are distorted by selection bias and have questionable external validity. For example, one study[30] found that only 22% of all articles published in major medical journals included non–English-speaking subjects, and 51% of authors who excluded non–English-speaking patients from their studies admitted that their reason for exclusion was that they had not thought of the issue. The US Department of Health and Human Services regulations for protection of human subjects require that information in research funded by the department be presented "in language understandable to the subject," and "subjects who do not speak English should be presented with a consent document written in a language understandable to them."[31]

The second error is assuming that a study sample is ethnically and racially diverse (or nationally representative) when only white and black subjects are enrolled or analyzed. Latinos (along with Asians/Pacific Islanders and Native Americans) frequently are omitted from enrollment or analysis in studies whose focus purports to be racial and ethnic disparities. National, state, and regional studies limited to such biracial comparisons have limited utility and applicability. For example, one study[32] claimed to examine racial and sex differences in smoking prevalence in response to price and tobacco control policies in a "nationally representative sample" of US youth, but all analyses were restricted to only white and black subjects. Thus, the sample was not nationally representative because it omitted not only Latinos but also all other racial/ethnic groups.

The third error is relegating Latinos and other nonwhite research subjects to an "other" category in the analysis and interpretation of data. Such practices can obscure significant racial/ethnic disparities and may reflect bias in subject recruitment, such as inadequate efforts to include minority participants or exclusion of subjects with limited English proficiency (LEP). For example, in a study[33] of corticosteroid prescriptions for asthmatic children covered by Medicaid in Tennessee, data were analyzed by using only 2 categories: "black" and "white or other." Such a biased analysis not only arbitrarily excludes Latino children (the third largest and fastest growing racial/ethnic group of children in Tennessee[34]) but also distorts the study findings because the "black" and "white or other" groups contain Latinos (who can be of any race), and the "white or other" group contains all other racial/ethnic groups in the state.

Latino child health data rarely are analyzed by pertinent subgroups. Several studies[4,7,35-39] have demonstrated that substantial differences in health and use of health services exist among Latino subgroups (such as Mexican Americans, Puerto Ricans, and Cuban Americans) that would otherwise be overlooked and that can exceed that magnitude of differ-

ences among major ethnic and racial groups. For example, major Latino subgroup differences have been documented for rates of prematurity and low birth weight,[36] asthma prevalence,[4] illicit drug use,[37] vaccination coverage,[39] the prevalence of chronic conditions,[38] and several indicators of health status and use of services.[7,35] Failure to perform subgroup analyses can result in missing critical findings that can affect child health, policy, and advocacy. In addition, intragroup differences occur that can significantly affect child health research, including the child's generational and acculturation level, the child's and parents' immigration status, parental educational attainment and mental health, family income, geographic location, and the sociopolitical environment of the community (whether a child and his or her family have social and health support in their community).[40,41]

The lack of inclusion of Latinos in child health research is concerning but simple to remedy. The CCHR recommends that, whenever possible, studies should examine racial and ethnic differences in health and identify underlying factors for such disparities. At a minimum, this would include comparisons among Latinos, whites, and non-Latino blacks (and Native Americans and Asians/Pacific Islanders, depending on the population). Researchers, policy makers, and funding agencies should ensure that efforts are made to enroll LEP participants, immigrants, and noncitizens in studies to ensure maximum external validity and avoid selection bias. We also recommend analyses by relevant subgroups, which, for Latinos, can include those of Mexican, Puerto Rican, Cuban, Dominican, Central American, and South American extraction. The subgroup analysis may vary, depending on the population, and will have to be tailored according to demographics of the region or study area. In certain regions of the United States without substantial proportions of Latinos, the number of Latinos may be too small to permit adequate study enrollment and valid analysis by racial/ethnic group or Latino subgroup. In such cases, the consortium recommends that researchers present a brief quantitative justification regarding why further analysis by racial/ethnic groups and subgroups is not warranted. Also, to conduct child health research that will truly advance the field, factors such as acculturation level, immigration status, and socioeconomic status that vary within Latino subgroups also need to be included in study design and data collection, analysis, and interpretation.

DISPROPORTIONATE DISEASE BURDEN AND ASSOCIATED RISK FACTORS

Behavioral and Developmental Issues

There are many unanswered questions regarding why Latino children are at high risk for behavioral and developmental disorders and what factors are associated with these disorders. For example, it is unclear why Puerto Rican children have among the highest national prevalence of developmental disorders and functional limitations, including chronic developmental conditions (11%), functional limitations (13%), and developmental problems by parental report (20%).[38] Two extensive literature reviews[3,42] of Latino child health found no published studies that specifically addressed Latino children and such crucial issues as school readiness, prevalence and determinants of attention-deficit/hyperactivity disorder, and the impact of chronic diseases on development and functioning, so more investigation is needed in these areas. Preliminary research[43] indicates that bilingual literacy promotion can increase literacy behaviors among Latino children and families, but much more work needs to be done on early literacy issues among Latinos. More studies are needed on immigration's impacts on family dynamics and the effective, culturally appropriate interventions to help families through this transition.

Mental Health

There are substantial gaps in our knowledge about the mental health needs and use of services among Latino children.[44] For example, one study[45] found that significantly higher proportions of Latinos than blacks presented with morbid depression, phobias/fears, anxiety/panic, school refusal, and disturbances of relationships with other children. In 1999, 20% of Latino youth reported considering suicide, compared with 15% of black and 18% of white youth.[46] In particular, Latina adolescents (19%) were significantly more likely than white (9%) and black (8%) adolescent girls to have attempted suicide.[46] Few studies, however, have addressed risk factors, mental health care access, and outcomes for these children. Another recent study[47] found that Latinos are significantly less likely than whites and blacks to be hospitalized for mental illness in general and specific diagnoses. Not enough research has been done on causes of these disparities, such as referral bias, underuse of mental health care, or barriers related to ethnicity, culture, language, and socioeconomic status.

Oral Health

The prevalence of dental caries is disproportionately higher for Latino children.[48] Among children aged 2 to 4 years, Mexican Americans are more likely than whites and blacks to have caries, untreated disease, and decayed and filled tooth surfaces.[49] Among children aged 12 to 17 years, only 30% of Mexican Americans are free of caries in their permanent teeth, compared with 32% of whites and 41% of blacks.[50] However, only 60% of 12- to 17-year-old Mexican Americans have had their dental caries treated or filled, compared with 87% of 12- to 17-year-old white children.[48] In another study,[51] Mexican American adolescents were twice as likely as white adolescents to have at least one untreated caries lesion. Studies[52,53] indicate a high prevalence of early childhood caries among urban Latino children, ranging from 13% in San Antonio, Tex, to 37% in San Francisco, Calif. Migrant and rural Latino children are at especially high risk for caries and lower numbers of restored teeth: among children aged 5 to 14 years, the mean proportion of teeth with carious surfaces is 65% for migrant chil-

dren vs 17% for US schoolchildren,[54] and only 20% of rural Latino children have filled dental surfaces compared with 76% of school children nationwide.[55]

The reasons for these oral health disparities are unclear and need further investigation. The roles of acculturation, cultural preferences for sugary beverages, putting infants to sleep with bottles, and mother-child transmission of caries-causing bacteria have not adequately been examined for Latino children. Latino children also experience substantial barriers to dental care, including lack of insurance, a dearth of dentists who accept Medicaid, shortages of Latino dentists, and cultural and linguistic obstacles.

Overweight, Obesity, and Diabetes Mellitus

Latino boys are the most overweight and Latina girls the second most overweight racial/ethnic groups of US children.[56] A recent study[57] of poor elementary school Mexican American children revealed that 27% of girls and 23% of boys were overweight. An extremely high prevalence of risk factors for future type 2 diabetes was noted in a study of low-income 9-year-old Mexican Americans in Texas, including 60% of children with first- or second-degree relatives diagnosed as having diabetes, 38% with unacceptable physical fitness scores, a high prevalence of obesity, and eating higher-than-recommended percentages of energy from fat and from saturated fat but half the recommended daily fruit and vegetable intake.[58] Data[59,60] suggest that the incidence and prevalence of type 2 diabetes are rapidly rising among Latinos, with type 2 diabetes accounting for 45% of newly diagnosed diabetes cases and 31% of all diabetic cases in one California study.[59] More research is needed to determine why Latino children have such high risks of obesity and diabetes and what preventive interventions are most effective.

Asthma and Environmental Health

A half million Latino children have asthma; two thirds of them are Puerto Rican.[61] Puerto Rican children have the highest prevalence of active asthma (11%) of any US ethnic/racial group of children, exceeding by far the prevalence for blacks (6%) and whites (3%), whereas active asthma is present in only 3% of Mexican American and 5% of Cuban American children.[4] In a study of asthma in New York City Latino families living on the same streets and in the same buildings, Puerto Ricans had a significantly higher prevalence of asthma (13%) than Dominicans (5%).[62] The reasons for these dramatic subgroup differences are still unclear but may be the key to greater understanding of asthma pathophysiology, prevention, treatment, and environmental and social correlates.

Latino children have disproportionately greater exposure to outdoor and indoor air pollutants,[63,64] hazardous waste sites,[65] pesticides,[64] lead,[66] and mercury,[67] which may place them at greater risk for morbidity and even premature death from asthma, lead poisoning, behavioral and developmental problems, and cancer.[64,68] For example, 34% of Latinos (vs 17% of blacks and 15% of whites) live in areas with elevated levels of airborne particulate matter,[63] which, if fine, are associated with risk of death from all causes and from cardiovascular and respiratory illnesses.[69] Three of the 5 largest hazardous landfills in the United States are in Latino and black neighborhoods, and the mean percentage of Latino and black citizens residing in areas with toxic waste sites is twice that for areas without toxic waste sites.[65]

Many unanswered questions remain. Which environmental factors are associated with the increased risk of asthma among Latino children? What are the short- and long-term health consequences of higher proportions of Latinos living next to hazardous waste sites? Are the increased incidences of certain childhood cancers (leukemia and gonadal germ cell tumors)[70] among Latinos related to their increased exposure to pesticides and other toxic chemicals?

The contribution of environmental exposures to childhood diseases is believed to be substantial. An expert committee convened by the National Research Council concluded that 3% of neurobehavioral disorders in children are due to environmental neurotoxins, and an additional 25% of these disorders result from interactions between environmental neurotoxins and individual genetic susceptibility.[71] Since Latino communities often are located in highly contaminated areas, it is possible that some Latino child health disparities may be the result of disproportionate exposures to environmental toxicants.

Health of Migrant Children

Children of migrant Latino farm workers are particularly at risk for suboptimal health and use of services and face additional unique health challenges because of their migratory status. Of the more than 1 million children who travel with their parents annually in pursuit of farm labor, 94% are Latino.[72] These children receive inadequate preventive care; experience high rates of infectious diseases, including tuberculosis, parasites, and sexually transmitted diseases; have inadequate preparation for school entry and low rates of school completion; have impaired access to appropriate day care, forcing parents to bring them to the fields, where they have increased risks of pesticide exposures and injuries; work as farm laborers often in unsafe working conditions; and are at risk for nutritional disorders, such as anemia, diabetes, failure to thrive, and obesity.[73] In addition, migrant Latino children's eligibility for Medicaid and the State Children's Health Insurance Program (SCHIP) is hindered by high interstate mobility and difficulties with residency and citizenship status.

There is an urgent need to more adequately address the health care and early education of migrant Latino children. Migrant health centers have the capacity to serve only 20% of eligible migrant children, and migrant Head Start programs serve only 15%.[72] Specialty, dental, and mental health care are beyond the reach of most migrant Latino children.[73] Despite the existence of the federally funded Migrant Health Program for almost 40 years, national data on the health of migrant children are lacking.[72,73]

Cross-Border Health

Important insights into social, economic, and policy determinants of health, outcomes, and use of health services can be gained from studies of adjacent populations separated by an international border. For example, a binational survey of depression and suicidality comparing Mexican American adolescents attending schools in Texas border cities with Mexican adolescents attending schools in neighboring Tamaulipas, Mexico, revealed that 48% of Mexican American students scored above the critical level for depression on a standardized scale compared with 39% of Mexican youths, and 23% of US adolescents reported current suicidal ideation compared with 12% of Mexican students.[74] More such cross-border studies need to be conducted on issues such as immunization coverage, prematurity and low birth weight, violence, and use of tobacco, alcohol, and illicit drugs.

Early Education, School Dropout, and Health

Latino youth by far have the highest school dropout rate in the nation, 29%, compared with 13% for blacks and 7% for whites,[75] a disparity that persists even after adjustment for socioeconomic status.[76] Latino children face difficulties in the educational system from an early age, with only 20% of Latino children younger than 5 years enrolled in early childhood education programs, compared with 44% of blacks and 42% of whites.[77] Although 36% of Latino children live in poverty, only 26% attend Head Start programs.[77] Disparities in performance begin as early as kindergarten, with a greater proportion of Latino children being held back in school, a major predictor of dropout in later years.[76]

The consequences of dropout for Latino youth include lower earnings, joining a less skilled workforce, increased unemployment, and greater demands on social services.[78] The impact of disparities in early education and school dropout on the health of Latinos is poorly understood but vitally important.

CULTURAL AND LINGUISTIC CONSIDERATIONS

Culture and language issues can profoundly affect Latino children's health and quality of care. Failure to consider these issues in clinical encounters can lead to a variety of adverse consequences, including decreased satisfaction with care, medical errors, difficulties with informed consent, inadequate analgesia, fewer prescriptions, and use of harmful remedies.[79,80] Unfortunately, cultural competency training still is not an integral part of the education of pediatricians, pediatric dentists, family physicians, or nurses. For example, no Canadian medical schools and only 8% of all US medical schools have separate courses addressing cultural issues,[81] and only 26% of US medical schools teach Latino cultural issues.[81] More research is needed on the most effective course content and structure for teaching cultural issues, along with formal evaluation of the effectiveness of various curricula.[82] In the meantime, given the substantial evidence that lack of culturally competent care can have a major impact on Latino children's health and health care,[79,80] the consortium recommends that cultural competency training be an educational component in health professions schools, residency programs, and continuing professional education.

Much could be learned from Latino culture about improving the health of all US children. A growing body of research documents that first-generation US Latino children have several excellent health outcomes and indicators that deteriorate with greater acculturation and each successive generation. For example, less acculturation is associated with significantly lower rates of low birth weight,[83] higher immunization rates,[84,85] less depression and suicidal ideation,[74] less cigarette smoking,[86] less illicit drug use,[87] and older age at first sexual intercourse.[88] These findings are particularly striking in light of data indicating that first-generation immigrant children have significantly decreased health care access and use.[89] Yet we have little understanding about what factors are responsible for this "healthy immigrant" effect. Such findings require that we abandon the traditional "deficit" view of Latino culture and its impact on health and adopt a more balanced perspective that emphasizes appreciation and understanding of the salutary components of Latino culture.

Language problems can have a significant impact on multiple aspects of the health care of Latino children, including access, health status, use of services, and outcomes.[79,80] In one study[8] of a pediatric primary care clinic, Latino parents cited language barriers as the single greatest barrier to health care access. Specifically, parents identified the lack of Spanish-speaking health care staff and inadequate interpreter services as the principal problems. Research documents that medical interpreters are frequently not called when needed, inadequately trained, or not available at all.[90] Recent work underscores that lack of adequately trained medical interpreters can result in increased medical errors: one study[91] found that an average of 18 interpreter errors of clinical consequence are made per pediatric encounter, with untrained interpreters making significantly more such errors than trained interpreters. Nevertheless, only 2 US states provide third-party reimbursement for medical interpreter services, and fewer than one quarter of hospitals nationwide provide any training for medical interpreters.[92] Recent federal and state initiatives to protect the rights of LEP patients and their families include a presidential executive order to improve access to services for LEP persons,[93] an Office of Civil Rights guidance memorandum prohibiting discrimination against LEP persons,[94] and the Massachusetts Emergency Room Interpreter Services Act.[95] Despite such initiatives, institutions and major medical associations have expressed reluctance to enact improvements in interpreter services and have gone as far as lobbying members of the US Congress to block these initiatives because of concerns about costs.[96] A 2002 report to Congress by the Office of Management and Budget, however, estimated that providing adequate language services to LEP

persons in the health care system would cost about $4.04 per visit.[97]

More research is needed on medical errors and adverse consequences associated with having untrained or no interpreters for LEP children and their families and the most cost-effective way to provide comprehensive interpreter services to LEP populations. The consortium recommends that, in areas where a substantial proportion of the population speaks Spanish, health professions schools consider offering Spanish language instruction. We also suggest that researchers and policy makers consider third-party payer reimbursement for trained medical interpreter services as an economically feasible means of improving the quality and reducing the cost of care for LEP families.

WORKFORCE ISSUES

Latinos are underrepresented at every level of the health care professions.[98] Although 16% of children younger than 18 years are Latino, only 3% of medical school faculty,[99] 5% of pediatricians,[100] 2.8% of dentists,[101] and 2% of nurses[102] are Latino. The Latino pediatrician-to-child ratio is expected to decrease from 17 Latino pediatricians per 100 000 Latino children in 1996 to 9 per 100 000 by 2025.[103] Analyses indicate that to achieve parity with future ethnic changes in the US population, our nation would need twice as many Latino physicians,[104] but there has been a recent decrease in minority medical school enrollment, especially in states with large Latino populations that have banned affirmative action policies (California and Texas).[105] These trends are particularly alarming because studies document that Latino communities are substantially more likely to have physician shortages,[106] Latino physicians are significantly more likely to care for Latino and uninsured patients,[106] and Latino patients are more likely to be satisfied with health care from Latino vs non-Latino physicians.[107] Additional research is needed on the most effective ways of increasing the numbers of Latino health professionals and faculty at health professions schools.

HEALTH CARE ACCESS AND QUALITY

Lack of Health Insurance

Latinos are more likely to be uninsured (27%) than any other ethnic group of US children.[108] In comparison, 9% of white, 18% of black, and 17% of Asian/Pacific Islander children are uninsured.[108] About 3.2 million Latino children lack health insurance.[108] For poor Latino children, lack of health insurance is an even greater problem: one third are uninsured, despite eligibility of most for Medicaid and SCHIP.[109] Among uninsured poor US children, Latinos outnumber all other racial/ethnic groups, including whites. There are 1.1 million poor uninsured Latino children compared with 806 000 white, 703 000 black, and 95 000 Asian poor uninsured children.[109] The US Congress enacted SCHIP in 1997 with a 5-year investment of more than $20 billion. Although 1999 marked the first time in many years that the proportion of uninsured Latino children actually decreased (from 30% to 27%),[108] recent national data suggest that outreach efforts to enroll Latino children have largely been unsuccessful.[110] A Kaiser Commission report[110] found that only 26% of parents of eligible uninsured children said that they had ever talked to someone or received information about Medicaid enrollment, and 46% of Spanish-speaking parents were unsuccessful at enrolling their uninsured children in Medicaid because materials were unavailable in Spanish. Additional research is needed on identifying the most effective interventions for outreach and enrollment of uninsured Latino children, particularly those who are poor, are noncitizens, and have noncitizen, LEP, or migrant worker parents.

Access Barriers to Health Care

A comprehensive literature review revealed 22 access barriers to health care frequently encountered by Latino children, including poverty, low parental educational attainment, transportation problems, excessive waiting times in clinics, decreased preventive screening, receipt of proportionally fewer prescriptions, language problems, cultural differences, lack of health insurance, and lack of a regular source of care.[111] For example, 30% of Latino children live in families with annual incomes below the federal poverty level (second only to black children, at 33%),[112] and 37% of Puerto Rican children live in poverty, making them the most impoverished racial/ethnic group in the United States.[113] Important unanswered questions include: What are effective interventions to reduce or eliminate such formidable barriers and What are the health trajectories of Latino children with impaired access to care?

Disparities in the Quality of Health Care

Several studies document that Latino children frequently receive a lower quality of health care. Among children with gastroenteritis evaluated at a major children's hospital, Latinos were significantly less likely than whites and blacks to undergo diagnostic laboratory tests and radiographic examinations.[13] Among preschool children hospitalized for asthma, Latino children were 17 times less likely to be prescribed a nebulizer for home use at discharge, even after adjustment for relevant confounders.[12] In a study of children and adults hospitalized for open reduction and internal fixation of limb fractures, researchers found that whites received significantly higher doses of narcotic analgesics (22 mg/d of morphine equivalents) than blacks (16 mg/d) and Latinos (13 mg/d), differences that persisted after adjustment for relevant covariates.[11] Studies such as these suggest that we may need to develop new conceptual frameworks and techniques for measuring quality of care for Latino children. Evaluation of medical errors, for example, will need to consider the role of language barriers and medical interpreter errors, sources of compromised quality that traditionally have not been measured.

CONCLUSIONS

In conclusion, the 2000 census[1] documents that Latinos are the predominant racial/ethnic minority group of US chil-

dren, representing 1 of every 6 US children. It is time for our health policies, services, and research to address this dramatic demographic change, which the consortium believes will be accomplished through (1) greater inclusion of Latino children in medical research, (2) analysis of study data by pertinent Latino subgroups, (3) more research on Latino child health issues that can elucidate social and economic determinants of health and use of health services for all children, such as cross-border health and the healthy immigrant effect, (4) enhancing early educational opportunities for Latino children, (5) training health care professionals more extensively in cultural competency, (6) increasing the number of Latinos in health care professions, and (7) eliminating disparities in access to care, mental health, immunization coverage, oral health, quality of care, and environmental health.

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