

# Beyond Access: The Role of Family and Community in Children's Oral Health

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*Abstract:* Children's health outcomes result from the complex interaction of biological determinants with sociocultural, family, and community variables. Dental professionals' efforts to reduce oral health disparities often focus on improving access to dental care. However, this strategy alone cannot eliminate health disparities. Rising rates of early childhood caries create an urgent need to study family and community factors in oral health. Using Los Angeles as a multicultural laboratory for understanding health disparities, the Santa Fe Group convened an experiential conference to consider models of ensuring child and family health within communities. This article summarizes key conference themes and insights regarding 1) children's needs and societal priorities; 2) the science of child health determinants; 3) the rapidly changing demographics of the United States; and 4) the importance of communities that support children and families. Conference participants concluded that to eliminate children's oral health disparities we must change paradigms to promote health, integrate oral health into other health and social programs, and empower communities. Oral health advocates have a key role in ensuring oral health is integrated into policy for children. Dental schools have a leadership role to play in expanding community partnerships and providing education in health determinants. Participants recommended replicating this experiential conference in other venues.

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In June 2006 the conference "The Life of a Child: The Role of Family and Community in Children's Oral Health" was convened in Los Angeles, California, by the Santa Fe Group (SFG) and hosted by the University of Southern California School of Dentistry. Supported by an interested group of professional organizations and businesses and cochaired by SFG members Slavkin and Mouradian, this conference was designed to widen the lens on children's health disparities by engaging the broader range of biological, environmental, social, and cultural determinants impacting children's health and well-being, including their oral health.<sup>1</sup>

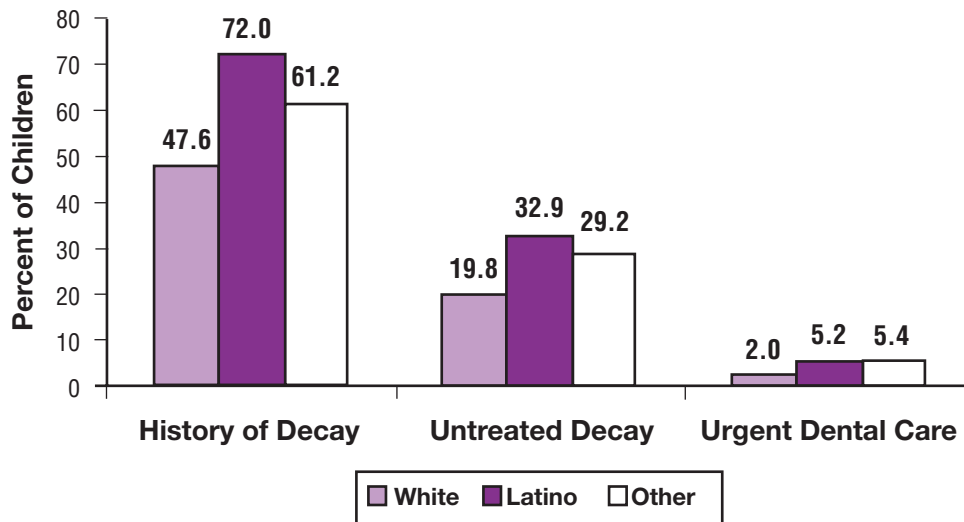
Specifically, the purposes of this conference were to provide a scientific framework for children's oral and general health that recognizes their direct relationship to the family and community environments and to expose the invited interdisciplinary audience

to models for health promotion in community programs directly confronting health disparities. Hoped for outcomes from this conference also included increased participation of dental schools and faculty in experiential learning and in community partnerships for education, service, research, and evaluation and greater utilization of models of providing oral health care that build on community assets and social capital. This article discusses the four key conference themes and provides summary insights from plenary sessions and community site visits, with implications for oral health advocates, policymakers, and dental academicians.

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## Key Conference Themes

In 2000, *Oral Health in America: A Report of the Surgeon General*<sup>2</sup> and "The Face of the Child:



**Figure 1. Oral health of kindergarten and third-grade children by race and ethnicity**

Source: Reprinted with permission from California Dental Foundation. The California smile survey, February 2006. At: [www.dental-healthfoundation.org/topics/public/For%20web/DHF\\_2006\\_Report\\_tryfix1.pdf](http://www.dental-healthfoundation.org/topics/public/For%20web/DHF_2006_Report_tryfix1.pdf). Accessed: February 13, 2007.

Surgeon General's Conference on Children and Oral Health<sup>3</sup> increased awareness of health disparities among children from low-income and minority families or with special health care needs such as developmental disabilities. Many follow-up activities were initiated among oral health professionals and professional organizations, in academic institutions, and by government agencies, nonprofits, and industry stakeholders. Despite these efforts, recent surveillance data<sup>4-6</sup> show increasing levels of dental disease among young children, with persistent disparities for disadvantaged groups. In California, for example, poor children and those of color have higher rates of decay and untreated disease than white children (Figure 1). This situation creates an urgent need to rethink our approaches to children's health disparities in general. Four themes explored in this conference can inform innovative solutions: 1) children's needs and our common social and moral responsibilities towards them; 2) the science of child health determinants; 3) the rapidly changing social and demographic character of the United States; and 4) the importance of communities that support children and families.

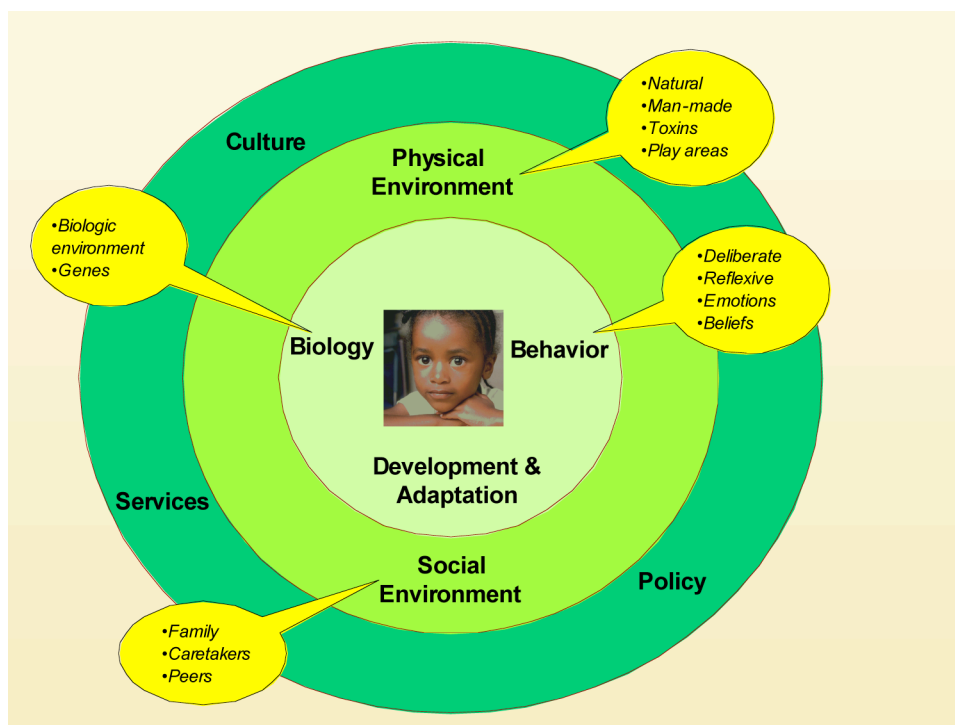
## Children's Needs and Societal Priorities

Policymakers have long recognized that children's vulnerability and dependence on adults require special measures to ensure their health needs are met. For example, Medicaid's Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit program of services includes both medical and dental care with oral health screening and referrals to dentists, all follow-up care, health education, and assistance for families in scheduling and getting to appointments.<sup>7</sup> Although the effectiveness of EPSDT has been limited by many factors,<sup>8,9</sup> this model of comprehensive health care for children recognizes that their developmental processes are vulnerable to untreated diseases, including oral diseases, making disease prevention, early identification of high-risk children, and timely interventions critical.<sup>10,11</sup> Explicit coverage of health education and assistance for parents recognizes children's dependence on their caretakers to understand and act upon oral health recommendations and to access health services, including dental care.

At its core, this policy acknowledges that children experience profound impacts from their environment and family circumstances and that, for disadvantaged children, outreach is necessary to ensure they receive services, including dental care. Implicit in this policy is also the notion that society has an investment in and responsibility for children and their future and that it can accord special measures to ensure their well-being. The financial and humanitarian benefits of this position reflect deep underlying values rooted in our democracy—values that transcend partisan politics. Indeed, all major philosophical approaches to justice are consistent with special efforts to prioritize children’s needs.<sup>12,13</sup> The disparities in children’s oral health and access to dental care in the United States accentuate our shortcomings in realizing these shared values.<sup>14</sup>

## Science of Child Health Determinants

Since the creation of the landmark EPSDT legislation, new science has expanded our understanding of the interaction of the early environment and the child’s biological and developmental processes. In 2000, the Institute of Medicine (IOM) and the National Research Council (NRC) commissioned *From Neurons to Neighborhoods: the Science of Early Childhood Development*<sup>15</sup> to review the last three decades of research in child development, including the neurobiological, genetic, social, and behavioral sciences. Authors of this report concluded that children’s health and other psychosocial outcomes are inextricably linked to their early social and physical environments. Levels of influence move from the child to family/caretakers, school/peers, community, and society (see Figure 2). Child level factors



**Figure 2. Determinants of child wellness**

Source: Reprinted with permission from Kipke M. From neurons to neighborhoods: determinants of child wellness. Paper presented at Santa Fe Group Conference, “The Life of a Child: The Role of Family and Community in Children’s Oral Health,” Los Angeles, California, June 19-21, 2006.

include genetic and inborn characteristics such as temperament and behavior, which then interact with the environment and culture as the developing child adapts to his or her surroundings. Child health and development are shaped by a highly complex and continuous interaction between biology (nature) and experience (nurture).

While the importance of social and environmental influences for a child's development has long been recognized by practitioners and researchers,<sup>16,17</sup> *From Neurons to Neighborhoods* collected scientific information on these interactions and brought this essential information to the attention of policymakers. In a follow-up report, *Children's Health, the Nation's Wealth*,<sup>18</sup> the IOM reviewed how we are monitoring children's health and well-being in order to bring these indicators to policy decisions. This report recommended improvements in measurement systems to provide a solid foundation for analysis and action related to child health. The IOM has also applied a similar social ecological model to understand the distribution of disease and illness experienced by adults.<sup>19</sup>

The first environment the child experiences is the prenatal environment. Adequate maternal nutrition at the time of conception and throughout the pregnancy is important to child health outcomes. Conference plenary speaker Williams discussed the vulnerability of the developing brain to nutritional status, infections, immune responses, and toxins.<sup>20</sup> For example, mothers on a maize (corn)-based diet, common in many Latino families, may be deficient in docosahexaenoic acid (DHA), a key nutrient for brain development. Because DHA is received from mothers in the last trimester, premature infants may miss out on this essential fatty acid. Periodontal disease increases maternal cytokines, which may lead to poor placental function and subsequent fetal undernutrition or other adverse pregnancy outcomes. Alcohol exposure during pregnancy is related to fetal alcohol syndrome and other profound neurological deficits that have wide-ranging individual, family, and societal impacts. These intrauterine factors can combine with genetic predisposition to affect birth outcomes, subsequent neurological development, and long-term health outcomes.

Community and cultural factors can also affect maternal and child health. In a graphic demonstration of this, Kipke presented a geospatial map of fast food vendors in one multiethnic Los Angeles County neighborhood.<sup>21,22</sup> There were ninety-two such vendors in this four square mile area—many near schools. By contrast, grocery markets were mostly

small stores, with few stocking fresh produce, and larger markets were not conveniently located for the population of this neighborhood. Geospatial mapping also revealed few parks and safe spaces for exercise and play in many low-income areas. Poor access to healthful food and safe places to exercise are some of the community-level barriers individuals and families face in trying to make healthy choices. Other factors affecting food choices include higher costs of more healthy foods and cultural dietary preferences. These factors impact many health conditions including obesity, diabetes, and dental caries, all of which are more prevalent among lower socioeconomic groups.

## Changing Social Context in the United States

As these examples suggest, socioeconomic and demographic factors present major challenges to achieving optimal child health outcomes. About 18 percent of U.S. children live in poverty (in 2005, the federal poverty level was \$19,350 for a family of four; low income is defined as  $\leq 200$  percent of poverty. At: <http://aspe.hhs.gov/poverty/05poverty.shtml>. Accessed: February 10, 2006). This is almost twice the rate for adults.<sup>23</sup> A total of 40 percent of children live in “low-income” families—the level considered necessary to meet the basic necessities of children.<sup>24</sup> The increasing diversity of our country is evident in the latest census figures: 33 percent of the United States as a whole and 45 percent of children under age six are from minority backgrounds.<sup>25,26</sup> Children from racial and ethnic minorities are more likely to be poor and to experience disparities in health outcomes and access to care. Immigrant families often face additional cultural, linguistic, and educational barriers to accessing health and social services. Beyond this, an increasing number of American children are cared for in nonparental arrangements. The impact of demographic factors on child well-being can be seen in the list of four factors that identify children most at risk for educational difficulties, discussed by conference speaker Gallagher:<sup>27</sup>

- living in poverty,
- having a single parent,
- having a mother with less than a high school education, and
- living in a family that does not speak English.

To provide the context for the experiential learning aspect of the conference, the Santa Fe Group convened this conference in Los Angeles, a large multicultural urban area of 10.2 million people,<sup>28</sup>

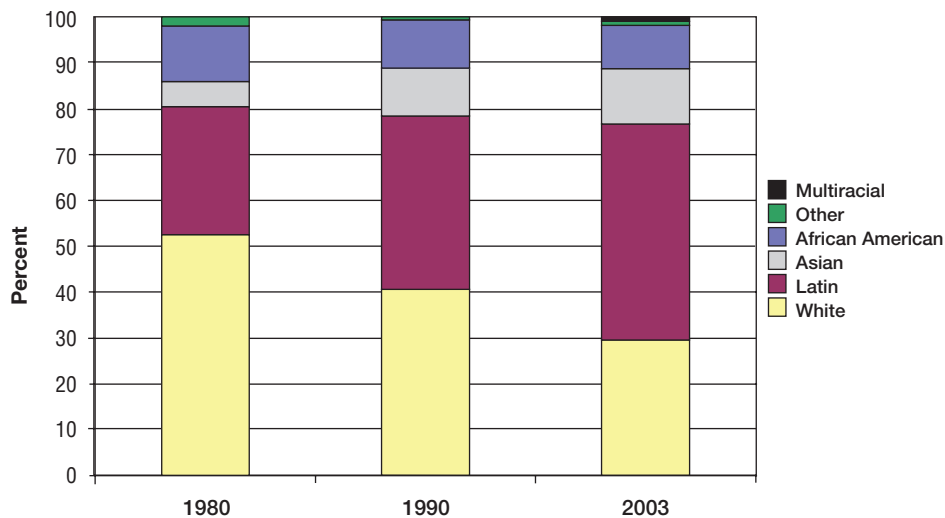
where demographic shifts have been accentuated. The overall poverty rate in Los Angeles County (LAC) is 17.7 percent compared with a national rate of 12.5 percent.<sup>29,30</sup> The child poverty rate in LAC is 24.2 percent, and the proportion of children from low-income families is 49.4 percent<sup>31</sup> (compared with 18 percent and 39 percent, respectively, at the national level<sup>23</sup>). High rates of immigration and differential birth rates have resulted in a “minority” population of 70 percent (Figure 3).<sup>32</sup> More than half of LAC residents speak a language other than English at home, and of the more than 220 languages and dialects spoken, many are without written lexicons. An estimated 2.5 million residents in California are undocumented, and many live in the LAC area.<sup>33</sup>

While some LAC immigrant communities may be stable, others are challenged by deportations of parents that leave children stranded. Another problem is the arrival of immigrant children without parents or other family members to accept them. A recent Pulitzer Prize-winning article in the *Los Angeles Times* chronicled the life of “Enrique,” one of an estimated 48,000 children who enter the

United States by themselves each year.<sup>34</sup> The influx of children like Enrique and other homeless children and families contributes to social fragmentation and presents additional obstacles for those working to promote child health. Although demographic trends are accentuated in LAC, many urban and rural areas around the country are experiencing similar shifts with attendant problems.

## The Importance of Communities That Support Children and Families

Successful programs that address community and family needs engage residents in identifying problems and solutions and building social capital. Much has been learned from the work of McKnight, Kretzmann, and others on building communities from the “inside out.”<sup>35,36,37</sup> Their work affirms that empowering communities and aligning resources with existing strengths can result in meaningful change; such efforts go beyond the common deficit analyses of communities in need. The term “social capital” refers to the “features of social organization



Note: Multiracial category unavailable prior to 2000.

Figure 3. Racial and ethnic distribution of Los Angeles County's population, 1980, 1990, and 2003

Source: Reprinted with permission from Los Angeles County, Public Policy Institute of California. Just the facts, March 2005. At: [www.ppic.org/content/pubs/jtif/JTF\\_LACountyJTF.pdf](http://www.ppic.org/content/pubs/jtif/JTF_LACountyJTF.pdf). Accessed: February 13, 2007.

such as networks, norms, and trust, which facilitate coordination and cooperation for mutual benefit.”<sup>38</sup> Healthy communities have such features, according to conference speaker McCroske, and healthy communities are needed to support families and keep children safe.<sup>39</sup> It is possible to enumerate the specific assets a community might build (e.g., access to health and parenting information, child and family-friendly library, parks and recreation programs, family-responsive child welfare agencies), as well as global and specific indicators of “success” (e.g., school retention rates, drops in youth crime, child abuse rates, satisfaction of families using child welfare services, social capital index, children’s readiness for school, etc.).

Indeed, population health may depend as much or more upon social structure and social capital as upon individual health risk factors.<sup>40,41</sup> Provocative research—such as the study of the health status of two Pennsylvania communities that differed primarily in measures of social cohesion—shows the effect of social factors on health outcomes can be dramatic.<sup>42,43</sup> The cumulative research on social structure indicates that more attention needs to be focused on the role of social structure and community in causal models of health outcomes in addition to an individual’s health risk factors.<sup>44</sup>

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## Community Site Visits

To experience innovative models that address child and family health at the local level, conference participants visited one of six community sites, each showcasing a different approach to health change at the community level. The projects spanned a variety of missions and targeted populations from comprehensive health care, rehabilitation and vocational preparation for homeless, substance-affected individuals and families (Union Rescue Mission)<sup>45</sup> to dental programs for children at school (USC Neighborhood Mobile Dental Clinic Program<sup>46</sup> and the QueensCare oral health program at Evelyn Thurman Gratts School).<sup>47</sup> Some programs train lay health workers to work with pregnant women and mothers, while advancing participants’ health and wellness and educational and vocational skills (Central City Neighborhood Partners Women and Community Promotora Health and Leadership Program<sup>48</sup>). Others are creating co-located medical, dental, and social services for populations with unique cultural

and social needs (the Korean Health Education and Information Research Center, KHEIR).<sup>49</sup> One community site (The Children’s Dental Center) has taken a creative educational approach to promoting oral health in children and families with the “Tooth Fairy Cottage”—a home environment in which children get used to dental chairs, practice oral hygiene skills, and learn about healthy food choices.<sup>50</sup> Many programs serve undocumented children and families, which can create barriers to establishment of trust and to measurement of program outcomes.

At each site, conference participants sought to understand target populations, program goals, partners, stakeholders, funding sources, leadership and management, and staffing issues. Participants also inquired about outcomes to date, challenges, replicable aspects of the programs, and sustainability. Each group had the benefit of working with a professional facilitator utilizing methods from Coro, a nonprofit organization dedicated to preparing individuals for effective and ethical leadership in public affairs.<sup>51</sup> Participants expressed the value of this experiential learning beyond any single lesson learned, including the opportunity to meet directly with community representatives in their own settings. Common observations and insights from community site visits included:

1. the wide range of needs of underserved populations (e.g., food, shelter, safety, health care, education, job opportunities, career counseling),
2. the powerful impact of restoring oral health for destitute individuals (oral health can be the “best mental health” for a homeless person),
3. the importance of cultural and linguistic competency in establishing trust and the benefits of employing community members as staff,
4. the role of a strong mission/vision, religious, or other belief system in initiating and sustaining a program, and
5. the importance of continuity of leadership and funding to sustainability of programs.

Natural next steps for programs identified by conference attendees and community representatives in small group and plenary discussions included:

1. development of additional outcome measures,
2. expansion of academic partnerships to include research and evaluation,
3. increased integration of oral into overall health in more programs, and
4. exploration of collaborative funding initiatives (i.e., private-public initiatives including opportunities for federal government sponsorship).

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## Integrating the Lessons from Conference Themes and Community Visits

### Building Blocks for Optimal Child Health

Gathering the lessons from the Santa Fe Group conference presentations and site visits, it is possible to articulate the building blocks for optimal child health beyond access to health care. These include a multitude of variables from healthy prenatal environments to sound postnatal nutrition; from nonexploitive and caring early relationships to safe neighborhoods and places for youth recreation; and from well-thought-out educational programs to supportive social networks and communities. Health practitioners, child advocates, and policymakers will have to move beyond the scope of usual health professional activities to make the next strides in improving children's oral and general health. Traditional treatment modes emphasizing personal behavior change can have little impact if not considered in the larger social and community context. This comprehensive view calls for a new definition of child health—as recommended by the IOM—that goes beyond the usual indicators.<sup>18</sup> It underscores the fact that children's health cannot be separated from their cognitive, physical, and emotional development and that these cannot be separated from their family and sociocultural experiences. For oral health advocates, this will mean partnering with others in child and family advocacy to work towards this larger vision of family and community wellness, while ensuring oral health is integrated into these efforts. Each of the programs visited illustrated an appreciation of the interaction of health and community-level factors.

### Funding Community Projects and Related Research

To promote child health as part of family strengths and community assets requires answering several key questions: 1) how can innovative community-based projects be planned and funded; 2) how are they best evaluated; and 3) how can successful programs be disseminated and their results replicated. The nature of community-based programs often makes rigorous evaluation difficult: health needs

are often urgent, especially children's, and priorities must focus on pressing issues. Projects may be started with a mandate to provide help immediately and universally, which is at odds with the rigorous designs and planning needed for outcome studies. Finally, those working at the community level may not have the expertise, inclination, or additional resources needed to conduct research. As a result, relatively few community projects have generated data to apply to other settings or testable hypotheses to advance the science and inform policies.

Yet it is critically important to support community-based projects and gather the evidence of their success so that effective programs can be disseminated to other communities in need. Evaluation of community-based projects can be funded by private or public entities or both, including partnerships with academic researchers. The community projects visited during this conference had relationships with one or more academic centers with dental schools, primarily for clinical and educational goals; these partnerships could be deepened with research and evaluation objectives in mind. Community Partnerships for Health, an organization dedicated to promoting academic-community partnerships,<sup>52</sup> has recently released an online curriculum promoting skills in community-based participatory research.<sup>53</sup>

Community-based efforts are typically supported by a combination of private and public support from child health and welfare agencies or other government entities. Alliances of this kind are necessary to improve impact, but coordination is necessary, especially in an area as large as LAC, to avoid problems arising from miscommunication and fragmentation of services. Specific means to improve coordination and collaboration among private and public funders and agencies were discussed by McCroske<sup>39</sup> and include providing shared vocabulary and knowledge and interprofessional experiences early in training to promote collaboration across organizational boundaries. Examples of large alliances addressing child health issues were provided by conference speaker Cousineau<sup>54</sup> and include Covering California's Kids Coalition<sup>55</sup> and the Los Angeles Collaborative for Healthy, Active Children, consisting of 100 stakeholder organizations.<sup>56</sup>

Examples of federal programs relevant to children's oral health disparities include the Centers to Reduce Oral Health Disparities from the National Institute of Dental and Craniofacial Research (NIDCR)<sup>57</sup> at the National Institutes of Health; potential new initiatives at NIDCR to promote oral health of

pregnant women and children; interdisciplinary initiatives (the NIH roadmap<sup>58</sup>); and a host of programs within key federal agencies of the Department of Health and Human Services (DHHS). These include programs funded by the Health Resources and Services Administration, particularly the Maternal and Child Health Bureau (MCHB)<sup>59</sup> (e.g., Healthy Tomorrows program<sup>60</sup>); the Centers for Disease Control and Prevention (e.g., the best practices for state and community projects with the Association of State and Territorial Dental Directors);<sup>61</sup> Task Force on Community Preventive Services systematic review of community-based oral health programs<sup>62</sup>); the Administration for Children and Families (Head Start);<sup>63</sup> and the U.S. Department of Agriculture (WIC, the Women, Infants, and Children Program<sup>64</sup>).

Obstacles to advancing federal efforts to focus on child health in the context of family and community, according to conference presenter Kleinman,<sup>65</sup> are found at the interface of the child-family-community factors with the relevant federal programs. Collaboration and coordination challenges on the federal side of this equation include the size and diversity of federal agencies and the disease-specific, population-focused mission or legislative funding of many federal entities. There are examples of DHHS federal efforts directed at increasing collaboration (e.g., cooperative agreements between the MCHB and Head Start; the trans-agency Oral Health Coordinating Committee<sup>66</sup>), and more are needed. However, while DHHS has the mandate to protect the health of the public, family and community factors cross many other federal agencies as well, such as the Departments of Health, Education, Labor, Justice, and Commerce. Finally, the complexity of disparities research and the time needed to mount community partnerships require federal funding longer than usual lengths of time to achieve substantive progress.

## Philosophical Issues in Funding Community Initiatives

At a more fundamental level, adopting a broader perspective on child health challenges current views on societal responsibility for children. To quote from *From Neurons to Neighborhoods*,<sup>15</sup> “As a public issue, questions about the care and protection of children confront many of the basic values that have defined our country from its founding—personal responsibility, individual self-reliance, and restrained government involvement in people’s lives.” The report calls for “rethinking of shared responsibility for

children and strategic investment in their future.” This perspective will need broad public support if society is to act on the scientific evidence on children’s health outcomes with more government involvement. Although major theories of justice are consistent with the need for special measures to address children’s health, moving this agenda forward into policy will require additional pragmatic arguments.

One pragmatic incentive for the federal government to take more action in the area of family and community determinants of child health outcomes is to obtain a more successful return on its investment. For example, government-funded research has documented the oral health status of children and developed effective interventions to prevent or treat oral diseases and promote oral health. Now the federal government has the imperative to actively coordinate and stimulate action in these areas. Healthy People 2010 provides a set of oral health objectives towards which to strive.<sup>67</sup> Compelling reasons to achieve Healthy People 2010 objectives are that oral health affects children’s overall health and well-being. For example, unprevented or untreated oral diseases and conditions in children may affect their ability to learn and their social development and cause them unnecessary pain and discomfort. While it may be difficult to demonstrate directly that alleviating these consequences could lower the federal costs of promoting child health, there are other economic, social, and ethical justifications for taking these steps. Perhaps the strongest moral reason to prevent disease and promote children’s health is to ensure a vital and healthy future for the country.

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## Conclusions and Recommendations

Thoughtful analysis calls us to reconsider our approaches to children’s health and revise efforts to improve child health in the context of the family, culture, and community. The number of children at risk for persistent health disparities from minority and low-income families is huge: almost half of the future workforce. The human and societal consequences of such disparities are enormous, and the need to prevent them is urgent. To succeed in alleviating health disparities, we must deliberately embrace new paradigms that emphasize 1) oral health as part of overall health at the level of the individual child, family, community, and society; 2) health promotion



and wellness, not just absence of disease; 3) family and community empowerment as critical to improving children's health and future lives; and 4) health professional efforts that include access to care but also reach beyond access to care to embrace a multifactorial model of health determinants. Oral health advocates and academicians will need to partner broadly across health sectors and with communities to bring about these needed changes.

As determinants of health exist at all levels of the child's social ecology, so do points of leverage to improve the child's oral and overall health. While the full scope of interventions and policy options is beyond the scope of this report, we identify the following priorities for action at the level of individuals and families, communities, and policy to promote children's oral health. These recommendations are based on conference discussions and plenary speaker presentations. (The reader is also referred to the two IOM reports for detailed discussions of policy options and appropriate measurement indicators to track child health outcomes.<sup>15,18</sup>)

**1. At the level of individual health services, integrate oral health into primary care medical and other health and social services in culturally appropriate ways:**

- Integrate oral health into primary care settings so nutrition and oral health education is provided routinely to youth and women of child-bearing age (include oral hygiene, tobacco and alcohol avoidance, potential dietary supplements for women in need);
- Include oral health counseling and referral as part of routine prenatal medical care;
- Provide information about dental care of mother and infant and dental services to new mothers as part of routine perinatal medical services;
- Provide oral health and nutrition information to underserved women and families with culturally appropriate lay health workers (e.g., Promotoras);
- Utilize patient-centered counseling approaches that have demonstrated success in diverse, underserved populations (e.g., motivational interviewing);<sup>68</sup>
- Offer oral health screening, education, and referral for dental care at school-based health clinics; and
- Sponsor implementation of innovative models to increase access to dental services (e.g., mobile dental services at school sites, training of general dentists in the care of low-income infants and children [Access to Baby and Child Dentistry, ABCD<sup>69</sup>], and culturally appropriate and child-

friendly dental offices that emphasize prevention to serve as "dental homes"<sup>70</sup>).

**2. At the community level, integrate oral health into other community-level goals that aim at developing social capital and safe communities:**

- Add oral health indicators (e.g., parents' oral health literacy; oral health as part of school health and readiness indicators; daycare workers' knowledge of sound nutrition and oral health practices; etc.) to existing indicators of community and family characteristics that impact child health and safety;
- Include oral health in community efforts such as home-visiting programs, birth-to-three programs, and school readiness assessments, including for low-income children and those with neurodevelopmental disabilities and other special health care needs (CSHCN);
- Join with other health and social services to establish and maintain as training sites co-located, integrated dental, medical, and social service programs within communities in greatest need;
- Ensure oral health is a part of child welfare and foster care programs whenever health issues are addressed; and
- Support community efforts to ensure individuals of all ages have access to healthy food and children have safe places to play.

**3. At the policy level, broaden definitions of child health and health indicators to reflect science of health determinants, incorporate oral health into these measures, and coordinate efforts at the federal level:**

- Adopt a definition of child health that goes beyond the absence of disease. For example, the IOM/NRC recommends defining "child health" as "the extent to which an individual child or groups of children are able or enabled to a) develop and realize their potential; b) satisfy their needs; and c) develop the capacities that allow them to interact successfully with their biological, physical, and social environments."<sup>18</sup> The IOM/NRC further subdivides child health into domains of health conditions, functioning, and health potential;
- Monitor each of the domains of children's health defined above (health conditions, functioning, and health potential) by developing better indicators as recommended by the IOM/NRC;<sup>18</sup>
- Ensure oral health measures are incorporated into this framework and outcome measures;
- Designate a specific Health and Human Services (HHS) unit with a focus on children to develop, coordinate, standardize, and validate data across

the multiple DHHS data collection agencies and bring the data to policymaking, as outlined by the IOM/NRC;<sup>18</sup>

- Ensure coordination across oral health programs, and with other health programs, at the federal level so they are maximally effective. Consider creation of a National Oral Health Task Force to establish national policies through inter- and intra-agency agreements and to coordinate efforts of the various oral health programs at the federal level;
- Ensure oral health is consistently included in all existing health, education, and welfare programs that support mothers, infants, and children. For example, consider integrating oral health with the family nutrition goals of prenatal classes, Early Head Start, Head Start, WIC, and school programs; and
- Encourage oral health advocates to join the larger community of child and family advocates to ensure the inclusion of oral health goals among other policy objectives (an essential step given the traditional separation of oral and general health and the omission of oral health from many policy arenas).

**4. Within the dental academic community, provide leadership in addressing children's oral health disparities.** Many opportunities exist to impact children's health at the individual, family, and community level through education, service, and research missions. Specific actions to consider include:

- Educate dental students on the health determinants starting in early years of dental school;
- Require dental students to become involved with community-based programs and service-learning activities starting in the early years of dental school;
- Ensure that dental students learn about the unique characteristics of children and how these factors increase their moral responsibilities as health professionals;
- Encourage dental students to participate in interprofessional, community-based volunteer and outreach efforts with colleagues from medicine, social work, nursing, public health, pharmacy, etc., and in projects at non-dental locations;
- Expand academic partnerships with community-based programs to develop evaluation and outcome measures;
- Expand research partnerships with communities to address health disparities; and
- Replicate the Santa Fe Group-type of experiential conference and allow more dental faculty and researchers to experience and discuss the many

factors contributing to health disparities and organize continuing dental education activities with similar goals.

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