

From the Mouths of Babes:

**Revelations from the
Oral Health of Connecticut's
Urban Poor Preschoolers**

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This paper was developed on behalf of the Connecticut Oral Health Initiative in its ongoing work to highlight the importance of children's oral health and its ongoing efforts to improve the oral health and dental care of vulnerable individuals and populations across the state. This paper is based on findings reported in an October 2003 COHI document, *Results of the CT Oral Health 0-3 Survey and Screening Project* prepared by Tara McLaughlin PhD of the Hartford Hospital Research Program. The purpose of this paper is to further interpret that earlier report by relating the findings of surveyed children to the condition of children in Connecticut and the nation as reported in the medical literature, and reports by government and professional associations.

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Oral Health of Connecticut's Urban Poor Preschoolers

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From the moment of birth, each child's physical condition tells a unique story – a story of biology, social opportunities and constraints, risk factors and protections from disease, individual experience, parental empowerment, and more. While almost all children at birth have tremendous *potential* to be healthy, to grow normally, and to function well, their *actual* health condition will reflect the imprint of social and environmental conditions as much as by the imprint of physical and genetic factors.

Known correlates of disease include the child's race, ethnicity, family income, family structure, level of parental educational attainment, and parental and family health behaviors. Differences between children's situations in these underlying factors play out as consequential disparities in both their health and the healthcare they receive as early as the preschool years. These differences tend to increase over the lifespan, especially for chronic conditions like common dental and oral diseases. Many of these health-determining factors are interrelated and co-dependent. Poverty, however, is the sentinel marker for a host of other factors that limit opportunity. Racial and ethnic minority children are more likely to be poor and poor children are more likely to be living in single parent families, to have parents with limited educational attainment, to face negative housing and environmental exposures, and to have less access to comprehensive health services¹. Poverty is also consequential to young children's *oral* health and access to basic *dental* care. Among U.S. preschoolers, for example, children of poverty have five times the odds of having decayed teeth², 3.5 times greater extent of decay when they have this disease³, and twice the dental pain experience⁴ compared with their more affluent peers. Yet they are also twice as likely to have dental insurance, primarily through Medicaid⁵, but, ironically, only half as likely to obtain a dental visit in a year⁶.

Just as each child is unique, small groups of similarly-situated children may typify a class of individuals who share common experiences and opportunities. This understanding is the basis for our legal system's "class" actions in which small numbers of individuals are deemed by the court's review of evidence to represent a much larger group of people. Similarly, a small number of children can represent a class of their peers. Such is the case of 83 preschool children residing in Connecticut's urban, low-income, largely minority communities whose family situation, oral health condition, and risk factors for early-onset dental disease were examined by "COHI" – the Connecticut Oral Health Initiative⁷. This group of children is a mixed assemblage of 83 urban infants, toddlers, and preschoolers -- children who were not selected for any particular reason other than their accessibility to COHI investigators. Yet these children represent 83 individual lives, lives

that are lived in Connecticut's urban corridors – lives that are typically not considered by the tens of thousands who daily transit those same corridors to hubs of commerce, employment, legal services, and medical care. These are young children who often go unnoticed at an age when many influential and modifiable factors are shaping their future. This report of their lives, their oral health, and their dental care is analogous to the image obtained by the flash of a quick snapshot taken by a passerby while traveling through a distressed urban area. Such a snapshot tells an unequivocal story that belies the oral health situation of the next generation of those who live in our urban communities.

This report provides a context for understanding these 83 children by comparing their individual circumstances and oral health conditions to the circumstances and conditions of all young children in CT and the U.S. In so doing, it highlights their situation and provides COHI activists with a visceral sense of their needs. This information propels COHI's ongoing efforts to improve the oral health and dental care of all of Connecticut children. It serves as a stimulus to redouble efforts to assist the most dependent, vulnerable, and disadvantaged who live their daily lives too often unseen among us.

Who are these 83 children?

One-fifth infants, two-fifths toddlers, and one-fifth preschoolers, these young children are primarily from the inner-neighborhoods of our Capitol city, Hartford. An additional fourth of these children reside in New London and Stamford, cities that also contribute to the urban corridors of the State. Cities that comprise these corridors – while constituting only a small proportion of the State's 166 communities – are home to over half of all of the State's children. And these particular young children are markedly different from Connecticut's "mainstream" population of children who reside outside of these pockets of poverty.

Connecticut's urban townships are home to some of the State's poorest children. Half of the families of these 83 children make-do on less than 1 dollar for every 5 dollars available to the "average" Connecticut family. Sixty-two of the 83 children live in families with annual incomes less than \$27,500 and half are in families with annual incomes under \$15,000. In sharp contrast, the median income for all U.S. families is over \$40,000⁸ and for the archetypal "family of four," annual income exceeds \$63,000 in the country and \$82,000 in Connecticut⁹.

These communities are also home to disproportionate numbers of racial minority, immigrant, and ethnic families. While the State's overall demography is 83% white¹⁰, only 10% of these 83 children are identified by their parent as white. Across the State, only 7% of residents speak a language other than English at home¹¹ yet nearly half of these children (46.3%) hear or speak a language other than English at home.

Compounding barriers associated with income, race, and language are fundamental barriers associated with the many constraints imposed by limited education, marginal literacy, and illiteracy. Roughly half of these 83 children's parents or primary caregivers come from the 17%¹² of Connecticut adults who have not attained a high school

education. Literacy, and health literacy in particular, act as significant barriers to oral health and dental care. The National Adult Literacy Survey of the U.S. Department of Education¹³ reports strong correlations between demography (particularly socioeconomic status and race/ethnicity) and general literacy. Healthy People 2010¹⁴ further 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.” These 83 children’s opportunities to obtain and maintain oral health and to secure needed dental care are hampered by their parents’ lack of access to such critical information and knowledge.

While these 83 are atypical of Connecticut’s overall population of tomorrow, they are all-too typical of those who enter the playing field with significant and often severe extrinsic and intrinsic constraints. These children will have to do more than others and will need to have greater investments of common resources just to “keep up” with their age-peers if they are to succeed in society as they continue to grow and develop.

In short, the picture that emerges of these children is one of consequential inequity. Social commentator and demographer Jeffrey Passel of the Urban Institute has noted that “Although all children share the same basic needs, their access to these necessities is largely a function of the families in which they live and the resources – principally economic, but also social – available to those families.¹⁵” These 83 children live in families that simply do not have access to those key resources. Their oral health experience may serve as a marker of these limitations.

COHI Findings

Oral Health Status

Seventy-seven of these 83 toddlers and preschoolers were visually screened for signs of oral and dental pathology. Of these children, dental or oral problems were visually evident in 17 children (22%). Their problems ranged from cavities of the back and front teeth to poorly formed tooth surfaces (“hypoplasia”) and “chipped teeth” that evidence prior dental trauma. Typical of young children, only one child evidenced soft tissue pathology (noted by the screener as “gingivitis”). None demonstrated craniofacial developmental abnormalities. Of all children screened 6.5% showed obvious cavities on their back teeth., 9.1% had “incipient” or initial evidence of cavities on their front teeth, and 11.7% had fully-developed cavities on their front teeth – all before the age of four. These findings are consistent with national and state findings.

According to the national *Healthy People 2010* program’s Year 2000 Update¹⁶, 23% of all 2-4 year olds have visible cavities affecting their maxillary anterior (front) teeth. Among minority children, the rate of disease is higher: 30% for non-Hispanic Blacks and 36% for Mexican-Americans. A 1999 Connecticut study of minority 3-5 year olds who participate in Hartford area Head Start¹⁷ showed even higher levels of caries with 38% of these Black and Hispanic children having visibly-evident cavities.

Like other poor children in Connecticut and the nation, these 83 children begin early with dental problems – problems that by nature exacerbate over time until they become symptomatic. Thus starts preventable pathology that can ultimately lead to chronic pain, infection, distraction from play and learning, and dysfunctions of speech and chewing. This is also the start of a problem for many inner city children that has been documented by sociologist Jonathan Kozol who observed, “dental problems...have the consequences of wearing down the stamina of children and defeating their ambitions.”¹⁸

Insurance Coverage

All 83 are income-eligible for Medicaid. Ninety-eight percent of their parents report that they have “medical coverage.” Since federal law requires that Medicaid’s EPSDT program for children also covers comprehensive dental care, these children are also covered for dental services. Again, parents report that nearly all of their children have “dental insurance.”

Parents of the 83 children appear to be somewhat confused, however, about the nature of their children’s dental coverage. While all children are presumably HUSKY (Medicaid) eligible, 12 parents report not knowing what type of insurance their children have for dental care. Without this knowledge, they may have an especially difficult time obtaining a dental visit for their children since only a small proportion of Connecticut’s dentists actively accept as new patients young children who have HUSKY coverage. An additional 17 parents report having employer-based dental coverage, yet all of these children are likely also eligible or enrolled in HUSKY. Families with commercial primary and Medicaid secondary dental insurance often face the same barriers to dental access as those who have only Medicaid coverage. This is because having HUSKY as secondary coverage typically results in an overall dental benefit that is equivalent to Medicaid coverage alone as Medicaid and SCHIP co-insurance pay benefits only up to the level of the State’s allowances.

New Hampshire’s health director, William Kassler MD, has described his personal experience as a public health officer as he shook off “complacency” and came to appreciate the problems of low-income children seeking a Medicaid dental provider. He states, “I began to meet the dentists around the state and hear of their difficulties with the Medicaid Program; I began to meet with administrators from hospitals, and with pediatricians in the community, and learned about the tremendous unmet need; and I met with people from the community health centers and other safety-net providers and learned of the innovative community-based programs to address this unmet need and the daily challenges in maintaining these programs. I began to hear from the patients (and legal representatives) who told me extraordinary stories of how difficult it was to get seen by a dentist, in spite of the Herculean effort that they and their advocates undertake to find care. I met a school superintendent who talked about how difficult it is for kids to learn in school with chronic pain from untreated dental disease. As I learned these things, I formulated a view of the problem through the “access to care” lens of public health – that this was a funding problem in getting services to those who could not afford them.”¹⁹

The problem Dr. Kassler details is true across New England and across the nation. It is the very problem that parents of these 83 children must confront if their children's early dental problems are to be managed in an effective and timely way.

Use of Dental Services

Having coverage and getting care play out very differently for medical and dental services. Having Medicaid coverage *is* a strong predictor of having a *medical* visit at some time during a year. The majority of Medicaid-enrolled preschoolers experience one or more medical visits annually. Overall, Medicaid-enrolled children in the U.S. are five times more likely to have a medical than dental visit despite having Medicaid coverage which provides for both medical and dental benefits. In Connecticut, during State fiscal year 2000 89.7%²⁰ of the infants, toddlers, and preschoolers who were expected to have a medical screening through Medicaid had such a screening. In sharp contrast, having Medicaid coverage *is not* a predictor of having a *dental* visit in a year as nationally, fewer than a third of children in Medicaid obtain a dental visit annually. In Connecticut, during State fiscal year 2000, only 17.0%²¹ of the HUSKY-enrolled infants, toddlers, and preschoolers had a dental visit. The 87 children in the COHI study again reflect this larger group as 21.8% had experienced a dental visit at some time in their lives.

Young Medicaid-enrolled children who do obtain dental care are more likely to have a preventive service than a reparative service despite the fact that many young children – particularly low-income children -- experience Early Childhood Caries (ECC). Based on disease levels that are typical of this population, it is estimated that one-quarter to one-third of preschoolers should have reparative dental treatment for ECC during a year. However, in Connecticut in SFY 2000 only 8.7% of all Medicaid-enrolled 3-5 year olds had one or more reparative visits and only 5.7% of the 83 children monitored by COHI had such a visit.

Despite high ambient disease levels, three times more young children in Medicaid -- and in the COHI group -- obtained a preventive dental visit than a reparative visit in their lives. This finding is true also at the state level, where 25.8% of all 3-5 year olds in HUSKY A had a preventive visit in 2000 while only 8.7% had a reparative visit. In short, low-income children are not only likely to go without a dental visit, they are likely to go without the kinds of dental services that meet their particular treatment needs.

Young children of all social and economic conditions – with all types of dental coverage -- access less dental care than their school-age counterparts and young children in Medicaid access the least dental care of all groups²². These 83 children vividly demonstrate this limitation in dental access as parents of only 19 children (23%) reported that “their child [ever] had his teeth examined by a dentist or dental hygienist.” More telling of the lives of these children is that 12% (10 children), who comprised half of the 19 preschoolers who visited the dentist, did so because of “pain in their teeth” or “a problem with their teeth.” Nationally one-in-ten children of all ages (11.2%) and one-in-five poor children of all ages (19.4%) visited a dentist in a year because of a problem or pain²³.

Barriers to Care

From these findings, we observe that parents of these 83 children, despite their high risk for early onset dental problems and despite their high levels of dental coverage, are unlikely to take their young children to a dentist for early, elective dental care that could potentially reduce their likelihood of experiencing disease. Parents who do seek such care are likely to face tremendous barriers to accessing care, particularly in the private sector. Thus, the failure to obtain early care may arise either from the parent not seeking care or from the parent not being able to obtain care that is sought.

Reflecting the first explanation, 51 of the parents (61.4%) reported that they “hadn’t thought of it,” believed that their “child is too young” for a dental visit, were concerned that their child would be “afraid or nervous,” felt that the visit wasn’t needed because “the child had no problems,” or simply “didn’t know” why dental care hadn’t been obtained. Strategies to deal with this barrier need to address parents’ knowledge and capacities to seek and obtain care. These strategies require educational and social service interventions that improve the quality and quantity of parental information, enhance their oral health literacy, assist in negotiating complex or confusing care delivery and financing systems, and address cultural constraints to understanding the benefits and appropriateness of timely preventive care for asymptomatic young children. Recent success at such educational intervention has been reported by Phil Weinstein of the University of Washington²⁴. Using “motivational interviewing” in addition to traditional oral health education for parents of young at-risk children, the investigators were able to reduce one-year caries increments in a group of more than 100 preschoolers compared to their peers whose parents received only traditional oral health education. Similarly social service programs through Head Start, WIC, Maternal and Child Health Title V programs and other programs that target at-risk families hold strong potential to address oral disease for vulnerable children²⁵.

Reflecting the second explanation, 19 parents (22.9%) reported that “the child doesn’t have a dentist,” they “couldn’t find a doctor who would take the child’s insurance,” or “no appointments were available.” This finding suggests that when low-income inner-city parents *do* seek dental care for their children, it is typically difficult to obtain. Thus, even if interventions were to successfully eradicate the first barrier – parental engagement – the second barrier – care unavailability -- remains substantial. Strategies to deal with the latter problem must address the dental delivery and financing systems. A few states, notably Tennessee, Michigan, Delaware, Alabama, South Carolina, and Georgia, have demonstrated that such structural “fixes” – including market-based payment rates to providers, administrative streamlining, case management, and social marketing – can result in very rapid increases in dental utilization by Medicaid-enrolled children²⁶. Connecticut, however, has not adopted “market-based” Medicaid reforms and is now understood to be pursuing a federal waiver which could further reduce care availability as it is expected to retain current low fees that many believe to be even insufficient to cover the inherent costs of care.

Risk Factors for Oral Disease

Tooth decay remains the single most common, yet completely preventable, chronic disease among US children²⁷. Dental *caries* -- the underlying disease process that results in cavities -- is an infectious and transmissible disease that is exacerbated by frequent consumption of simple carbohydrates in the forms of sugars in candy, food, sweetened drinks, and other comestibles. For very young children, early acquisition of cariogenic bacteria, particularly the mutans streptococci, is an extreme risk factor for early caries development. When these organisms are supported through frequent ingestion of sugar-containing foods, particularly through high intensity use of a nursing bottle, they can rapidly de-mineralize teeth and create lesions that elicit pain and infection within months of tooth eruption. Since cariogenic organisms are typically passed directly from mothers who have significant dental caries experience to their infants, a mother's past caries experience and personal oral hygiene practices play a significant role in establishing a child's risk of dental disease.

Based on this science, the American Academy of Pediatric Dentistry has issued a series of guidelines for the prevention of Early Childhood Caries²⁸ which state:

1. "Infants should not be put to sleep with a bottle. *Ad libitum* nocturnal breast-feeding should be avoided after the first primary tooth begins to erupt.
2. Parents should be encouraged to have infants drink from a cup as they approach their first birthday. Infants should be weaned from a bottle at 12 to 14 months of age.
3. Repetitive consumption of any liquid containing fermentable carbohydrates from a bottle or no-spill training cup should be avoided.
4. Oral hygiene measures should be implemented by the time of eruption of the first primary tooth.
5. An oral health consultation visit within 6 months of eruption of the first tooth and no later than 12 months of age is recommended to educate parents and provide anticipatory guidance for prevention of dental disease.
6. An attempt should be made to assess and decrease the mother's/primary caregiver's mutans streptococci levels to decrease the transmission of cariogenic bacteria and lessen the infant's or child's risk of developing ECC."

Other major health organizations, including the American Academy of Pediatrics and the American Public Health Association along with a consortium of professional organizations comprising the Bright Futures project concur with the age-one dental visit recommendation and provide similar recommendations for caries prevention²⁹.

The COHI project assessed a series of "risk factors for oral disease" that reflect these recommendations. While the professional authority suggests that no child be put to bed with a bottle and that children be weaned from a bottle at age 1, a third (35.3%) of parents responding to this question (n=51) claim that they put their child to bed with a bottle and only 25% of the children are under age 1. This rate of bottle use is more than four times higher than the nationally reported use of a nocturnal bottle by the U.S. population of 2-5 year olds (8%)³⁰. Similarly, the professional authority suggests that fermentable carbohydrates not be offered in the bottle. However, 22 parents in the COHI study report filling their children's bottles with soda (n=3), juice (n=10), and milk or formula (n=18). Nationally, more than one-fifth of children 6 months to 5 years were

offered bottles containing liquids other than water³¹. The Academy's recommendation that oral hygiene measures be implemented by the time of eruption of the first tooth and its additional recommendation that such tooth brushing be provided by the parent of preschool-age children is reflected in these parents behaviors as 73% report brushing their children's teeth at least once daily. However 7% of the parents report brushing their children's teeth less often than daily and 14% report *never* having brushed their children's teeth. In contrast 89.1% of parents and guardians report that they brush their own teeth at least one daily.

Overall, many of the preventive strategies suggested by pediatric dental specialists have not been widely adopted by the parents of these 83 children. The suggestion that the disparity between recommended preventive behaviors and actual parental practices may relate to education is confirmed by an additional finding of the COHI study. The study reports that "Parents who graduated from high school were significantly less likely than those who did not to report that their child sleeps or naps with a bottle. Additionally, parents who reported brushing their own teeth at least once daily were significantly less likely than those who did not to report that their child sleeps or naps with a bottle. Thus parental educational attainment and parental hygiene practices appeared to be protective influences"³². The COHI analysis also showed that "parents who brush their own teeth at least once per day are significantly more likely than those who do not to brush their child's teeth at least once per day".

Trends and Consequences

Early oral pathologies and inadequate dental care for these 83 poor children are common, considerable, and consequential to their lives and to the lives of the approximately 75-80 thousands of children they represent in Connecticut, and the 4-5 millions of children they represent in the U.S. As these children increasingly represent the marked expansion of minority, ethnic, and immigrant children who constitute our future, their experience suggests long-term trends of increasing disease prevalence and increasing disparities in health and health care. As the "boomers" continue to "boom" in numbers, longevity, and healthcare needs, as elders demand increasing utilization of healthcare resources, and as the proportion of the working population available to support programs for children and the elderly decline, intergenerational competition for limited health resources can be anticipated and children can be expected to be at even greater risk.

Overall in the U.S., dental caries is the most prevalent chronic disease of childhood and dental care is the most common unmet health care need of children³³. About one-in-twenty (5.3%) of all parents report that their child has an unmet need for dental care. This unmet need is so extreme that 73% of all children who have any kind of unmet health care need have an unmet need for dental treatment. Children in poverty (family incomes less than the federal poverty level) and children of the working poor (family incomes less than twice the federal poverty level) are three times more likely to have an unmet dental treatment need than children from middle or higher income families, despite their typically having public insurance coverage (Medicaid and SCHIP) that almost universally includes dental benefits.

The individual and societal consequences of poor oral health are considerable. Not only do many young children suffer from pain, infection, premature tooth loss, oral dysfunction, and distraction from painful teeth but they cannot be expected to behave as well, learn as well, grow as well, or accomplish as well when burdened by symptomatic dental disease. As they continue to grow and develop, lack of self-confidence and self-empowerment may arise from unsightly dental appearance in a society where white, sound, straight teeth are normative. With advancing age, these issues translate into disparities in employability, functionality, and work performance. A recent Commonwealth Fund national study revealed that low-income adults in the U.S. are more likely to delay dental care, miss work because of a dental problem, and not have a dental examination in the past 12 months compared with their higher income peers³⁴. Such disparities are now playing out as lack of military preparedness for soldiers entering the armed forces and being activated through the reserves. Greater than four-in-ten (42% in 2000) recruits enter the Army with poor oral health that make them undeployable because of conditions that are anticipated to develop into a dental emergencies within 12 months³⁵. One-in-four reservists called to active duty after September 11, 2001 was undeployable because of poor oral health causing the Army to “risk losing its investment because it will train, support, and mobilize reservists who might not be deployed because of their health.”³⁶

In his inaugural address, President Bush declared that “children at risk are not at fault.” His observation reminded the nation that the inherent vulnerability of early childhood is a condition deserving of attention and action by all responsible adults and by government at every level. It is in this spirit that the oral health of 83 Connecticut urban children calls out for attention by parents, providers, advocates, and government.

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