Community Health Foundation of Western & Central New York

Addressing Children's Oral Health in Buffalo, New York

Final Report and Recommendations

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The Community Health Foundation of Western and Central New York (CHF) includes children living in communities of poverty as one of the target populations for their efforts. Growing concern about the need to develop an actionable strategy for increasing the number of children receiving appropriate and timely oral health care led the Board to approve an initial design phase to identify potential interventions to improve oral health and health care targeting Buffalo, New York.

This report summarizes research activities and findings while providing a set of recommendations for consideration by the Foundation. We begin with an overview of the literature on children's oral health concerns and a picture of dental health within New York State, the county of Erie, and Western New York based on available data.

A. Children's Oral Health Concerns

Oral diseases affect the mouth which includes the teeth, gums, hard and soft palate, the mucosal lining of the mouth and throat, the tongue, the lips, the salivary glands, the facial and chewing musculature and the upper and lower jaws. These diseases are among the most common chronic conditions experienced by children in the United States. Dental caries, the process that results in cavities, is the most common chronic condition of childhood; its prevalence is five times that of asthma and seven times that of hay fever. Similarly, cleft lip/palate is one of the most common birth defects in the United States (US Department of Health and Human Services, 2000).

The impact of oral diseases on children is substantial – more than 51 million school hours are lost each year, and dental diseases can result in pain, difficulty eating, speaking and learning (US Department of Health and Human Services, 2000).

A-1. Dental Diseases

The most common oral diseases are dental caries and periodontal (gum) diseases. Dental caries is often seen in young children and can persist throughout life, but periodontal diseases are most commonly seen in adults. Both diseases are caused by bacteria, and can easily be managed by a combination of individual, professional, and community level interventions.

Dental caries: Dental caries is an infectious disease that is caused by a number of oral bacteria, *Streptococcus Mutans* being critical to the process. The bacteria ferment carbohydrates to form acids which dissolve tooth enamel, eventually resulting in a cavity. If the cavity extends to the dentin, a toothache results and further extension to the pulp tissue requires root canal treatment. If left untreated, pulp infection may result in an abscess and spread of the infection via the blood stream.

Dental caries can occur at any age after teeth erupt. When dental caries affects the primary or “baby” teeth, it is called *early childhood caries* (ECC). This condition usually occurs in the upper front teeth, and treatment involves restoration of teeth with stainless steel crowns, resulting in issues of facial esthetics and self esteem for the child. ECC frequently occurs in children who are given bottles of juice, milk or formula to drink during the night. Children who suffer from ECC are more likely to have dental caries in permanent teeth since the infection and infectious agent remains in the mouth, affecting permanent teeth as they erupt.

A-2. Management of Dental Caries

Dental caries can easily be managed by good daily oral care and regular professional care. While prevention is relatively easy through the judicious use of fluoridated water, fluoridated toothpaste and sealants, it is important to note that an established lesion requires removal of the infection by removing the carious tissue and replacement with a restoration (filling). This process prevents future re-infection. Similarly, it is important that other family members who can potentially infect each other by sharing utensils be treated as well. In this respect, the idea of a “dental home” not just for an individual child but the entire family is important. The concept of a “dental home” is inclusive of all aspects of oral health which result from the interaction of the patient, parent, non-dental professionals, and dental professionals. It is designed to incorporate accessible, family centered, coordinated, compassionate, and culturally sensitive care (American Academy of Pediatric Dentists, 2004).

Prevention of Dental Caries: Water fluoridation has been named one of the most important public health advances of the past century (CDC, 1999). Fluoride remineralizes the enamel surface during the caries disease process; it also decreases the rate of demineralization in new lesions. Exposure to fluoride through the use of fluoridated toothpaste can also prevent dental caries.

Not only does tooth brushing with fluoride expose the individual to fluoride, but the act of brushing removes fermentable carbohydrates from the tooth surface. In high risk children, the professional application of fluoride varnishes has been shown to be efficacious in caries prevention. The professional application of dental sealants (plastic films that are professionally bonded onto the chewing surfaces of teeth) is an important caries-preventive measure that complements the use of fluorides. The films prevent bacteria from lodging in the chewing surfaces of teeth where fluoride is less effective (US Department of Health and Human Services, 2000).

Any intervention designed to manage dental caries, must include a multi-faceted approach that includes individual, provider and community level interventions. Good personal behaviors including sound dietary habits and daily oral hygiene must complement exposure to fluorides through both community water supplies and professional applications. Furthermore, in high risk communities, treatment of dental caries must occur in conjunction with preventive strategies in order to reduce the *Streptococcus Mutans* burden and prevent future infections.

A-3. Oral Health Disparities

The Surgeon General's Report, *Oral Health in America: A Report of the Surgeon General*, states that:

> Oral health is essential to the general health and well-being of all Americans *and* can be achieved by all Americans. However, *not all* Americans are achieving the same degree of oral health…. What amounts to "a silent epidemic" of oral diseases is affecting our most vulnerable citizens-- poor children, the elderly, and many members of racial and ethnic minority groups (US Department of Health & Human Services, 2000).

Despite multi-level interventions that have resulted in declines in oral disease and dysfunction over the past 40 years, oral health disparities persist in the United States, especially among underserved children (Dye, Tan, Smith, Lewis, Barker, Thornton-Evans, 2007; US Department of Health and Human Services, 2000). The prevalence of dental caries in primary teeth of children from families with incomes greater than 200% of the Federal Poverty Level (FPL) is 30.7% compared to 55.3% in children from families with incomes less than 100% of the FPL. Similar differences are seen by race, with Mexican-Americans having the greatest prevalence of disease (54.9%) and non-Hispanic whites having the lowest prevalence of disease (37.9%) (Beltran-Aguilar, Barker, Canto et al, 2005). Poor children are less likely to see a dentist, and uninsured children are 2.5 less likely to receive dental care than insured children. While Medicaid does cover dental services in children, there is a growing population of underinsured children unable to access care, and children experience other challenges to dental care in addition to insurance. Documented barriers to care in the United States include cost, transportation and language (Flores and Tomany-Korman, 2008).

B. Children's Dental Health in New York, Western New York, and Erie County

Dental caries rates and access to dental services in New York are similarly associated with income and race – urban areas have lower disease rates than rural areas, but racial and ethnic disparities in disease prevalence and access to and utilization of care are apparent in urban areas. In Upstate New York, 52% of second graders and 54% of third graders have experienced dental caries (Kumar, Green, Coluccio, and Davenport, 2001). Among third graders with dental caries, over 33% have untreated dental caries (Kumar, Altshul, Cook, and Green, 2005). Although close to 80% of Upstate New York children reported having dental insurance, 73% reported a visit in previous year, and only 27% had received a dental sealant (an indicator of access to preventive services).

County-specific data indicate that in the Erie County, where 22% of children live below the Federal Poverty level and close to 43% of children in Grades K-6 receive free/reduced lunch services, children experience higher rates of dental caries and poorer access to and utilization of dental services than in the rest of the state (Kumar, 2008). Over 60% of Erie County's third grade children have experienced dental caries and 35% of low income third grade children have untreated dental caries (Kumar,

2008). These data are presented in Table 1. Notably, as indicators of disease and access to care (modified from Kumar, Altshul, Cook, and Green, 2005):

Dental caries: indicate the presence of a cavity, filling or tooth lost due to dental decay, suggesting that an opportunity for primary prevention was missed.

Untreated caries: indicate the presence of a cavity, suggesting that opportunities for primary and secondary prevention were missed.

Table 1: Key indicators of oral disease and access to dental services: US, New York State and Erie County (modified from Edelstein, 2008)

	US* (ages noted)			**New York State**** 3rd graders			**Erie County***** 3rd graders		
	Low Income	High Income	All Children	**Low Income**	High Income	All Children	**Low Income**	High Income	All Children
Examination findings									
% Caries with caries	**54.3** (2-11y)	32.3 (2-11y)	51.2 (6-11 y)	**59.6**	48.0	54.1	**74.0**	50.0	60.0
%Untreated caries	**32.5** (2-11y)	15.0 (2-11y)	24.5 (6-11 y)	**40.8**	23.1	33.1	**35.0**	22.0	27.0
% Dental insurance	**87.3** (1-20y)	82.2 (1-20y)	79.1 (1-20y)	**84.1**	76.2	80.1	**80.0**	76.0	77.0
% Dental visit in previous year	**64.0** (5-7y)	Not avail.	72.9 (5-7y)	**60.9**	86.9	73.4	**55.0**	88.0	71.0

*Centers for Disease Control and Prevention, 2005
**Kumar, Altshul, Cook, and Green, 2005
** Kumar, 2008

According to the Western New York Health Care Safety-Net Assessment (Community Health Foundation of Western and Central New York, 2008), close to 32% of children in WNY who had dental coverage did not see a dentist in 2003, suggesting that access to and utilization of dental services is poor. Children with dental coverage (66%) were more likely to receive a dental visit than children without dental insurance (52%), but the report indicates that cost of dental treatment, distance, poor transportation, lack of providers that accept dental coverage, and long wait times are also barriers to care (Table 1). Our recent study, in which we collected data from primary stakeholders and parents, corroborates the results of the Western New York Health Care Safety-Net Assessment commissioned by the Foundation in 2008.

Table 2: Perceived Barriers to Dental Services (N=159)

Reason for child not getting dental care	***Percent (%) respondents***
No health insurance	18.9
Cost	16.4
Can't find a provider who accepts coverage	14.5
Distance	9.4
Too long a wait for appointment	8.8
No transportation	6.3
Office not open when I could get there	5.0
Provider did not speak my language	0.0
No access for people with disabilities	0.0
Too long a wait in the waiting room	0.0
No childcare	0.0
Don't know	20.1
Other	30.2
Total	100

Adapted from: Western New York Health Care Safety-Net Assessment

In an effort to assess the specific oral health and healthcare needs of children in Buffalo, NY as well as the system aimed to address these needs, the project team (Dr. Kavita Ahluwalia, Dr. Diane Bessel, and Ms. Almyra Ayos) included: a review of the scholarly literature as well as national best practices related to children's oral health; interviews with local individuals from pediatric oral and medical health, human service, education, and child care fields; an environmental scan to identify community resources; and a gaps analysis which drew on a map of current providers engaging in dental health screening as well as a statistical profile of children within the Buffalo area to highlight opportunities for improvement.

C. Project Activities

The project team began their work by consulting the literature (including scholarly, peer-reviewed journals and popular media) related to oral health and programs serving children and youth. In examining nationally recognized intervention strategies, the authors located a piece developed by Mouradian, Huebner, Ramos-Gomez, and Slavin (2007) following a June 2006 conference titled, "The Life of a Child: The Role of Family and Community in Children's Oral Health." Drawing on commentary from national experts, the authors of this article developed a conceptual framework which examined children's oral health at four levels of intervention including:

1. **Individual Health Services** which seek to integrate comprehensive oral health (i.e., prevention, education, and treatment) into primary care medical and other health and social services settings;

2. **Community-Level Interventions** which focus on efforts to include oral health within a range of other community-level goals that aim at developing social capital and safe, healthy communities;

3. **Policy-Level Interventions** which broaden definitions of children's health and coordinate efforts to improve it at a public policy level; and

4. **Dental Health Community** which provides leadership in addressing children's oral health disparities through training, service engagement, and development of the dental health workforce (i.e., recruitment, retention).

The model was selected as the basis of this report because it addresses state-of-the-art practices in children's oral health and is comprehensive in nature - engaging both prevention and treatment interventions. The model addresses points of intervention which were identified by national experts and are particularly relevant to the City of Buffalo. Furthermore, this model specifically addresses the dental health community, highlighting the role played by the dental profession at both the individual and community level, as well as through policy-level interventions. As such, previous work commissioned by the Foundation (Edelstein, 2009), which addresses policy recommendations for the Syracuse area was integrated into this report.

The results of the literature review also informed the development of interview questions and provided examples of service delivery for use in discussions with study respondents. Face-to-face and telephone interviews were conducted with 69 persons involved in pediatric oral and medical health services, human services, child care, and education within the city of Buffalo. Initial interviews were conducted with 15 key informants identified at the initiation of the project. Using a snowball sampling technique, a number of additional names were generated.

The final sample included individuals from four constituencies: 1.) providers who offer pediatric dental services as their primary activity; 2.) providers that offer dental services as well as other health and/or human services; 3.) providers that engage in educational activities (e.g., pre-schools, Head Starts, child development centers) including oral health education; and 4.) parents of minor children living in communities of poverty who had experience seeking assistance through the current system. A complete list of respondent names and affiliations is provided at the end of this report (See: Appendix A).

Service providers were asked to share information on their own programming as well as the populations they currently serve. More specifically, these study participants were asked about the oral health of children they serve, as well as education and awareness activities. All respondents provided information on programs and services available in their respective communities as well as perceived gaps in service and areas in need of improvement. Finally, each respondent was asked to give their perspectives on a new law passed in 2008 which requires New York State public schools to request an optional dental health certificate for students at the time of entry and in grades K, 2, 4, 7, and 10.

The intent of the legislation is to improve visibility of oral health and oral health needs in the state and provide data to policy makers for future oral health interventions and legislation. A copy of the full interview schedule is available in Appendix B.

The project team also secured a list of dental practices (general and pediatric dentistry) in Buffalo and interviewed 36 dentists and community practices that volunteered to provide screenings for the New York State Dental Health Certificate through a program sponsored by the University of Buffalo (UB) Dental School to introduce dentists to the new legislation. Information included whether the dentist or practice accepts public insurance, how many children have come in for screenings, what conditions, if any these children have, and what provisions are made for follow-up treatment. A copy of this interview schedule is included in Appendix C. These data were used to map the location of dental providers vis-à-vis zip codes that define areas of poverty to provide a graphic depiction of children's dental services in Buffalo.

The information gathered through interviews was used in the completion of an environmental scan which aided the project team in developing a "lay of the land" specific to children's oral health within communities of poverty.

The primary aim in conducting any environmental scan is to identify trends, available services, and issues that will serve as the basis for future planning and decision-making activities. This project's environmental scan activities focused on the types of oral health services available to assist children (and their families) in the Buffalo community, as well as connections between the various sectors specified above (i.e., medical, oral health social services, child care, education). A total of 40 local programs were identified as having relevance to this study (excluding private practitioners) and categorized based on the nationally-identified intervention strategies mentioned in the table below.

Nationally-Identified Intervention Strategies for Children's Oral Health Care	
Individual Health Services • Provision of Information About Dental Care/Services for New Mothers and Infant • Engagement of Families in Children's Oral Health • Provision of Information about Dental Care and Services to Underserved Populations by Culturally Competent Staff • Oral Health Screening, Education, and Referral for Dental Care at Child Care, Community and School Settings • Use of Innovative Models to Increase Access to Dental Services (e.g., mobile dental services) • Use of a Full Complement of Preventive Services (including Cleaning, Screening, Sealant, Fluoride) • Availability of Comprehensive Care within Community Settings (including Fillings, Extractions, Restorative, and Orthodontia) • Adoption of Culturally Appropriate and Child-Friendly Dental Homes	***Community-Level Interventions*** • Inclusion of Oral Health Education in Community Efforts including Home-Visiting Programs, Birth-to-Three Programs, Child Care Settings, School Readiness Programming, Schools, Foster Care and Child Welfare Programming • Co-Located, Integrated Dental, Medical, Mental, and Social Services in Communities of Greatest Need (e.g., Comprehensive Community Health Centers, School-Based Care) • Adding Oral Health Indicators to Existing Health Indicators Tracked by Communities • Engagement of Community-Wide Education Campaigns and Social Marketing to Increase Oral Health Care Awareness • Ensure Children and their Families have Access to Healthy Food and Safe Places to Play
Policy-Level Interventions • Adopt Definitions of Child Health that Emphasize the "Child's Ability to Develop and Realize their Potential, Satisfy Their Needs, and Develop Capacities that Allow them To Interact Successfully with their Biological, Physical, and Social Environment" • Monitor Each Domain of Children's Health (including Health Conditions, Functioning, and Health Potential) • Ensure that Oral Health Outcome Measures are Developed and Reported • Ensure Coordination Across Oral Health and Other Health Programs (Inter-Agency Collaboration) • Inclusion of Oral Health in Existing Health, Education, and Welfare Programming through Social Policy • Encourage Oral Health Advocates to Join the Larger Child and Family Advocates • Innovative Reimbursement Models	***Dental Health Community*** • Education of Dental Students on Health Determinants Starting Early in Dental School • Dental Students Required Participation in Community-Based and Service Learning Activities Starting Early in Dental School • Ensure that Dental Students Learn about the Unique Characteristics of Children • Expand Academic Partnerships With Community Groups to Develop Evaluation/Outcome Measures • Encourage Dental Students Participation in Interprofessional, Community-Based Volunteer and Outreach Efforts • Expansion of Research Partnerships within Communities to address Health Disparities

Taken from Mouradian, Huebner, Ramos-Gomez, and Slavin (2007)

Similarly, a description of current gaps in services was developed as well as a list of informant-identified suggestions for addressing these concerns.

Finally, statistical information was gathered to develop a basic community profile and estimates of the size of the target population including key risk factors associated with poor oral health or access to care. Data collection included population size, household distribution; and receipt of federal assistance (including food stamps, public assistance, and Supplemental Security Income). A list of dentists registered with the American Dental Association and practicing in the Buffalo area was also secured.

These data form the basis of observations and recommendations issued in this report.

C. Key Findings

The overarching finding of this work is that there are a number of critical issues that must be addressed in order for oral health care to be targeted at children with the greatest need.

In uncertain economic times, it is vital that infrastructure and systems be examined for efficiency and the potential for sustainability. While a number of organizations are trying to provide some level of oral health education, preventive and/or screening services, these activities are sporadic or otherwise lack consistency across the city. Likewise, there are few comprehensive care service providers who are able to provide low cost or safety net services to children on a consistent basis, especially in proximity to areas of poverty.[1] The number of pediatric dentists and surgeons available to serve impoverished families is limited and, as a result, a majority of children in areas of poverty do not have a "dental home."[2] Finally, the community appears to lack clear leadership to address these capacity issues or to ensure that children's oral health is regarded as a critical component in the health of children and of the community.

The table below provides an overview of local programs specifically designed to address the needs of children in communities of poverty (excluding private practitioners who accept only private insurance or individual payment for their services). Information on the level of engagement (as described by Mouradian, Huebner, Ramos-Gomez, and Slavin, 2007) as well as a short summary of current engagement is also offered. A full chart with program description and national strategies usage is provided in Appendix E.

[1] For the purposes of this report, comprehensive dental care is defined as the full range of dental health services including examination, diagnosis, treatment, preventive services and follow-up with patients.

[2] The concept of a "dental home" is inclusive of all aspects of oral health which result from the interaction of the patient, parent, non-dental professionals, and dental professionals. A dental home is designed to incorporate continuously accessible, family centered, coordinated, compassionate, and culturally sensitive care (American Academy of Pediatric Dentists, 2004).

Organization and Program Name	Level of Engagement	Current Engagement
Baker Victory Services Dental Center	Individual Health Services	Few preventative strategies; offers specialized care to high needs children
Boys and Girls Clubs of Buffalo Collaboration with Community Health Center of Buffalo	Individual Health Services	Limited to small group of students per month; Dental care not available on site; Parent interaction is limited; Few families establish a "Dental Home"
Buffalo General Hospital Oral Surgery Clinic	Individual Health Services	Child-based services are extremely limited
Community Health Center of Buffalo Dental Services	Individual Health Services Community-Level Interventions	Use of comprehensive services among patients is limited; Few families have established Center as their "Dental Home" – including those associated with the Boys and Girls Clubs of Buffalo; limited hours of service
Erie County Community College Dental Clinic	Individual Health Services	Limited times available for children 5-17 years of age and must be accompanied by adult
Erie County Community College Dental Hygienists Certificate and Dental Assisting Program	Dental Health Community	Clinic services for children are very limited; hours of operation are limited; location of services
Erie County Department of Health Field Trip to Dental Clinic	Individual Health Services	One-time engagement each year; Dental care not available on site
Erie County Department of Health Jesse Nash Health Center	Individual Health Services Community Level Interventions	Limited outreach, marketing, and engagement within community; underutilized as a medical/dental home
Good Neighbors Clinic Harvest House	Individual Health Services Community-Level Interventions	Limited to current clients; Follow-up dental care not provided on site; referral only; Limited connections between medical, dental, and social services

Organization and Program Name	Level of Engagement	Current Engagement
Jericho Road Ministries Jericho Road Family Practice	Individual Health Services	One dentist available at the clinic; Limited dental services available on site
Kaleida Health School-based Health Centers	Individual Health Services Community-Level Interventions	Currently operational in one school (Westminster) - limited; Challenges associated with program launch; Planned activities will serve high need populations; limited family involvement
Kaleida Health Deaconess Dental Clinic	Individual Health Services	Limited children's programming (teens); primarily serving adults
Kaleida Health Family Dental Clinic at Sheehan	Individual Health Services Community-Level Interventions	Program is very new; linkages between different departments have not fully developed; opportunity to make medical/dental home
Kaleida Health Judge Joseph S. Mattina Community Health Center	Individual Health Services	Limited outreach, marketing, and engagement within community; underutilized as a "medical/dental" home
Kaleida Health Pediatric DentalCenter (South Buffalo Mercy)	Individual Health Services	Limited outreach, marketing, and engagement within community; underutilized as a "dental" home; use of UB-affiliated dentists
Lifetime Health Bertha S. Laury Dental Clinic	Individual Health Services Community Level Interventions	Limited outreach, marketing, and engagement within community; underutilized as a "medical/dental" home; limited number of dentists available

Organization and Program Name	Level of Engagement	Current Engagement
Northwest Buffalo Community Health Center	Individual Health Services Community Level Interventions	Limited outreach, marketing, and engagement within community; underutilized as a “medical/dental” home; would like to develop additional programming to educate and screen younger children (Head Start located in building)
UB School of Dental Medicine Mobile Dental Van	Individual Health Services	Challenges associated with operating a mobile unit include repairs and workspace issues; innovative model
UB School of Dental Medicine Infant Dental Health	Individual Health Services	Limited engagements in the community; reaches approximately 40 families per year
UB School of Dental Medicine Teddy Bear Clinic	Individual Health Services	One-time only annual event
UB School of Dental Medicine Head Starts	Individual Health Services	One-time only events; dental care not available on –site; referral only
UB School of Dental Medicine Counseling, Advocacy, Referral, Education, and Service (CARES) Program	Policy-Level Interventions	Coordination is generally limited to insurance and social service system; innovative model for service referral
UB School of Dental Medicine Give Kids a Smile Day	Individual Health Services	One-time only events; families are unable to establish a dental home; rely on once-yearly services as dental health provider; highly coordinated and resource intensive event
UB School of Dental Medicine Area Health Education Centers	Dental Health Community	Early engagement of potential dental students
UB School of Dental Medicine 8th District Dental Society Smile Education Day	Individual Health Services	One-time only event; Dental care not available on-site

Organization and Program Name	Level of Engagement	Current Engagement
UB School of Dental Medicine Community Outreach Team	Individual Health Services	Limited engagements in the community; location is not need based
UB School of Dental Medicine Comprehensive Oral Healthcare for Disabled Youth (CODHY) Program	Individual Health Services	Innovative model for special population services
UB School of Dental Medicine UB School of Medicine Lighthouse Clinic (Dental/Medical)	Individual Health Services	Programming limited to Lighthouse Program Participants or residents of West Side
UB School of Dental Medicine Bethel Head Start My Dentist, My Friend	Individual Health Services Dental Health Community	One-time engagements; limited to students enrolled in Bethel Head Start; Engages 4th Year Dental Students in activities; Earlier engagement is preferred
UB School of Dental Medicine Advanced Education in Pediatric Dentistry	Dental Health Community	Specialized training; opportunities to expand research partnerships within communities to address health disparities; few policy-related activities
UB School of Dental Medicine Pediatric and Community Dentistry University Pediatric Dentistry Locations: • Women and Children's • South Buffalo Mercy • Family Dental – Sheehan • UPD Niagara Falls • UPD Getzville • UPD East Aurora • UB Main Street Campus • School Health Centers	Individual Health Services Dental Health Community	Challenges associated with health insurance coverage for children and families; opportunities to expand research partnerships within communities to address health disparities; few policy-related activities

Notably, the vast majority of available programs focused on individual health services were oriented toward oral health education (primarily), screening, and referral (12). However, most of these programs focused on one-time or limited events (e.g., UB Department of Dental Medicine's Teddy Bear Clinics, Head Start Activities, Smile Education Day, Community Outreach, and Mobile Unit; Erie County Department of Health Field Trip to Dental Clinic; Boys and Girls Clubs of Buffalo; School-Based health Clinics) and provided referrals to other locations when treatment was needed. Very few programs (Jesse Nash, Harvest House, Northwest Buffalo Community Center, and UB's Department of Dental Medicine's CODHY Program) that engaged in education, screening, and referral had the resources to link children directly to dental care at their location. As such, clients were responsible for locating needed resources on their own.

Among providers that accepted S-CHIP, Medicaid, or sliding fee scales for payment of services, two programs focused primarily on education, outreach and simple preventive procedures such as cleanings (Jesse Nash Health Clinic, ECC Dental Clinic) while an additional six programs (6) focused primarily on episodic treatment including Baker Victory Services, Community Health Center of Buffalo, Kaleida Deaconess, Kaleida Mattina Center, and UB's Department of Dental Medicine Mobile Van and CODHY programs.

Five programs (Family Dental at Sheehan, Mercy Pediatric Clinic, Laury Dental Clinic, Northwest Buffalo Community Center Dental Clinic, and UB Department of Dental Medicine Smile Week) provided comprehensive care which includes both preventive (i.e., sealants, fluorides, cleanings) and treatment. Four of these programs (Family Dental at Sheehan, Mercy Pediatric Clinic, Laury Dental Clinic, Northwest Buffalo Community Center Dental Clinic) were also oriented towards providing a "dental home" for children where they may return for follow/up services. Notably, one of the facilities, Family Dental at Sheehan, was opened in the fall of 2008 and has not yet developed a full patient base.

Several programs (including Mattina, Laury, Mercy Pediatric Dental, Northwest Buffalo, and Jesse Nash) report that they would like to expand the number and types of dental services to the community. However, representatives from these organizations indicated that they were unable to do so because they do not have the resources to improve outreach and marketing. As a result, these programs are currently underutilized by the community. In our assessment, a number of dental provider sites (7) have the capacity to provide expanded services, including comprehensive care, if provided with resources including additional staffing and assistance with marketing and outreach to communities.

Several programs (7) were also co-located within multi-service providers including Federally Qualified Health Centers, Community Health Centers, or School-based Health Centers. However, many of these programs are very new and/or face challenges with regard to engagement with other systems (including Family Dental at Sheehan, school-based dental services at Westminster School, Harvest House, Community Health

Center of Buffalo),. As such, they have not achieved the level of comprehensiveness desired nor have they become the medical/dental home for children or their families.

Looking at the other levels of intervention described by Mouradian, Huebner, Ramos-Gomez, and Slavin (2007) – policy-level interventions and dental health community activity has been extremely limited. Only one identified program addresses coordination across oral health and other program activities (UB Department of Dental Medicine CARES Program). This suggests a real opportunity to expand policy-level leadership among local providers and to identify children's oral health as core to a child's health needs, . Organizations, including the University at Buffalo Dental School and its University Pediatric Dentistry clinics, the Community Health Center of Buffalo, Northwest Buffalo Community Center, and Kaleida Health can shed light on core issues occurring at the patient-community interaction level and shape children's dental policy across New York State.

Likewise, while UB and Erie Community College both operate training programs for dental health professionals (including dentists, hygienists and dental assisting), engagements have been limited to providing dental students with opportunities to participate in inter-professional, community and volunteer efforts and learning about the unique characteristics of children. As such, there is a real need to advance research partnerships to address health disparities and to measure the success of community interventions through evaluation and outcome measurement.

Beyond the environmental scan, interview data also suggested five core themes related to children's oral health care in Buffalo including: 1.) Lack of regular and consistent oral health education and services in settings where children and their families consistently interact; 2.) Problems navigating the dental health system; 3.) Dental service accessibility challenges for families in impoverished communities; 4.) Overreliance on screening and need for increased comprehensive and preventive care; and 5.) Dental health workforce and capacity issues. Each of these topics will be discussed in turn.

C- 1. Lack of regular and consistent oral health education and preventive services in settings where children and their families interact.

Optimal management and prevention of dental disease and dysfunction requires periodic professional care, daily personal care, and attention to diet and other lifestyle behaviors. In this respect, it is vital that people who interact with children, including service providers, parents, and caregivers, are aware of dental disease processes, management options, and the importance of regular personal and professional care, and are able to disseminate this information to children and their families.

Service Providers: Children and their families engage with a variety of different practitioners – including child care providers, pre-K and Head Start facilities, schools, human service providers, and medical professionals - in their day-to-day experiences. These individuals can serve as an important resource to poor children and their families with regard to oral health education as well as the importance of good nutrition and health maintenance strategies. Presently, only three local programs are designed to

address this need in a culturally competent manner or among special populations. They include UB's Infant Health Program and Comprehensive Oral Healthcare for Disabled Youth (CODHY) Program, and Jericho Road Ministries.
A number of models have successfully incorporated a range of oral health services, including comprehensive dental care, preventive services, education and outreach, through these providers are in existence in the United States (Snyder, 2009). In Buffalo, however, most human service, child care or education providers are not specifically trained to provide education on oral health nor do they have the resources they need to deliver this information on a consistent basis or in a standardized manner.

In interviews, professionals from these settings stated that they regularly encountered children with visible dental health issues as well as children who complained of severe mouth pain which hindered their ability to eat, drink, or engage fully in program activities. Study respondents, likewise, recognized the importance of educating children about oral health care but described their efforts to provide this education as "irregular" or "piecemeal." This was especially true for individuals serving young children (ages 0-5 years). These professionals indicated however, that they did not always feel comfortable providing dental education as they were not experts. As such, many individuals suggested that they did "the best they could" providing children and their families with information but recognized that more assistance was needed.

Among providers who expressed some level of confidence in providing dental health education themselves (primarily those working in educational programs), they felt that they were at a disadvantage because they did not have access to resources including teaching materials, demonstration models, and other educational supplies.

Several study participants indicated that they were aware of outreach services available, but few had utilized this service due to its limited availability. The UB Community Outreach Team engages the community on Wednesdays and provides oral health education, screening and outreach to children through school and community-based organizations. Additionally, UB provides assistance at local Head Starts. These services are offered on a limited basis, are provided to organizations that request them, and are not based on documented need. Services are provided by dental students who are able to provide education and screenings, but are typically unable to provide direct care in community-based settings.

Parents and caregivers: Several social services providers and dentists expressed concern about parental lack of knowledge about dental disease and home care. Notably, the most common dental disease of childhood, dental caries, is an infectious disease caused by the bacterium *Streptoccus Mutans* – if the disease burden is to be decreased in a meaningful way, it is vital that the bacterial burden be decreased among family units through treatment and preventive care for children and the caregivers with whom they are in regular contact. Unfortunately, both dentists and social services providers often suggested that dental issues frequently ran within families (including parents, other caregivers, as well as siblings) suggesting that families are not performing optimal oral hygiene and/or accessing dental services.

Typically, oral health education is provided to parents and caregivers through dental offices by dentists and hygienists, but they are only able to do so if parents access dental services. The Boys and Girls Clubs of Buffalo have attempted to play this role through collaboration with the Community Health Center of Buffalo, but have not been successful in reaching a wide group of families. UB also has a pilot program, UB CARES program funded by the Dental Trade Alliance to examine the feasibility of using social workers to play this role. Other potential sources of information are prenatal counselors, pediatricians, community health workers and social workers all of whom have been successfully used in the United States (Edelstein, 2009).

Respondents, likewise, stressed that it is difficult to expect children to maintain oral hygiene, or eat less sugary foods if they did not have the tools to perform oral hygiene within their households and/or parental support. The necessity of providing needed resources (including toothbrushes, toothpaste, and dental floss) as well as educational materials to both children and their guardians was commonly highlighted.

Current S-CHIP guidelines require that parents receive oral care information prenatally – while this intervention will ensure that soon-to-be-parents of some children will receive oral health information through physician's offices, Medicaid-eligible families will not.

C- 2. Problems navigating the dental health system.

In addition to understanding disease processes and the importance of care, it is vital that underserved families are able to successfully navigate the dental care system. Our work suggests that poor families are often unaware of available resources and that practitioners do not always provide appropriate guidance. Of particular concern is the fact that many individuals lack an understanding of dental insurance forms, the terms of public insurance programs including Medicaid and Child Health Plus, as well as which local providers accept these forms of payment.

Families: According to study respondents, the parents or guardians of low income children often feel overwhelmed by the various forms and paperwork associated with securing services. Many express real concerns about their ability to pay for dental care – even when they have private insurance or are eligible to receive financial assistance. In many cases, low-income individuals are unable to read forms or they may not understand their content because of low literacy levels, lack of education, limited English proficiency, or general confusion. Several dentists and social services providers commented on how this lack of understanding serves as a barrier for poor children as their parents do not return essential forms to secure treatment available through schools or non-profit organizations.

Poor families also appeared to lack information about dental providers' acceptance of health insurance plans especially Medicaid and Child Health Plus. Study respondents

noted that many publicly-insured clients did not know that their family members were eligible to receive oral health care through federal programs.

Of special concern to both school and community-based providers is the fact that parents did not always accompany their children to dental appointments. The lack of parental involvement often led to difficulties in securing permission for treatment and more extensive procedures (especially in models where children have blanket consent to receive screenings and education, but not follow-up treatment services) and is contrary to the dental home concept.

Payor systems: Several community-based organizations shared concerns about confusing payment options and structures. Practitioners at UB CARES, Boys and Girls Clubs, and the Erie County Department of Health described their efforts to explain dental insurance coverage to their clients. However, not all practitioners have staff in place to assist with these issues. Moreover, in several instances, dental staff could not identify the forms of insurance accepted at their own organization. As a result, some of the uncertainty about the dental system is borne of experience for poor families.

Parents interviewed as part of this study explained how they had been referred to comprehensive dental care providers following a screening, only to be turned back because the provider does not accept their coverage. Although some local providers accept Medicaid, they do not accept all plans and finding providers who accept Child Health Plus is especially challenging. Furthermore, most specialty providers (e.g., orthodontics, oral surgery, endodontics) do not accept public dollars.

Specialty services: When the need for specialty services is identified, dentists and community dental clinics are generally unaware of potential referral resources. By their own account, practitioners have limited time available to learn about community resources. They have even less time to engage in necessary leg-work to research these opportunities, especially when families can be hard to reach after they have left their organization or practice.

To address some of these concerns, study respondents suggested improved marketing efforts and the development of a resource guide or other aides which provide information about insurance products, the availability of services, and which programs accept what insurance products. Study participants further asked that these resources be made available in multiple languages, that they be easy to understand, and distributed throughout impoverished communities and to dentists and social service providers.

C-3. Access to Dental Services

Families living in poverty experience many challenges to accessing dental care, including difficulty scheduling or keeping appointments during “regular” office hours, transportation, and work related issues. Several dentists interviewed for this study described strategies to “double-book” appointments because patients were frequently

late or missed appointments altogether due to challenges associated with the use of bus lines and/or complications with transportation.

Geographic Maldistribution of Dental Providers: Lack of geographic proximity makes access to and utilization of dental services difficult for children in communities of poverty. A map of dental services available within communities of poverty demonstrates that available dental practices are limited in the region, and that persons seeking to use public payment mechanisms (Medicaid or S-CHIP) to pay for services find few local options for care (as noted in the section above).

Of the 77 providers in the ten impoverished zip codes (14201, 14202, 14203, 14204, 14207, 14208, 14211, 14212, 14213, 14214), 51 or 66% are located in zip code 14214 and two zip codes had no practicing dentists. Of these, only seven practitioners accepted Medicaid (of which four were safety net providers). See Appendix D for a map of dental services in Buffalo, NY.

As is evident from this crude representation, dental services are concentrated in the northern regions of the city and are most prominent in semi-urban and suburban areas. Not only is this true of dental services in general, but designated Dental Screeners are also primarily located outside zip codes defining as areas of poverty, suggesting that children in schools within these areas may experience difficulty accessing dental services.

According to the Western New York Health Care Safety-Net Assessment, 9.4% of parents reported distance to be a barrier to care (Community Health Foundation, 2008). Notably, this figure increases to 19% when subjects who did not respond to the question are removed from the analysis

UB is part of a nationally-sponsored program through the American Dental Association known as “Give Kids a Smile” Day which efforts to address some of these geographic concerns. As part of the event, children who do not have dental insurance are given an opportunity to see a dentist and receive services including cleanings, x-rays, sealants, fillings, extractions, and orthodontic consultations throughout the Buffalo region. Since services are provided by local dentists, families and children find it easier to avail themselves of care. In the past year, UB provided services to 780 children through this event. “Give Kids a Smile” Day requires a large number of volunteers and logistical support in order to make it effective. Moreover, many of the practitioners involved do not take public insurance or offer sliding fee scales. As such, many families are not able to receive services on a more regular basis.

While this event is not intended to be a replacement for the establishment of a dental home, UB staff members indicated that several families relied on this service event for dental care for their children. Families regularly called the University to inquire about appointment opportunities well in advance of the scheduled day. This is of particular concern as it highlights the fact that these children are not likely to access dental

services more than once a year. Furthermore, since care is only provided to the child, a dental home for the family is not established.

Transportation: Transportation was also discussed as a major barrier to care. Respondents indicated that the local public transportation system is not well-connected and that the cost associated with using the system is prohibitive, especially in the case of large families. Similarly, 5% of WNY Safety Net Assessment respondents indicated that transportation was a barrier to care (Community Health Foundation, 2008). As such, several respondents suggested the importance of strategies that provided transportation or otherwise mitigated its need. Among these strategies, community-based organizations discussed the use of mobile dental services including dental vans and/or portable dental equipment. Respondents felt that the use mobile units would increase opportunities to provide dental services within the community, especially at non-traditional locations (i.e., community centers, malls, child care centers).

The UB Dental School has for several years provided mobile dental services throughout Chautauqua County via a recreational vehicle. Services include screenings, cleanings, fillings, and sealants. The majority of clients are children who are covered by Medicaid or have limited or no dental insurance.

UB annually provides more than 3,000 visits in Chautauqua County using its mobile dental van but is currently in the process of phasing out this service due to the high costs associated with vehicle maintenance as well as the challenges associated with securing dental professionals to support the activity. UB officials described the mobile unit as a “financial drain” due in large part to the need to constantly address “wear and tear on the dental equipment and on the van itself.” They also characterized the unit as a “constant logistical challenge” related to providing care within a limited space, dealing with weather conditions, and finding locations where services could be easily rendered.

Another innovative model was developed by the Boys and Girls Club of Buffalo, in partnership with the Community Health Center of Buffalo. The program is designed to provide dental services to program participants and seeks to overcome transportation challenges. Each month, the non-profit organization sends a small group of children to receive services at the Center including examinations and cleanings.

Staff members from both organizations indicated that many parents signed their children up for these services but seldom continued to use the location after initial assistance was received. Further, although children receive examinations and cleanings, parents often do not sign the forms required for follow-up treatment, or do not accompany children to follow-up appointments to provide consent. These staff members also discussed the fact that they need to advertise the fact that they offered co-located medical, dental, and social services at the Community Health Center location.

School- and Community-based Services: Kaleida Health and the Erie County Department of Health stressed opportunities to provide dental services as part of

school-based health centers as a strategy to improve access to dental care. Currently, 16 Buffalo Public Schools have school based health care centers which provide primary care, acute care, sick visits and prescriptions to children (Note: Thirteen of these schools are coordinated by Kaleida Health and 3 are coordinated by Sisters Hospital).

While three schools (Herman Badillo, Grover Cleveland, and Westminster) expressed a desire to provide dental services (sealants and screenings) on-site immediately, they have faced several obstacles in their implementation. Dental care is being provided on an "ad hoc basis" within one school at the present time (Westminster) and includes only screening and referral through a UB Dental School practitioner.

A model school-based health care network that provides dental services is the DentCare program in New York City. This program provides dental examinations, hygiene services and preventive services such as sealants through hygienists in school-based centers. Dentists provide comprehensive care on a rotating basis (Kellogg, 2008).

As noted above, there are also opportunities to strengthen the provision of dental services within Federally Qualified Health Center (FQHCs) and other Community Health Centers. Presently, there are six dental programs that are connected to medical, mental and social services - including Community Health Center of Buffalo, Jesse Nash Health Center, Harvest House, Family Dental at Sheehan, Bertha Laury, and Northwest Buffalo Community Health Center. One of these locations is new (Family Dental at Sheehan) and another program struggles with capacity issues (Harvest House). Four of these locations indicate that they are underutilized due to lack of resources to pursue marketing, outreach and community engagement.

None of these community-based, co-located programs has been able to effectively engage in coordination with other system components (e.g., medical, mental, social services) to offer a more comprehensive dental/medical home to families. As such, much more needs to be done to shore up these community resources.

Service Hours: Parents stressed challenges they faced getting to appointments during weekdays and suggested the importance of evening and Saturday hours. Although alternative care hours are available in a few dental locations, the majority of community providers do not have extended hours making it difficult for students and/or working parents to access services. In response to suggestions about extending hours, several dental practitioners interviewed for this study indicated that they felt that "their community" would not want to receive assistance during those times. Few had asked clients about the need.

C-4. Overreliance on screening and need for increased comprehensive and preventive care

As illustrated above, our work indicates that a number of service providers (58%) are providing education and screening services in the community, but few children are

accessing direct follow-up or professional preventive care, and dental homes where children and families can receive regular professional dental care are not being established. In our view, provision of screening without follow-up services may serve as a disincentive to seek dental care as recipients may mistakenly believe they do not have dental care needs or that the screening serves as an annual dental examination.

Importantly, screening is a visual assessment of the oral cavity to assess for global dental care needs while an oral examination, which may include radiographs, provides a detailed examination to determine dental care needs and treatment plans. In Buffalo, screening services are provided through a number of service providers, including school and community-based health centers, dental clinics (ECC, Jesse Nash, Laury, Family Dental at Sheehan) and through various events and engagements by the UB School of Dental Medicine. While screening is important, the ultimate goal should be to aid children and their families in identifying concerns so that they may receive treatment and comprehensive care.

In an effort to move towards “a dental home for each child,” legislation was passed prior to the start of the 2008-2009 School Year to implement a dental screening program in New York State. As part of this program, New York State public schools were asked to notify parents or guardians to request a dental health certificate. While the certificate is not required for admission to school, schools were asked to make available, on request, a list of dentists who provide free or reduced cost dental screenings.

In response to this new legislation, several schools and community centers provided dental screenings as part of their programmatic activities. Likewise, the UB Dental School hosted a week of special screening dates within the community in addition to its regular screening activities. UB also developed a list of 36 providers who offered low or no cost screening.

Although the intent of the law and local efforts to provide screening services are commendable, it is improbable that this legislation will address the wider issue of addressing children’s dental care needs for a number of reasons. First, the Dental Health Certificate is recommended, but not required and the language of the law advises dental professionals that it is be completed after an “assessment,” instead of a comprehensive examination. Radiographs or x-rays are not required and there are no standardized procedures for practitioners to follow. As such, it is improbable that the completion of the Dental Health Certificate will capture a child’s dental health needs unless they are acute or severe.

Second, if a child is found to have dental treatment needs that may interfere with their ability to be in school, neither parents, schools nor dental providers are required to provide follow up care. The screening process is not specifically designed to evaluate treatment needs or to aid in the specific development a treatment plan for clients. In addition, parents may believe that this examination may suffice as a dental visit, thus not following up with an appointment for a comprehensive examination and/or follow-up care.

Third, the majority of local dentists who participated in the screening process do not accept public insurance – of the 36 who participated, only 12 or 33% accept Medicaid, and only 7 are located in areas of poverty (See Map in Appendix D), thereby invalidating the goal of moving children directly into comprehensive care. Those in need of assistance must seek help from a limited number of safety net provider organizations within the community or secure assistance from UB or its affiliated University Pediatric Dentistry offices. Many respondents felt that the provision of screening without a direct connection to appropriate comprehensive care and follow-up was irresponsible and created greater distress for poor families who would have to seek out additional services based on referral.

As noted in the sections above, families within impoverished communities face many challenges when attempting to secure comprehensive dental services including problems related to insurance coverage, knowledge of resources, and accessibility. Study participants strongly advocated for an expansion of comprehensive services within impoverished communities to address these needs and suggested that screening should only be a step in the process of securing a full range of dental services.

Preventive services: Dentists and social services providers also emphasized the importance of a full range of preventive assistance within poor communities including dental sealant and fluoride programs. Unfortunately funding for these types of activities is very limited. For example, UB had a sealant program which was very popular and well-received within the community. The project was one of 24 similar efforts funded in 1985 through the New York State Sealant Program for Underserved Children from the New York State Department of Health. However, these state funds are no longer available and the program has been discontinued. Dentists, social services providers and parents have advocated for its return.

While dentists and hygienists are optimally trained to provide dental health education and preventive services, many programs have developed and successfully implemented delivery of preventive services through non-dental professionals. One such program, Into the Mouths of Babes in North Carolina, in which physicians are trained to provide education, fluoride varnishes and referrals for treatment has been successful in reducing oral disease and treatment costs (Snyder, 2009). Similarly, the State of Alaska has trained Dental Health Therapists to provide dental services in difficult to reach communities (Nash, 2005). A number of other states, including Minnesota are exploring this model of care delivery. In communities where access to dental services is difficult, utilization of non-dental providers to provide preventive services (provided it is within their scope of practice) is a strategy that can used to target high risk communities for preventive services, referrals and oral health education at regular intervals.

Comprehensive Care: Comprehensive care includes examination, dental prophylaxis, preventive services and restorative care. While there are a number of comprehensive care providers in Buffalo including community clinics, private dental practices and UB dental school and its affiliated community-based clinics, they are geographically difficult

to access, transportation services are not well-connected, insurance coverage is not always accepted, and hours of service are limited.

C-5. Workforce and capacity

While the study identified a number of existing dental services within Buffalo, study respondents agreed that the current system is not adequate to meet current needs or provide comprehensive care to underserved children. Workforce issues, capacity, and coordination of existing services all need to be addressed within the area.

Dentists and Dental Hygienists: Respondents stressed the importance of ensuring that every child is seen by a trained professional on an on-going basis (e.g., every six months) to determine whether there are any new dental health concerns. Several study respondents indicated a desire to take on additional dental staff but faced challenges in hiring and retaining dentists and dental hygienists. In particular, retaining pediatric dentists and hygienists to provide services in communities of poverty or accept Medicaid/S-CHIP is difficult. In this respect, an expanded role for dental students and post-doctoral dental trainees within school-based health centers, community centers, and in dental practices in impoverished communities may be prudent. Opportunities that incorporate service learning methodology into dental training were discussed by UB officials. Service learning will provide dental trainees with a real world experience which encourages them to gain a greater understanding of oral health determinants and disparities. The community will incur additional workforce resources while UB will have an opportunity to bring the community into the Dental School. Importantly, such interactions have “lifetime” implications for the people being served by establishing positive oral health behaviors and a dental home.

Similarly, study respondents highlighted the importance of recruitment and retention efforts with the local dental school (UB) including opportunities to provide additional training to individuals who have migrated to the United States from foreign countries and need limited training to secure their certification to practice dentistry here. University Pediatric Dentistry, UB’s clinical service arm, also offers specific opportunities for faculty and students to engage in clinical services. Unfortunately, issues associated with reimbursement for dental services make it difficult to implement these strategies at the UB Dental School as administrators identified the rising costs of providing services (including costs of locating and securing teaching faculty) and the diminishing returns. Here, there is a clear need for policy and other advocacy work to create innovative reimbursement models.

Capacity: In addition to workforce concerns, there is limited coordination among existing programs and providers making it difficult to develop a seamless system of dental care within the city of Buffalo. Many providers described the ways in which children and their families get lost in the current system especially when referred for specialty care at another facility. Study respondents frequently cited a need for greater leadership within the dental community and development of partnerships between stakeholders including public health officials, academia, community-based organizations and local dentists and

dental practices. Finally, respondents discussed systems issues including the lack of awareness of existing resources and identified the importance of policy-level advocacy to ensure the future availability of early periodic, screening, diagnosis and treatment funding and the ability to seek reimbursement for services including screening, examination, and treatment.

D. Conclusions

In summary, this work yielded important information about oral health and healthcare of children within the city of Buffalo. It suggests that:

- Social services providers, parents and community-based organizations recognize the need for oral health services within the community.
- Some organizations and groups are providing education and screening services, these efforts are not coordinated or systematic.
- Children and families experience numerous barriers to accessing care, including geographic maldistribution of dental providers, transportation, inconvenient practice hours and poor information about public payor systems.
- Although social services providers, schools and other individuals who are regularly in contact with children can provide educational information and referrals, they are not aware of regulations associated with Medicaid and S-CHIP or which dentists and health clinics accept them.
- General practice dentists are unaware of specialty care providers who accept public insurance.
- UB dental school plays an important role in the provision of outreach, education, and services, both at University-based clinics and community-based centers, but social services providers, administrators, school officials and parents are unaware of the types of services provided, timings or insurances accepted.
- A number of safety net providers have the physical capacity to provide dental services, but do not always have the workforce to provide specialty services, and after school and weekend coverage. In addition, they do not have sufficient marketing, outreach, or community engagement activities.

The Community Health Foundation can play a leadership role in bringing together community-based organizations, organized dentistry and the University of Buffalo together to develop oral health programs that have a high potential for sustainability and support continuity of care. It is vital that all stakeholders, including practitioners, academe, social service providers, parents and policy makers engage in this dialogue if culturally competent and effective models to improve oral health outcomes are to be developed.

E. Recommendations for Investments

We reviewed national best practices as well as data from qualitative interviews, environmental scan, and gaps analysis activities to determine a set of possible areas for investment. In categorizing these activities, we referenced Mouradian, Huebner, Ramos-Gomez, and Slavin (2007) which described four levels of intervention:

1. **Individual Health Services** which seek to integrate comprehensive oral health (i.e., prevention, education, and treatment) into primary dental care, medical and other health and social services settings;

2. **Community-Level Interventions** which focus on efforts to include oral health within a range of other community-level goals that aim at developing social capital and safe, healthy communities;

3. **Policy-Level Interventions** which broaden definitions of children's health and coordinate efforts to improve it; and

4. **Dental Health Community** which provides leadership in addressing children's oral health disparities through training, service engagement, and development of the dental health workforce (i.e., recruitment, retention).

Each of these areas of focus is discussed below along with several recommendations for services and activities.

Individual Health Services

There are a number of barriers to providing children within the city of Buffalo with comprehensive dental care (including education, prevention, examination and assessment, diagnosis, treatment, and follow-up) and the establishment of a dental home. The majority of dental and non-dental providers are providing screenings and relying on referrals for treatment and comprehensive care. However, the dearth of providers in poor neighborhoods, difficult transportation, lack of specialty providers and providers who accept a wide range of insurance coverage make it difficult for children to receive appropriate and timely care. Similarly, there is a need to engage and educate families about oral health while their children are young and they have not developed problematic habits.

Recommendations for Individual Health Services:

1.) Offer children and their families increased opportunities to learn about oral health and health maintenance within settings where they consistently interact. Non-dental providers, especially child care providers, educators, pediatricians, and physicians can play a significant role in oral health education, especially as it relates to prevention, early intervention, signs and symptoms of disease, and anticipatory guidance.

Possible venues include:

- Pre-natal care programs or outreach teams
- Child care settings
- Head Start and WIC programming
- After-school programs
- Community-based organizations serving children, youth, and families

- Physicians offices
- Pharmacies
- Nutritionists

As described above, North Carolina's Into the Mouths of Babes program provides a good model for utilization of non-dental providers to provide oral health education and preventive services. Similarly, a WIC program in Klamath County, Oregon is providing intensive dental health education to pregnant women in the hopes of effecting post-natal oral health care for both the mother and child (Synder, 2009).

2.) Ensure that parents or guardians understand the implications of poor oral health and health maintenance through outreach and education. This should include a more concentrated effort to provide parents and other caregivers with culturally appropriate education about oral health, disease processes, and the roles of personal and professional care.

3.) Facilitated enrollers, who are currently employed by safety net providers, need to be better utilized to ensure that low income families are able to secure available insurance supports for dental care. It appears that enrollers are not educating families about oral health benefits. A program to update enrollers on dental benefits and the importance of making sure families are aware of benefits may be warranted.

4.) Since transportation is clearly a barrier to care, we would also recommend that comprehensive services be provided to children in locations where children and their parents are easily accessible. Moreover, we suggest the importance of providing this care in locations where impoverished families frequently interact as well as the use of innovative models of care delivery, for example services using portable equipment.

Examples include:

- Providing comprehensive dental services at Head Start Centers, WIC and Health Clinics: Activity within Head Start Centers has focused on education, screening, and prevention activities. However, in other communities, these locations as well as existing health and wellness clinics have been successfully used to deliver comprehensive dental care using mobile medical equipment or establishing them as integrated, co-located dental, medical, and social service hubs (Dental Health Foundation, 2008).
- School-based dental services: At present, Kaleida Health does provide services in one school, but these comprise educational and screening activities; we recommend a preventive (e.g., sealant, varnishes) and comprehensive care add-on, which may be done by a part-time dentist or post-doctoral dental trainee. Expansion of school-based services may also be done using portable equipment in order to save costs. A number of successful school-based service models have been established around the country, especially in New York City (W.K. Kellogg Foundation, 2004).

- Use of mobile dental vans: Mobile vans can be costly, but if run efficiently, they can be cost-effective sources for care. The UB School of Dental Medicine has had a well-regarded dental van program which can be used as a model.
- Transportation of children to providers: The care model used by the Boys and Girls Clubs of Buffalo includes transportation of children to a dental provider in the city, which may help mitigate challenges to access associated with transportation. However, in this model, children only receive screenings through the dental office, with little follow-up being undertaken by the family. One of the problems with this program is that parents are seldom present for follow-up care where they are required to provide consent. Alternative strategies are for a dentist or post-doctoral dental trainee to provide dental services at the Clubs using portable equipment and conducting outreach and education with parents to underscore the importance of oral health and healthcare.

5.) Make existing services more accessible by increasing or changing hours of operation. Increasing the number of after-work/school hours available for dental treatment is an important consideration to improve access to care. Late hours and weekend hours will allow parents to accompany children to dental appointments and will facilitate much-needed consent for treatment. Furthermore, in the case of some clinics that only accept Child Health Plus on certain days, increasing the number of days that coverage is accepted will help ease difficulty parents experience in bringing children to appointments. Presently, there is some reticence on the part of providers regarding the provision of additional, non-traditional hours because of staffing concerns and lack of confidence that community members will engage services. Additional staffing, outreach, marketing, and community engagement will likely be needed to ensure increased utilization of current services.

6.) Improve delivery of professionally applied preventive interventions (e.g., sealants and fluoride varnishes) through non-dental providers (e.g. physicians and nurse practitioners) and at locations where children are frequently encountered (e.g. Head Start, WIC, schools).

Community-Level Interventions

The overall objective of this recommendation is to increase awareness of oral health and specific behaviors that support it through community engagement and tracking of indicators.

1.) Support the development of co-located, integrated dental, medical, and social service services within communities of greatest need through the development of comprehensive community-based health centers as well as school-based care. There are several programs in the community which fill this need but need additional resources, training, and technical assistance to reach their potential.

2.) Increase coordination and consistency of children's oral health care through increased dialogue and the development of streamlined referral networks. Such a

system would require an organization willing to be the “owner” of the system, providing timely updates and important linkages between providers and stakeholders.

3.) Employ a social marketing campaign that includes PSAs and radio and television programming which increases oral health care awareness. Successful strategies employed elsewhere include support of the business and foundation community to sponsor these efforts. There are a number of existing efforts from other parts of the country and various public radio and television stations that can be tailored to the specific needs in the target populations in Buffalo, New York.

4.) Increase efforts to educate parents and caregivers about children’s oral health within non-traditional community settings including home-visiting programs, foster care and child welfare programming to ensure that all children’s caregivers receive information about the topic.

5.) Engage community health workers to provide consistent, accurate, and culturally appropriate information about services available in the community as well as assistance in completing necessary paperwork for insurance and identifying resources. Community health workers could provide assistance to “hard to reach” families within communities of poverty and provide basic information on nutrition, oral health maintenance, cleanliness, and safety as well as the NYS Dental Certificate. These individuals can also assist in pre-approval processes and explain which procedures are covered by different insurance mechanisms.

6.) Include tracking of children’s oral health outcomes among community-level health indicators in order to determine service gaps and determine whether efforts are successful.

7.) Work with local businesses to provide low cost/free oral health aides e.g. toothbrushes, toothpaste and floss to families in areas of poverty.

8.) Expand school-based health center capacity to include preventive dental programs such as sealant and fluoride programs and comprehensive dental services (Edelstein, 2009).

9.) Leverage primary medical providers by expanding training and scope to include preventive dental services such as sealants and fluorides.

10.) Engage early childhood providers and social and education programs such as WIC, Head Start and home visitation programs by improving oral health education of these providers and incorporating nutritional guidance and oral health guidance into their programs and outreach efforts.

Policy-Level Interventions

Policy level interventions including community health policy, public health policy, educational policy and local, state, and federal policy are indicated. While many of the interventions outlined in this document are specific to Buffalo, relevant recommendations made by Dr. Burton Edelstein in his work with the Community Health Foundation's oral health initiative in Syracuse are included.

1.) Increase regular communication among local stakeholders (e.g., UB School of Dental Medicine, Kaleida Health, Erie County Department of Health, community-based organizations, and other providers) by establishing a leadership group to address community concerns and provide leadership and advocacy. The W.K. Kellogg Foundation was able to successfully develop and nurture local advocacy and oral health leadership through its Community Voices Initiative (Kellogg, W.K, 2009).

2.) Support the development of community resource guides (including procedural coverage related to public benefits) and other linkage efforts. A major barrier to effective screening and referral is the lack of knowledge of existing resources and referral systems. Our preliminary work indicated that a resource guide should be developed and consistently updated to ensure effective referrals. Foundations and other community groups could use this resource to describe the scope of resources available in the community and to leverage their activities in light of policy recommendations.

3.) Support advocacy and other efforts to address reimbursement for screening, evaluation and treatment of children's and adult oral health problems. Given the current fiscal crisis, dental services are being targeted for removal from public payor systems, especially for adults. It is important to highlight that dental diseases are infectious; if children are to be dentally healthy, their families and caregivers must necessarily have access to dental health services.

4.) Engage legislators, State Dental Department and local dental organizations to modify the legislation around the Dental Health Certificate to include a dental service provision for children who require follow-up care. While the intent of this legislation is laudable, it will not have an impact on oral health or access to healthcare unless the Certificate becomes a requirement for school enrollment and monies to provide follow-up care are made available for children who are uninsured or underinsured.

5.) Advocate for public pay systems to reimburse for dental care aides such as toothpastes, toothbrushes and floss. Presently, these types of resources are not "purchasable" using Food Stamps (US Department of Agriculture, 2009).

6.) Advocate for data collection on children's oral health including health conditions, functioning, and health potential to inform future oral health policy. Several potential areas for further consideration are: a parent/consumer survey to obtain better data on perceptions of the current system, needs, and interest in services; a more focused examination of the capacity of existing services; and identification of potential funding sources.

7.) Gain policymakers' interests by working with local advocacy groups, parents and other stakeholders to develop personal stories, advocate for press coverage and work with local celebrities (Edelstein, 2009).

8.) Leverage federal S-CHIP provisions: some of these provisions such as oral health education for parents of newborns, development of quality measures and demonstration projects can serve as examples for state and local efforts to improve children's oral health (Edelstein, 2009).

Dental Health Community

A challenge to the provision of comprehensive care is the reported shortage of specialty providers, and a reported high turnover of dental professionals. While some models provide care using low-cost providers such as post-doctoral residents, they do not allow for continuity of care and familiarity which are vital to the building and development of a dental home. Efforts should be made to increase leadership in addressing children's oral health disparities through training, service engagement, and development of the dental health workforce (i.e., recruitment and retention).

1.) Offer opportunities for dental students and post-doctoral trainees to learn about the health determinants and engage in community-based and service learning activities within communities of poverty. In doing so, students will secure appropriate training and experience while meeting a critical need within the Buffalo community.

2.) Create new partnerships connecting UB and ECC with community-based organizations that would allow for student training while offering a variety of dental services to poor children and their families. Engage in research activities to track health outcomes and to identify and make recommendations to address health disparities.

3.) Support the development of innovative training mechanisms for foreign trained dentists and other dental students that would require them to remain in the area after receiving US certification.

4.) Work with dental educators and other groups to develop culturally appropriate competency training and educational materials for dental students, dental educators and non-dental providers.

5.) Support the UB Dental School, especially the Department of Pediatrics in playing a leadership role in community engagement, education and preventive and comprehensive service delivery. In addition to playing an enhanced role in community engagement and outreach, the school is a natural partner for exploring and developing strategies to recruit, train and retain local dental providers, especially traditionally underrepresented providers.

6) Work with existing dentists in South Buffalo and environs to expand their practices to include Medicaid and S-CHIP eligible children and families.

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ATTACHMENT A: FORMAL INTERVIEW RESPONDENTS AND AFFILIATIONS

- Dr. Jayanth Kumar, New York State Dental Director
- Dr. Richard Buchannan, Dean, Office of the Dean and Professor, Department of Restorative Dentistry; University at Buffalo Dental School
- Dr. Joseph Bernat, Chair, Postdoctoral Program Director and Clinical Associate Professor, Department of Pediatric and Community Dentistry
- Dr. Dian Chin-Kit Wells, Clinical Assistant Professor, Department of Pediatric and Community Dentistry
- Heidi Schmidt, Community Outreach Coordinator, Department of Pediatrics and Community Dentistry
- Cynthia DuPont, Director, UB CARES Program
- Britt Holdaway, Social Worker, UB CARES Program
- Karen Braswell, Manager, School-Health Centers, Kaleida Health
- Glenda Meeks, Manager, Health Education, Kaleida Health
- Sue Ventresca, Director of Health Related Services, Buffalo Public Schools
- Dr. Helen Ibrahim, Director of Dental Services, Community Health Center of Buffalo
- Rachel Charette, Human Relations Director, Community Health Center of Buffalo
- Joanne Haefner, Executive Director, Northwest Buffalo Community Health Center
- Dr. Kathleen Bathasar, Director, Northwest Buffalo Community Health Center – Dental Department
- Dr. Jim Wieland, Dentist, Northwest Buffalo Community Health Center – Dental Department
- Judy Fiorella, Office Manager, Northwest Buffalo Community Health Center
- Rebecca Smith, Dental Hygienist, Northwest Buffalo Community Health Center
- Rebecca Rowe, Assistant Executive Director, Boys and Girls Clubs of Buffalo
- Rachel Mancuso, Dental Project Staff, Boys and Girls Clubs of Buffalo
- Mary Pasquel, Erie County Department of Health
- Janet Welsh, Office Manager, Baker Victory Services Dental Services
- Marlies Weslowski, Executive Director, Lt. Col. Matt Urban Center
- Lory Grahner, Niagara Child Care
- Teresa Sanders – My Kids Child Care Development Center
- Members of a Consumer Advisory Group (6 parents of young children) affiliated with Community Action for Prenatal Care, Buffalo Pre-natal Perinatal Network

ATTACHMENT B

A. Dental Organizations/Dental providers that serve children

For this project we are interested in the dental and oral health of children in the City of Buffalo and the current systems' capacity to meet children's dental and oral needs in a timely and appropriate manner.

1) Please tell me a little bit about yourself and your role within the organization.

    a. Can you tell me about your organization's work with children? Do you provide direct dental services to children? If no, do you provide dental related or dental outreach services to children
    b. Approximately how many children do you serve per year? How many of your patients/clients are children from the city of Buffalo?

2) What are the most pressing dental issues that you see in children:
        1. Aged 0- 5 years
        2. 6 – 10 years
        3. Teens

3) Do you face any challenges – related to capacity –in delivering dental services to children from the city of Buffalo?
    a. Prompts: are challenges related to staffing, equipment, appointments, payment etc
    b. Do you maintain waiting lists for dental services?
    c. Are there any dental services that children in Buffalo need that you are not currently able to offer?
        1. If yes, what are they?
        2. How do you currently handle these situations?

4) Thinking about the children in Buffalo you currently serve, what proportion of them come from economically disadvantaged households or communities of poverty?
    a. Approximately what proportion of your pediatric patients are Medicaid/Medicaid-eligible or uninsured?
    b. What kinds of dental or oral health issues do you see in children in communities of poverty compared to other children in the city of Buffalo?
    c. Do you face any specific challenges serving this group? Think about challenges in terms of
        1. Dental/oral needs
        2. Dental services
        3. Social or wrap around services
        ii. Do your staff face or report challenges serving this group?

5) Now, I am interested in hearing about some of the challenges these economically disadvantaged households face in trying to secure dental assistance for their children.

Thinking about the people you have interacted with, what kinds of issues or barriers have patients or their parents identified?

6) Have you thought about possible remedies for these issues? If you could make it happen instantly, what kinds of changes would you like to see made in the current system? Please address:
    a. office-based
    b. school-based
    c. county or city-based recommendations for change, if any

7) Are you aware of the new school regulations around dental examinations for children enrolling in schools in NY state?
    a. Do you agree with this regulation?
    b. Do you think the City of Buffalo has the capacity to deal with both the examinations and potential need for dental services arising from these examinations?

B. Social Services Providers/Schools

For this project we are interested in the dental and oral health of children in the City of Buffalo and the current systems' capacity to meet children's dental and oral needs in a timely and appropriate manner.

1) Please tell me a little bit about yourself and your role within the organization.

2) Can you tell me about your organization's work with children?
    a. What kinds of services do you provide to children?
    b. Approximately how many children do you serve per year? How many of your clients are children from the city of Buffalo?
    c. What proportion of the children that you serve come from economically disadvantaged households or communities of poverty?

3) Do you see or do children or their families report dental problems or oral health related quality of life problems such as pain, difficulty eating or chewing
    a. What are the most pressing dental issues that you see in children:
        1. Aged 0- 5 years
        2. 6 – 10 years
        3. Teens
    b. What kinds of dental or oral health issues do you see in children in communities of poverty compared to other children in the city of Buffalo?

4) Now, I am interested in hearing about some of the challenges these economically disadvantaged households face in trying to secure dental assistance for their children. Thinking about the people you have interacted with, what kinds of issues or barriers have patients or their parents identified?

5) Have you thought about possible remedies for these issues? If you could make it happen instantly, what kinds of changes would you like to see made in the current system? Please address local and county or city-based recommendations for change, if any

6) Are you aware of the new school regulations around dental examinations for children enrolling in schools in NY state?
    a. Do you agree with this regulation?
    b. Do you think the City of Buffalo has the capacity to deal with both the examinations and potential need for dental services arising from these examinations?

C. Parents groups/Community Activists
For this project we are interested in the dental and oral health of children in the City of Buffalo and the current systems' capacity to meet children's dental and oral needs in a timely and appropriate manner.

1) Please tell me a little bit about yourself or your organization?

2) Can you tell me about your organization's work with children?
    a. What kinds of services do you provide to children?
    b. Approximately how many children do you serve per year? How many of the children are from the city of Buffalo?
    c. What proportion of the children that you serve come from economically disadvantaged households or communities of poverty?

3) Do you see or do children or their families report dental problems or oral health related quality of life problems such as pain, difficulty eating or chewing?
    a. What are the most pressing dental issues that you see in children?
    b. What kinds of dental or oral health issues do you think children in communities of poverty have compared to other children in the city of Buffalo?

4) Now, I am interested in hearing about some of the challenges these economically disadvantaged households face in trying to secure dental assistance for their children. Thinking about the people you have interacted with, what kinds of issues or barriers do you think they experience?

5) Have you thought about possible remedies for these issues? If you could make it happen instantly, what kinds of changes would you like to see made in the current system? Please address local and county or city-based recommendations for change, if any

6) Are you aware of the new school regulations around dental examinations for children enrolling in schools in NY state?
    a. Do you agree with this regulation?

b. Do you think the City of Buffalo has the capacity to deal with both the examinations and potential need for dental services arising from these examinations?

ATTACHMENT C

Good morning –

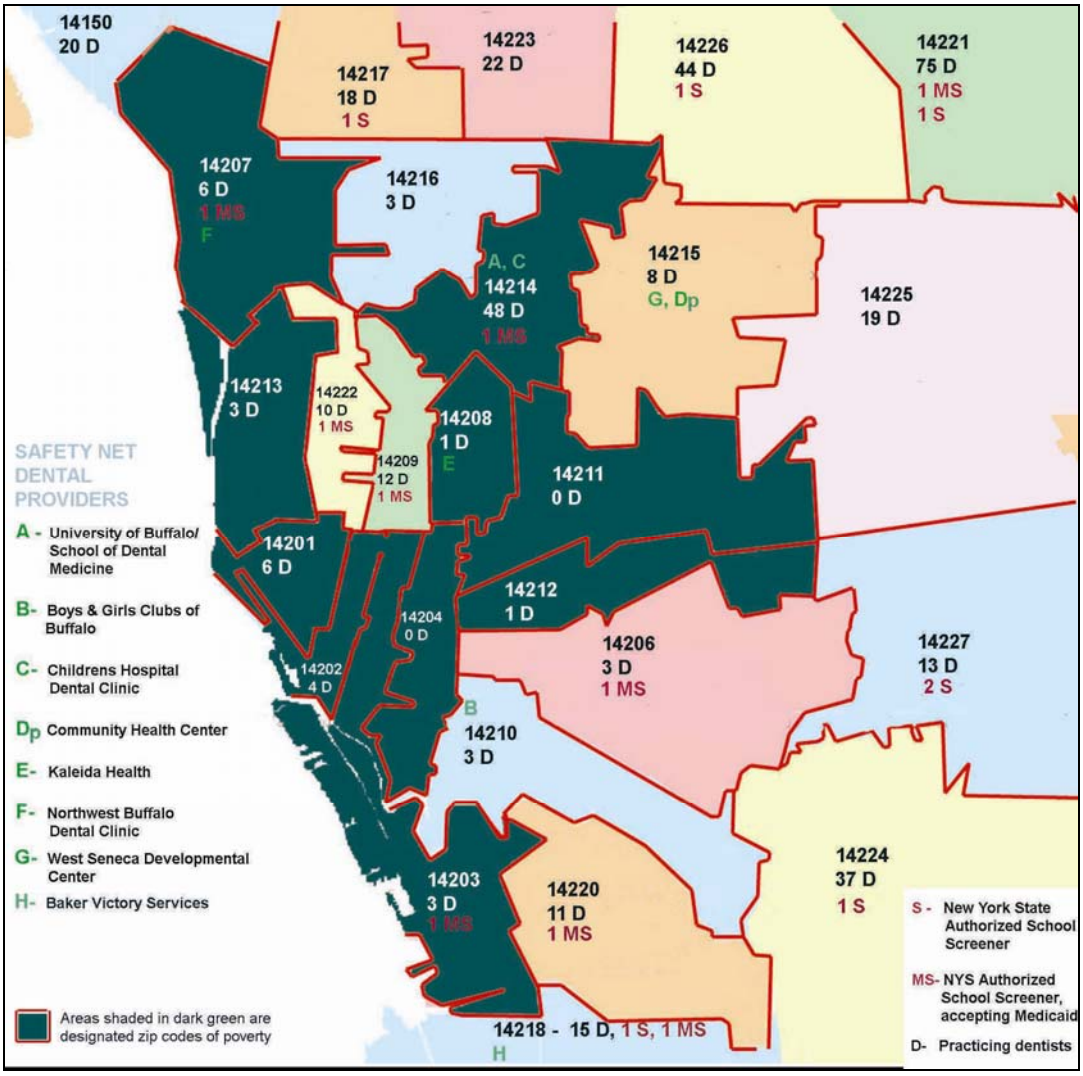
I am calling on behalf of Dr. Ahluwalia at Columbia College of Dental Medicine and the Community Health Foundation of Western and Central New York.

We understand you are one of the preferred providers for dental screening for children attending school in Buffalo. May we ask you a few questions about this? It will take just a few minutes.

1. How was your office identified as a preferred provider?
2. Does your office accept Medicaid?
3. Have you had requests for screening since the beginning of the school year?
    a. If yes, about how many children have you seen under this program since the beginning of the school year?
    b. In general, how would you characterize their oral health?

Thank you for your assistance.

APPENDIX D: Geographic Mapping of Dental Services in Buffalo, NY



Appendix E: Lay of the Land Environmental Scan Materials

Lay of the Land – Dental Services Specifically Designed for Children in Communities of Poverty

Organization and Program Name	Description	Level of Engagement	Use of Nationally-Identified Intervention Strategies	Current Engagement
Baker Victory Services Dental Center	Offers cleanings, crowns, fillings, bridges, extractions, dentures and root canals; Services for patients with special needs available as well as specialized services for minor children	Individual Health Services	Availability of comprehensive care within community settings (including fillings, extractions, restorative care)	Few preventative strategies; offers specialized care to high needs children
Boys and Girls Clubs of Buffalo Collaboration with Community Health Center of Buffalo	Dental education is included as a component of nutrition and health curriculum; Connected to Community Health Center of Buffalo for dental screening, examinations, and treatment	Individual Health Services	Oral health education at child care, community, and school-based settings. Use of innovative models to increase access to dental services	Limited to small group of students per month; Dental care not available on site; Parent interaction is limited; Few families establish a "Dental Home"
Buffalo General Oral Surgery Clinic	Oral surgery consults and surgery; Services limited to older children (teens)	Individual Health Services		Child-based services are extremely limited
Community Health Center of Buffalo Dental Services	Cleanings, oral hygiene instruction, sealants for children, fillings, dentures/partials, x-rays; Specialized services for minor children (particularly teens); Collaboration with Boys and Girls Clubs of Buffalo to reach children in communities of poverty	Individual Health Services Community-Level Interventions	Availability of comprehensive care within community settings (including fillings, extractions, restorative care) Co-located, integrated dental, medical, mental and social services in communities of greatest need	Use of comprehensive services among patients is limited; Few families have established Center as their "Dental Home" – including those associated with the Boys and Girls Clubs of Buffalo; limited hours of service
Erie County Community College Dental Clinic	Individual dental instruction, cleanings, fluoride treatment, sealants, dental x-rays, and recommendations	Individual Health Services	Use of a full complement of preventative services (including cleaning, sealants, and fluoride)	Limited times available for children 5-17 years of age and must be accompanied by adult
Erie County Community College Dental Hygienists Certificate and Dental Assisting Program	Offers two year degree and certificate program to train students in dental hygiene or assisting	Dental Health Community	Encourage Dental Students to Participate in Community-Based Volunteer Efforts	Clinic services for children are very limited; hours of operation are limited; location of services

Erie County Department of Health Field Trip to Dental Clinic	2nd and 4th graders in Buffalo Public Schools are transported to Erie County Dental Clinic (Jesse Nash Clinic) to learn about good oral hygiene and receive a screening; a note is provided to parents if the need for additional care is identified	Individual Health Services	Oral health education, screening, and referral for dental care at child care, community, and school-based settings.	One-time engagement each year; Dental care not available on site
Erie County Department of Health Jesse Nash Health Center	Preventative dental services including cleanings, examinations, x-rays, prophylaxes, fillings, and extractions	Individual Health Services Community Level Interventions	Use of a full complement of preventative services (including cleaning, sealants, and fluoride) Co-located, integrated dental, medical, mental and social services in communities of greatest need	Limited outreach, marketing, and engagement within community; underutilized as a "medical/dental" home
Good Neighbors Clinic Harvest House	Health clinic offers limited dental hygiene education and screenings for clients and their families; a note is provided to parents if the need for additional care is identified	Individual Health Services Community-Level Interventions	Oral health screening, education, and referral for dental care at child care, community, and school-based settings. Co-Located, Integrated Dental, Medical, and Social Services in communities of greatest need	Limited to current clients; Follow-up dental care not provided on site; referral only Limited connections between medical, dental, and social services
Jericho Road Ministries Jericho Road Family Practice	Limited dental services available to program participants (primarily immigrants and refugees)	Individual Health Services	Provision of information about dental care and services to underserved population by culturally competent staff	One dentist available at the clinic; Limited dental services available on site
Kaleida Health School-based Health Centers	Plan to offer dental screenings and sealant program in 13 school-based health centers (10 within elementary schools and three within high schools); Dentist comes from UB Pediatric Dentistry – brand new program	Individual Health Services Community-Level Interventions	Oral health screening and referral for dental care at child care, community, and school-based settings. Co-Located, Integrated Dental, Medical, and Social Services in communities of greatest need	Currently operational in one school (Westminster) - limited; Challenges associated with program launch Planned activities will serve high need populations; limited family involvement
Kaleida Health Deaconess Dental Clinic	Routine hygiene and treatment of cavities and/or teeth replacement	Individual Health Services	Availability of comprehensive care within community settings	Limited children's programming (teens); primarily serving adults

Kaleida Health Family Dental Clinic at Sheehan	Cleanings, oral hygiene instruction, sealants for children, fillings, dentures/partials, x-rays; Specialized services for minor children	Individual Health Services Community-Level Interventions	Use of a full complement of preventative services (including cleaning, screening, and sealants) Availability of comprehensive care within community settings (including fillings, extractions, and restoration) Co-located, integrated dental, medical, mental and social services in community greatest need	Program is very new; linkages between different departments have not fully developed; opportunity to make medical/dental home
Kaleida Health Judge Joseph S. Mattina Community Health Center	Routine care and cleaning, fillings, x-rays, and exams	Individual Health Services	Availability of comprehensive care within community settings (including fillings, extractions, and restoration)	Limited outreach, marketing, and engagement within community; underutilized as a "medical/dental" home
Kaleida Health Pediatric Dental Center (South Buffalo Mercy)	Routine care and cleaning, fillings, x-rays, and exams; Specialized services for minor children	Individual Health Services	Use of a full complement of preventative services (including cleaning, screening, and sealants) Availability of comprehensive care within community settings (including fillings, extractions, and restoration)	Limited outreach, marketing, and engagement within community; underutilized as a "dental" home; use of UB-affiliated dentists
Lifetime Health Bertha S. Laury Dental Clinic	Offers cleanings, preventative care, fillings, minor oral surgery, extractions, and teeth whitening (limited care for children)	Individual Health Services Community Level Interventions	Use of a full complement of preventative services (including cleaning, screening, and sealants) Availability of comprehensive care within community settings (including fillings, extractions, and restoration) Co-located, integrated dental, medical, mental and social services in community greatest need	Limited outreach, marketing, and engagement within community; underutilized as a "medical/dental" home; limited number of dentists available

Northwest Buffalo Community Health Center	Preventative dental exams, fillings, extractions, routine cleanings, restorative dentistry including crowns, bridges, dentures and root canals; Services for patients with special needs available; Specialized services for minor children; Engagement with Head Start program	Individual Health Services Community Level Interventions	Oral health screening, education, and referral for dental care at child care, community, and school settings Use of a full complement of preventative services (including cleaning, screening, and sealants) Availability of comprehensive care within community settings (including fillings, extractions, and restoration) Co-located, integrated dental, medical, mental and social services in community greatest need	Limited outreach, marketing, and engagement within community; underutilized as a "medical/dental" home; would like to develop additional programming to educate and screen younger children (Head Start located in building)
UB School of Dental Medicine Mobile Dental Van	Dental van which operates out of Ripley, NY and provides dental education, screening and treatment on-site	Individual Health Services	Oral health screening, education, and referral for dental care at child care, community, and school settings Availability of comprehensive care within community settings (including fillings, extractions, and restoration) Use of Innovative Models to Increase Access to Dental Services (e.g., mobile dental services)	Challenges associated with operating a mobile unit include repairs and workspace issues; innovative model
UB School of Dental Medicine Infant Dental Health	Provides information to new mothers about infant oral health	Individual Health Services	Provision of Information about Dental Care/Services for New Mothers of Infants	Limited engagements in the community; reaches approximately 40 families per year
UB School of Dental Medicine Teddy Bear Clinic	Education on important dental health habits (held at Kaleida Health Family Dental Clinic)	Individual Health Services	Oral health education at child care, community, and school-based settings.	One-time only event

UB School of Dental Medicine Head Starts	A team of dental practitioners and students go to each Head Start to provide dental screening and results of dental screening are sent home to parents to review	Individual Health Services	Oral health education, screening, and referral for dental care at child care, community, and school-based settings.	One-time only events; dental care not available on –site; referral only
UB School of Dental Medicine Counseling, Advocacy, Referral, Education, and Service (CARES) Program	Provides information and linkages to community resources to address barriers to receipt of oral health care (UB School of Social Work and UB School of Dental Medicine)	Policy-Level Interventions	Ensure coordination across oral health and other health programs (Inter-agency collaborations)	Coordination is generally limited to insurance and social service system; innovative model for service referral
UB School of Dental Medicine Give Kids a Smile Day	Give free dental services to children under 18 years of age who do not have dental insurance or who have urgent dental needs – services include cleanings, x-rays, sealants, fillings, extractions, and orthodontic consultations	Individual Health Services	Use of a full complement of preventative services (including cleaning, screening, and sealants) Availability of comprehensive care within community settings (including fillings, extractions, and restoration and orthodontia)	One-time only events; families are unable to establish a dental home; rely on once-yearly services as dental health provider; highly coordinated and resource intensive event
UB School of Dental Medicine Area Health Education Centers	UB Summer Academy provides hands-on experience in dentistry to 50 high school students interested in dental careers	Dental Health Community	Expansion of partnerships within communities to address health and health-related disparities	Early engagement of potential dental students
UB School of Dental Medicine 8th District Dental Society Smile Education Day	Visit 3rd and 5th grade classrooms within 8 counties of WNY to provide dental education	Individual Health Services	Oral health education at child care, community, and school-based settings.	One-time only event; Dental care not available on-site
UB School of Dental Medicine Community Outreach Team	Provides dental education in the community one day per week to schools and community-based organizations	Individual Health Services	Oral health education at child care, community, and school-based settings.	Limited engagements in the community; location is not need based
UB School of Dental Medicine Comprehensive Oral Healthcare for Disabled Youth (CODHY) Program	Designed for children who have medical or physical disabilities including cleanings, hygiene instruction, restorative treatment and dietary counseling	Individual Health Services	Oral health education, screening, and referrals at child care, community, and school-based settings. Availability of comprehensive care within community settings Use of innovative models to increase dental services	Innovative model for special population services

UB School of Dental Medicine UB School of Medicine Lighthouse Clinic (Dental/Medical)	Provide free dental screenings to residents on Buffalo's West Side	Individual Health Services	Oral health education, screening, and referrals at child care, community, and school-based settings.	Programming limited to Lighthouse Program Participants or residents of West Side
UB School of Dental Medicine Bethel Head Start My Dentist, My Friend	4th Year Dental Students with Pediatric Dental Minors visit Head Start classrooms to desensitize children to fears of going to first dental visit	Individual Health Services Dental Health Community	Oral health education at child care, community, and school-based settings. Encourage Dental Students Participation in Inter-professional, Community-based Volunteer and Outreach Efforts	One-time engagements; limited to students enrolled in Bethel Head Start Engages 4th Year Dental Students in activities; Earlier engagement is preferred
UB School of Dental Medicine Advanced Education in Pediatric Dentistry	Hospital-based certificate program fully accredited by ADA Commission on Dental Accreditation	Dental Health Community	Ensure that Dental Students Learn about the Unique Characteristics of Children Encourage Dental Students Participation in Community-Based Volunteer and Outreach Efforts	Specialized training; opportunities to expand research partnerships within communities to address health disparities; few policy-related activities
UB School of Dental Medicine Pediatric and Community Dentistry Locations: • Women and Children's • South Buffalo Mercy • Family Dental – Sheehan • UPD Niagara Falls • UPD Getzville • UPD East Aurora • UB Main Street Campus • School Health Centers	Preventative dental exams, fillings, extractions, routine cleanings, restorative dentistry including crowns, bridges, dentures, root canals, and oral surgery (Women and Children's Hospital); Specialized services for minor children; Total of 87 chairs	Individual Health Services Dental Health Community	Use of a full complement of preventative services (including cleaning, screening, and sealants) Availability of comprehensive care within community settings (including fillings, extractions, and restoration and orthodontia) Dental students required participation in community-based and service learning activities starting early in dental school Ensure that dental students learn about the unique characteristics of children	Challenges associated with health insurance coverage for children and families; opportunities to expand research partnerships within communities to address health disparities; few policy-related activities