

# ABSTRACTS

## CONTRIBUTED PRESENTATIONS: DENTAL COVERAGE AND ACCESS TO CARE - OPPORTUNITIES FOR POLICY CHANGES AND ORAL HEALTH IMPROVEMENT

Abstract #: 1

### NEW OPPORTUNITIES AND INCREMENTAL STEPS TOWARDS ORAL HEALTH REFORM

**Author(s):** Meg Booth, Children's Dental Health Project and Shelly Gehshan, Pew Center on the States

**Objective:** To inform state leaders about the opportunities provided in recent Congressional efforts and to engage in a discussion about what state efforts are left to be done.

**Methods:** Given significant changes that have taken place in recent months with the beginning of a new Presidential Administration, and new Congress and state legislatures, the Children's Dental Health Project will review the potential impact on state oral health programs from the recent passage of SCHIP reauthorization and a federal economic recovery package. These incremental steps toward larger reforms and existing reform opportunities available to states to improve dental access are a focus of and will be outlined by the new Dental Health Initiative at Pew Charitable Trusts.

**Results:** Efforts continue to grow in the pursuit of implementing oral health reforms. The reauthorization of SCHIP with the inclusion of the dental provisions provides states new opportunities and requirements to improve access, quality and accountability of SCHIP-supported dental care. In addition, Congress released an economic recovery package that includes, although not dental-specific, opportunities for state oral health programs. Pew's new initiative will be investing their energies in national and state efforts that take the new and existing opportunities to implement systems changes that will lead to improved access to dental care and therefore will identify strategies would help to accomplish that goal.

**Conclusions:** As state oral health programs face difficult fiscal decisions, opportunities remain available and have expanded to address access and quality of dental care for children. This session will provide an overview of those opportunities that are available and will provide the opportunity for states to discuss what still needs to be done.

**Funding:** HHHS/HRSA/Maternal and Child Health Bureau (as the National Oral Health Policy Center)

Abstract #: 2

### DENTAL UTILIZATION FOR MEDICAID-ENROLLED CHILDREN WITH A CHRONIC HEALTH CONDITION

**Author(s):** Donald L. Chi, DDS, Univ of Iowa Depts of Pediatric Dentistry and Preventive and Community Dentistry and Public Policy Center; Elizabeth T. Momany, PhD, Univ of

Iowa Public Policy Center; John M. Neff, MD, Univ of Washington Dept of Pediatrics; Michael P. Jones, PhD, Univ of Iowa Dept of Biostatistics and Public Policy Center; Rebecca L. Slayton, DDS, PhD, Univ of Iowa Dept of Pediatric Dentistry; Karin Weber-Gasparoni, DDS, MS, PhD, Univ of Iowa Dept of Pediatric Dentistry; Peter C. Damiano, DDS, MPH, Univ of Iowa Dept of Preventive and Community Dentistry and Public Policy Center

**Objective:** Although previous work identifies dental care as the most common unmet need among special needs children, few studies have examined dental utilization for publicly-insured children with a chronic health condition (CHC). Our objective was to estimate dental utilization for Medicaid-enrolled children with a CHC.

**Methods:** This descriptive study estimated dental utilization for children aged 3-17 who were enrolled in the Iowa Medicaid program for 11 or 12 months in 2005 (N=107,605). The 3M Clinical Risk Grouping (CRG) software (v.1.6) was used to classify each enrollee into one of four mutually exclusive groups based on medical diagnostic and health service utilization data found in each enrollee's medical inpatient, medical outpatient, and pharmacy claims from 01/01/03-12/31/05. The four comparison groups were: non-medical utilizers (children with no medical or pharmacy claims), healthy children (those with at least one medical or pharmacy claim and no evidence of an acute or CHC), children with an acute condition, and children with a CHC. The outcome variable was use of any dental care in 2005.

**Results:** Overall, 54.7% of children utilized dental care (n=58,874). Among the non-medical utilizers, 28.7% accessed dental care, whereas 52.2% of healthy children and similar proportions of those with an acute condition or CHC used dental care in 2005 (58.6%).

**Conclusions:** These findings suggest that children who utilized medical care or had a CHC utilized dental care at higher rates than those without a CHC. Future research should further clarify the impact of health status on the relationship between medical and dental utilization for publicly-insured children.

**Funding:** NIH Grant T32-DE014678

Abstract #: 3

### WISCONSIN MEDICAID POLICY CHANGE LEADS TO INCREASED ACCESS TO FLUORIDE VARNISH TREATMENT

**Author(s):** Christopher Okunseri, BDS, MSc, DDPHRCSE, FFDRCSI; Dept of Clinical Services, School of Dentistry, Marquette University; Aniko Szabo, PhD; Scott Jackson, MS; Div of Biostatistics, Dept of Population Health, Medical College of Wisconsin; Nicholas M. Pajewski Ph.D; Section on Statistical Genetics, Univ of Alabama at Birmingham; Raul I Garcia DMD, MMSc, Dept of Health Policy and Health Services Research, Boston Univ School of Dental Medicine, Boston MA

**Objective:** Fluoride varnish treatment (FVT) is effective in reducing dental caries; however children covered by Medicaid experience a number of barriers to the receipt of preventive dental services. The involvement of medical (physicians/nurses) professionals was proposed as a means of expanding access to FVT. In 2004, Wisconsin Medicaid policy changed to permit reimbursing medical providers for FVT. The objective is to determine the extent by which a state-level policy change in reimbursement may increase access to FVT for Medicaid enrolled children.

**Methods:** The Electronic Data Systems of Medicaid Evaluation and Decision Support database for Wisconsin from 2002-2006 was used. We analyzed claims for FVT for children between the ages of 6 months to 6 years, comparing rates in the pre-policy period (2002-2004) to the period (2004-2006) following the policy change.

**Results:** Medicaid claims for FVT in 2002-2003 totaled 3,634. Following the policy change, claims for FVT increased to 19,421, with 40% submitted by medical care providers (MCP). FVT rates increased for children of both sexes and all ages, rising from 16 per 1000 person-years of enrollment in 2002-2003 to 99 per 1000 person-years in 2006. Overall, 52% of the increase in FVT was attributable to MCP. The largest increase was seen in children 6 months to 3 years of age, among whom MCPs were responsible for 77% of the increase.

**Conclusions:** A state-level Medicaid policy change was followed by both a significant involvement of medical care providers and an overall increase in FVT. Children under 3 years appear to benefit the most from the involvement of MCP. Similar policy change in other states may also lead to increase access to children's primary preventive dental services.

**Funding:** HRSA Maternal and Child Health Bureau grant R40MCO8955 and by NIH grants K24 DE000419, U54 DE014264 and U54 DE019275

#### **Abstract #: 4**

### **COLLABORATIVE PROJECT TO IDENTIFY AT-RISK POPULATIONS AND ACCESS/USE OF DENTAL SERVICES: IMPLICATIONS FOR PROGRAM PLANNING, EVALUATION AND POLICY RECOMMENDATIONS**

**Author(s):** Matthew N. Warren, MA, American Dental Association, and Barbara J.S. Greenberg, MA, MS, New York State Dept of Health Bureau of Dental Health

**Objective:** To improve oral health services for at-risk populations through a collaborative partnership between the American Dental Association (AMA) and the New York State (NYS) Department of Health (DOH).

**Methods:** ADA maintains a complete census on U.S. dentists and population statistics, while NYS DOH maintains extensive Medicaid dental claims data. ADA included NYS's provider information and maternal/child dental claims to produce area-specific maps and tables on oral health needs of the maternal/child population and utilization of services, target population demographics, and location of Medicaid-approved and active dentists.

**Results:** Data on maternal/child demographics, oral health status/utilization and Medicaid-active dentists were copied to CD ROMs and sent to local health departments, hospitals, Area Health Education Centers, and community partners. Information will be used to more effectively identify oral health priorities within communities and form collaborations to develop and monitor programs, interventions and services to best meet identified needs and gaps in services.

**Conclusions:** This collaboration provided previously unavailable tools to identify highest need areas for oral health services, dental workforce adequacy, and dental shortage areas; focus limited resources in highest need areas; and develop services/referral networks for at risk populations in high need areas and monitor access/utilization of dental services.

**Funding:** Health Research, Inc., Riverview Center, 150 Broadway, Ste 560, Menands, NY 12204-2719

#### **Abstract #: 5**

### **EMERGENCY DEPARTMENT VISITS FOR PREVENTABLE DENTAL CONDITIONS IN CALIFORNIA**

**Author(s):** Lisa Maiuro, PhD, Health Management Associates, Leonard Finocchio, DrPH, California HealthCare Foundation.

**Objective:** Assess the extent to which Californians use the ED for ambulatory care sensitive (ACS) dental conditions.

**Methods:** Cross-sectional analysis of California Office of Statewide Health Planning & Development emergency department data (2005-2007) to ascertain use of ED services for specific dental conditions identified by ICD-9 codes.

**Results:** \* There were over 80,000 ED visits for dental ACS conditions in 2007, having increased 16% over the previous three years. \* ED visits for dental ACS conditions were more frequent than ED visits for diabetes ACS conditions but less frequent than ED visits for asthma ACS conditions. \* Medicaid beneficiaries and the uninsured represent nearly two-thirds of all ED visits. The number of visits for these two groups has risen about 20% over three years. \* Women had the highest ED visit rates for ACS dental conditions from 2005 to 2007: 364 per 100,000 for ages 18-34. \* Blacks have a disproportionately high number of ED visits for ACS dental conditions.

**Conclusions:** \* In some parts of California, visits to the ED for preventable dental conditions are more frequent than visits for other other ambulatory care sensitive conditions. \* Good oral health can be maintained with access to primary dental care. Without routine access, however, people may use hospital EDs that are costly and inadequately equipped and staffed to handle dental problems. \* Women 18-34 have high rates of ED utilization compared to the rest of the population. Evidence linking poor oral health to adverse birth outcomes suggest that it is important for women of child bearing age have access to appropriate dental care. \* Ensuring access through dental insurance and an adequate supply of dental providers is critical to both oral health and overall health.

**Funding:** California HealthCare Foundation

## CONTRIBUTED PRESENTATIONS: DENTAL WORKFORCE - STATE ROLES IN ASSESSMENT AND POLICY DEVELOPMENT

### Abstract #: 6

#### AN ASSESSMENT OF HAWAII'S DENTAL WORKFORCE: CARE FOR THE DISABLED

**Author(s):** Linda M. Kaste, DDS, MS, PhD, UIC COD and IHRP, Gayle R. Byck, PhD, UIC IHRP, Karen I. Hu, DDS, Susan L. Tengan, RDH, BA, Dental Health Div, Hawaii State Dept of Health, Karin J. Opacich, PhD, MHPE, OTR/L, UIC IHRP, Mark H.K. Greer, DMD, MPH, Dental Health Div, Hawaii State Dept of Health

**Objective:** In early 2008, a dental workforce survey was conducted in Hawaii as part of a statewide assessment to examine availability, accessibility and need for oral care services, particularly for persons with disabilities.

**Methods:** A convenience sample of dentists completed a questionnaire distributed at the Hawaii Dental Association (HDA) annual meeting or through oral health task force meetings and personal contact. Descriptive analysis was completed for 313 dentists who were non-military and currently practicing with a permanent, temporary, or community service Hawaii dental license.

**Results:** Respondents were similar to HDA members in distribution of specialty, age-group, and location of dental school. More respondents were general practitioners (84%) than for the national average (79%), with almost two-thirds without post-graduate training. Almost half (47%) attended dental school in the Midwest. Racial/ethnic composition of the dental workforce differed from the state's population with higher proportions of Japanese and Chinese and lower Hawaiian dentists. Almost a quarter (23%) volunteered to serve uninsured or underinsured patients. Medicaid participation was reported by 34% with higher representation among factors such as being on Oahu, a specialist, female and a recent graduate (2000+). Willingness to treat disabled populations ranged from 88% for frail elderly, 72% for developmentally disabled adults, 66% for children with disabilities to 55% for chronically mentally ill.

**Conclusions:** A strong commitment exists among Hawaii's dental workforce towards provision of care for the state's disabled population. Assurance should be made for optimal educational preparation and geographic accessibility.

**Funding:** Hawaii State Legislature

### Abstract #: 7

#### STATEWIDE DENTAL WORKFORCE PLANNING ACROSS THE URBAN-RURAL CONTINUUM: A KANSAS CASE STUDY

**Author(s):** Kim S. Kimminau, PhD, Univ of Kansas Medical Center, Anthony Wellever, MA, Univ of Kansas Medical Center, Katherine Weno, DDS, JD, Office of Oral Health, Kansas Dept of Health and Environment, K. Allen Greiner, MD, MPH, Univ of Kansas Medical Center, and Joshua Marr.

**Objective:** To provide information on the supply and geographical distribution of dentists, individual and practice characteristics, plans for retirement, and opinions on access to dental services and emerging dental policy issues for statewide workforce planning.

**Methods:** A telephone survey of a stratified random sample of dentists was conducted and analyzed using descriptive and multivariate statistics. The sample was stratified by county population density into four groups: rural isolated, small rural, large rural, and urban. The rural isolated group was oversampled to assure adequate analytical power and generalizability.

**Results:** Dentists serving less densely populated areas are older and more likely to retire in the next five years. Few dentists planning to retire have considered the disposition of their practices. Rural dentists often practice in multiple locations and frequently do not accept new patients despite the large number of dental HPSAs. Employment of dental hygienists and other staff varies with population density and practice size.

**Conclusions:** Current and future areas of greatest need for dentists are isolated rural areas of the state. A comprehensive workforce plan will include strategies to improve practice continuity.

**Funding:** Health Resources and Services Administration

### Abstract #: 8

#### MINNESOTA ORAL HEALTH PRACTITIONER WORK GROUP RECOMMENDATIONS ON PROGRAM PLANNING AND IMPLEMENTATION

**Author(s):** Colleen Brickle, EdD, RDH, Normandale Community College and Metropolitan State Univ, Marilyn Loen, PhD, RN, Metropolitan State Univ, Thomas Cook, MA, Metropolitan State Univ.

**Objective:** To enable thirteen professionals representing interested organizations and holding divergent views to generate recommended legislation, in a public process, to implement a proposed oral health practitioner to address the unmet oral health needs of under-served populations.

**Methods:** In 2005, Metropolitan State University and Normandale Community College agreed to develop a master's level oral health practitioner program, assembling an advisory committee to oversee the process. In 2008, the Minnesota legislature, amid controversy, passed legislation establishing a new oral health practitioner discipline and appointing the work group to convene between legislative sessions and develop recommendations and draft legislation to improve access for underserved patients, control the cost of education and dental services, preserve quality of care, and protect patients from harm.

**Results:** Staffed by the state department of health, the work group convened eight times to address such issues as education and competencies, scope of practice, supervision, practice settings, licensure, economic impact, and evaluation. The work group was unable to reach consensus, particularly regarding scope of practice and supervision. A minority report was submitted.

**Conclusions:** The process yielded recommendations to inform legislators' implementation of the proposed oral health practitioner. There is determined resistance to those elements of the work group's recommendations that would most significantly extend access to oral health care to Minnesotans who are uninsured and under-served. Metropolitan State University's program is preparing to admit its first cohort of students while the legislative outcome is pending.

**Funding:** None

**Abstract #: 9**

### **MONITORING WORKFORCE THROUGH THE IOWA DENTIST TRACKING**

**Author(s):** Raymond A. Kuthy, DDS, MPH, Univ of Iowa College of Dentistry and Public Policy Center

**Objective:** To monitor number and location of active Iowa dentists in relation to statewide and county-specific population data during a ten year period (1997-2006).

**Methods:** Iowa Dentist Tracking System (IDTS), which began in 1997, maintains biographic, educational and professional information for every active Iowa dentist. Individual demographic data (i.e., dentist age, sex) were compiled and then population to dentist ratios were constructed for the same time period.

**Results:** While the number of active Iowa dentists has remained stable, there has been a slight population growth (~4.5%) during this ten year period. While nearly 83% of dentists are male, 20.6% are older than 60 years of age. Of the 99 Iowa counties, 26 counties had an improved ratio (i.e., population to dentist ratio decreased by more than 100) and 24 counties remained approximately the same. Of the 49 counties with a less favorable ratio (i.e., population to dentist ratio increased by more than 100), 10 were considered metropolitan (i.e., Urban-Rural Continuum Codes of 2 or 3). 26 counties had one-third or more private practice dentists who were at least 60 years of age. The percentage of part-time dentists (i.e., < 32 hours per week) decreased for both males (15.1% v. 9.8%) and females (25.0% v. 17.9%).

**Conclusions:** Some states have a potential problem maintaining their population to dentist ratios, let alone improving them. County-specific ratios may worsen as the largest dentist cohort retires within the next decade. Statewide and community efforts will need to intensify in attracting younger dentists to less urbanized locations.

**Funding:** None

**Abstract #: 10**

### **TWO DENTAL WORKFORCE ASSESSMENTS IN ILLINOIS: COMPARING & CONTRASTING**

**Author(s):** Sangeeta Wadhawan, BDS, MPH, IFLOSS Coalition, Julie Janssen, RDH, MA, CDHC, Illinois Dept of Public Health, Linda Kaste, DDS, PhD, Univ of Illinois at Chicago

**Objective:** To compare and contrast the two dental workforce surveys (2004 and 2006) conducted in Illinois in conjunction with license renewal.

**Methods:** Illinois Departments of Public Health and Financial/Professional Regulation collaborated to conduct two rounds of workforce surveys in 2004 and 2006 associated with state licensure renewal for dentists and hygienists.

**Results:** The first assessment (2004) had voluntary participation and yielded response rates of 62% for dentists and 70% for hygienists. In 2006, the survey was required by the state dental society for dentists and remained voluntary for hygienists. The response rate rose to 91% among dentists but remained in the 70s (77%) among hygienists. However, both rounds of surveys showed similar results with over 80% of licensed dentists and hygienists clinically practicing in Illinois; planning retirement within 10 years for 28% of dentists and 25% of hygienists; approximately 20% of dentists coming from closed Illinois dental schools; and only 2% of dentists being pediatric dentistry specialists.

**Conclusions:** Making the survey mandatory provided the policy foundation for continuous data collection on workforce along with licensure renewal, and with similar descriptions as found with voluntary participation two years previously. Illinois is planning a third survey in 2009, again mandatory for dentists, that coincides with license renewal change to a 3-year-cycle. Workforce data allow governmental entity, professional organization and academic institution decision makers to assess trends over time as a basis to develop appropriate strategies and policies to ensure that workforce is fulfilling the needs and demands of the citizens of Illinois.

**Funding:** None

### **CONTRIBUTED PRESENTATIONS: ADVANCING DENTAL PUBLIC HEALTH - LESSONS LEARNED FROM DEMONSTRATION PROJECTS**

**Abstract #: 11**

#### **COMMUNITY BASED DENTAL PARTNERSHIPS: IMPROVING ACCESS TO DENTAL CARE FOR PERSONS LIVING WITH HIV/AIDS**

**Author(s):** Mahyar Mofidi, DMD, PhD, Health Resources and Services Administration

**Objective:** To describe the "Community Based Dental Partnership Program" (CBDPP) and its impact on access to dental care for persons living with HIV/AIDS (PLWHA) and clinical training of dental students and residents.

**Methods:** CBDPP is a federally-funded initiative that aims to improve access to dental care for PLWHA through clinical training of dental students and residents in underserved communities. The CBDPP forms collaborations among dental education programs, community health organizations and community based dentists. Quantitative and qualitative data for the first four years of CBDPP (2004-2007) were compiled. Quantitative data included but not limited to the number of PLWHA who received dental care and the number of visits as well as the number of dental students and residents engaged in direct dental care. Qualitative data included information on successful strategies, lessons learned, and challenges encountered in implementing the CBDPP.

**Results:** 4,745 individuals received dental services in 2007, an increase of 47% from 2004. The number of visits also increased during the assessment period. The number of providers who delivered dental services increased from 766 in 2004 to 1,474 in 2007. Providers acquired skills, developed self-confidence, and overcame stereotypes in treating PLWHA. Lessons learned include the importance of community outreach and education, extended community based rotations, and co-location of dental and medical services as strategies to reduce unmet dental needs of PLWHA. Challenges include the integration of organizational cultures and consumer involvement.

**Conclusions:** CBDPP has made a positive impact on access to dental care for PLWHA and training of providers.

**Funding:** None

#### Abstract #: 12

### THE COLLABORATIVE PROCESS AND USE OF THE PLANNED CARE DELIVERY MODEL TO INCREASE ACCESS AND REDUCE ORAL HEALTH DISPARITIES

**Author(s):** Janet Bozzone, DMD, MPH, Open Door Family Medical Center, Colleen Lampron, MPH, National Network for Oral Health Access, Irene Hilton, DDS, MPH, Silver Avenue Family Health Center, Huong Le, DDS, Asian Health Services Community Health Center

**Objective:** Health Centers are strategically situated to provide oral health care for vulnerable populations. The results of an oral health collaborative project will be discussed. This will be compared with efforts of another health center which was not a participant in this process.

**Objectives:** 1) To increase access and reduce oral health disparities in vulnerable populations in Health Centers. 2) To reduce the incidence of early childhood caries and subsequent need for extensive treatment.

**Methods:** Four Health Centers participated in the first Oral Health Collaborative Pilot. Learning sessions focused on using rapid “plan, do, study, act” cycles to effect change to improve access and outcomes for patients in focus populations; infants and prenatal patients.

**Results:** Preliminary results of the collaborative indicate that dental providers in Health Centers can successfully provide early childhood caries (ECC) prevention and implement prenatal oral health programs. Effectiveness of disease prevention is unknown as the pilot project was followed for only one year. In contrast, the efforts of another health center has effectively increased the number of caries free 2-4 year olds from 21% to 52 percent since 2002, and early intervention with minimally invasive techniques have resulted in fewer children with untreated decay.

**Conclusions:** The use of a chronic disease planned care model can be effective in increasing access and reducing oral health disparities in Health Centers. General dentists are capable of providing early intervention and prevention that can effectively reduce the incidence of ECC.

**Funding:** Health Resources and Services Administration (HRSA)

#### Abstract #: 13

### A PREDICTIVE TOOL FOR ESTIMATING THE POTENTIAL EFFECT OF WATER FLUORIDATION ON DENTAL CARIES

**Author(s):** Tickle M. BDS, FDS [DDPH, DPH] RCS, MSc, PhD, Geraldine RK Foster MA, Vishal Aggarwal BDS, PhD, Martin C. Downer BDS, MSc, PhD, Mark Lunt PhD Univ of Manchester

**Objective:** To provide a tool for public health planners to estimate the potential improvement in dental caries in children that might be expected in a region if its water supply were to be fluoridated

**Methods:** Recent BASCD (British Association for the Study of Community Dentistry) dental epidemiological data for caries in 5- and 11-year-old children in English primary care trusts in fluoridated and non-fluoridated areas were analysed to estimate absolute and relative improvement in dmft/DMFT and caries-free measures observed in England. Where data were sufficient for testing significance this analysis included the effect of different levels of deprivation.

**Results:** A table of observed improvements was produced, together with an example of how that table can be used as a tool for estimating the expected improvement in caries in any specific region of England. Observed absolute improvements and 95% confidence intervals were: for 5-year-olds reduction in mean dmft 0.56 (0.38, 0.74) for IMD 12, 0.73 (0.60, 0.85) for IMD 20, and 0.94 (0.76, 1.12) for IMD 30, and 12% (9%, 14%) more children free of caries; for 11-year-olds reduction in mean DMFT 0.12 (0.04, 0.20) for IMD 12, 0.19 (0.13, 0.26) for IMD 20, 0.29 (0.18, 0.40) for IMD 30, and 8% (5%, 11%) more children free from caries

**Conclusions:** The BASCD data taken together with a deprivation measure are capable of yielding an age-specific, ‘intention to treat’ model of water fluoridation that can be used to estimate the potential effect on caries levels of a notional new fluoridation scheme in an English region

**Funding:** A Grant from the Borrow Foundation

#### Abstract #: 14

### COMMUNITY WATER FLUORIDATION FROM A PROBLEM DEFINITION PERSPECTIVE

**Author(s):** Robyn L. Olson, RDH, BS, MPA, PhD, Delta Dental of MA

**Objective:** To discuss how problem definition principles contribute to fluoridation decisions through the comparative analysis of two case studies of referenda in MA

**Methods:** An examination of two communities in MA who were involved in fluoridation referenda was conducted to determine the impact that problem definition and issue framing may have had on the expansion of conflict. Case studies were examined based on demographics, structure of government, issue initiators and opponents as well as a comprehensive analysis of media coverage. The intent was to determine how the issue was framed and defined by spokespersons and the media. The review identified common elements of framing and problem definition between the cases.

**Results:** Descriptions of the problem included many elements commonly used by issue advocates and opponents to state their case. Proponents in each defined the issue from an instrumental perspective while opponents were more expressive in nature. Analysis suggests that in one case opponents garnered public support by redefining arguments and tying them to American values thereby negating the message of proponents. However, in the second case opponents were not able to mobilize in a coordinated manner giving more strength to the proponent's arguments.

**Conclusions:** Referenda for fluoridation are influenced by not just problem definition but other factors such as length of the campaign, voter turnout and public comprehension of the issues. Future research on understanding public opinion and the development of messaging campaigns that relate to values and not just facts are indicated.

**Funding:** None

**Abstract #: 15**

### **CHANGES IN CONSENT PROCEDURE IMPROVE UPTAKE OF SCHOOL BASED DENTAL EPIDEMIOLOGY**

**Author(s):** Iain Pretty, BDS, MSc, PhD, MPH, Nicola Boothman, BSc, Mphil, Roger Ellwood, BDS, MSc, MDS, PhD, Michael McGrady, BDS, all of the Dental Health Unit, School of Dentistry, Univ of Manchester, UK

**Objective:** To describe the implementation of a new parental opt-out procedure for dental examinations of 12 year old children in a state school setting within the United Kingdom. To compare the uptake of the examination between a parental positive consent procedure and a parental opt-out.

**Methods:** A parental opt-out consent procedure was developed following poor uptake using conventional positive consent. Two letters were sent to parents informing them of the dental study, and pre-paid envelope was provided with a signature form to enclose if the parents did not want their child to take part. Positive consent was obtained from the children at the time of the examination. A subset of 200 parents were questioned about the new procedure to determine acceptability.

**Results:** The mean consent rate from the positive consent model was 57%(SD 10.2) which rose to a mean level of 78% following the revised consent procedure. Consent rates still varied across the ten schools within the study with deprivation level being the strongest predictor of consent rate. Following the assessment of 200 questionnaires sent to parents there were no objections to the revised consent procedure.

**Conclusions:** Consent methods should be appropriate to the age of the child and the risk of the procedure being undertaken. However the use of parental opt-outs may be appropriate for epidemiological work and may ensure that, by increasing uptake, studies achieve representative samples and hence are both useful and ethical.

**Funding:** National Institute of Health Research (NIHR), UK

## **POSTER PRESENTATIONS**

Please note: not all selected posters are presented at the conference. Posters 16-71 are located in the Exhibit Hall and posters 72-114 are located in the Lloyd Center Ballroom.

### **COMMUNITY PREVENTIVE SERVICES: COMMUNITY WATER FLUORIDATION AND SCHOOL-BASED DENTAL SEALANT PROGRAMS**

**Abstract #: 16**

#### **ALASKA'S FLUORIDE REMOTE OBSERVATION SYSTEM PILOT PROJECT**

**Author(s):** Troy L. Ritter, REHS, MPH, DAAS, Alaska Native Tribal Health Consortium

**Objectives:** Alaska Natives suffer a substantial dental health disparity when compared to the US general population. While optimal water fluoridation has been shown to substantially reduce decay, many small Alaska Native villages lack the capacity to practice safe and effective water fluoridation. Remote monitoring systems provide a means of supporting water fluoridation operations in larger communities but are too costly and complex for use in small communities. The objective was to develop a simple, reliable, and low-cost alternative to the existing remote monitoring systems. The system must be capable of automatically measuring a water-borne fluoride level and making it available over the internet.

**Methods:** In August 2006 we began to develop an alternative to existing remote monitoring systems. In-house testing of the first prototype began October 2006. A Hach colorimeter was used to determine accuracy, with occasional verification samples sent to an EPA certified laboratory. An operation and maintenance log was kept with the purpose of documenting system reliability.

**Results:** In-house testing has shown the units be accurate to „b0.2 ppm and stable to the fourth decimal place. The original unit has been operating continuously since October 2006; no major repairs have been required. The system was constructed using less than \$900 in parts.

**Conclusions:** In-house testing has shown the remote monitoring system to be accurate, reliable and cost-effective. This system holds potential to improve water fluoridation operations in small communities.

**Funding:** None

**Abstract #: 17**

#### **FLUORIDATED WATER KNOWLEDGE AND IMPLICATIONS FOR FLUORIDE DELIVERY AMONG LATINAS AND CHILDREN IN SAN FRANCISCO, CA**

**Author(s):** Rosalía A. Mendoza, MD, MPH, Dept of Family and Community Medicine, Univ of California San Francisco (UCSF), Howard F. Pollick, BDS, MPH, Dept of Preventive and Restorative Dental Sciences UCSF, Jane Weintraub, DDS, MPH, Div of Oral Epidemiology and Dental Public Health, and Center

to Address Disparities in Children's Oral Health UCSF, Judith C. Barker, PhD, Dept of Anthropology, History and Social Medicine, UCSF

**Objectives:** To conduct a qualitative study to understand fluoridated tap water (FTW) knowledge held by immigrant Latino caregivers of young children living in San Francisco (SF) and to gauge their preferences for fluoride delivery.

**Methods:** Latina caregivers of children 0 to 5 years were recruited from two community-based health centers from Mission Neighborhood Health Center and SF General Hospital's Family Health Center; both located in the predominantly Latino SF Mission District. Focus groups and in-depth interviews were conducted using semi-structured interview. Qualitative analysis included the review of transcripts, development of a code book, and analysis of emerging themes using Atlas.ti software.

**Results:** Analyzed data reveals a low or nonexistent knowledge around SF's FTW, although increased length of time in US and level of engagement with dental services appears to enhance knowledge. A household consuming FTW, often had increased knowledge and reported fewer concerns around TW quality or safety. Most Latina caregivers were willing to give prescription fluoride drops/ tablets to children, although most preferred the option of giving FTW or buying fluoridated bottled water. Some expressed interest to receive water safety reports to ensure that FTW was safe.

**Conclusions:** Latinos often consume more bottled water than TW, and this qualitative study reveals implications for community-based F interventions to reduce early childhood caries among urban immigrant Latinos in SF. Results emphasize the importance of assessing fluoride acceptability in local settings, and the need to engage local municipal water commissions, medical/ dental providers, and public health officers in developing fluoride oral health policy.

**Funding:** NIH/NIDCR U54 DE 14251

#### Abstract #: 18

### MEDICAID CLAIMS AND WATER FLUORIDATION IN NEW YORK STATE

**Author(s):** Jayanth V Kumar, DDS, MPH, Bureau of Dental Health, New York State Department of Health, Olubunmi Adekugbe, BDS, MPH, Bureau of Dental Health, New York State Dept of Health

**Objectives:** Community Water Fluoridation (CWF) was adopted 50 years ago to control dental caries. Because dental caries in school-aged children is perceived to be a less severe problem now, questions are being raised about the need for CWF. We evaluated geographic variation in the claims reimbursed for caries-related services in the New York State Medicaid program to assess its impact.

**Methods:** Medicaid data for the year 2006 was used to determine the average number of claims-per-recipient in each county for caries and non-caries related procedures in children less than 20 years. CWF coverage for each county was obtained from the CDC Water Fluoridation Reporting System

(WFRS). The status of each county was categorized based on population covered as non-fluoridated ( $\leq 30\%$ ), mixed (31-69%) and fluoridated ( $\geq 70\%$ ). The Spearman Rank correlation coefficient between the claims-per-recipient and the percent of the population covered by fluoridation was calculated.

**Results:** The average claims-per-recipient for caries-related services in fluoridated and non-fluoridated counties was 1.23 and 1.66 respectively. Similar claims for non-caries related services in fluoridated and non-fluoridated counties were 5.31 and 4.97 respectively. While the average claims-per-recipient for caries-related services was correlated with fluoridation (-0.53536,  $p < 0.0001$ ), no such correlation was observed for non-caries related services (-0.12031,  $p = 0.368$ ).

**Conclusions:** This analysis of the claims for restorative services showed that fluoridation may in part explain the geographic variation observed in the NYS Medicaid program.

**Funding:** None

#### Abstract #: 19

### COMMUNITY WATER FLUORIDATION IN MISSISSIPPI: POLICY QUESTIONS AND RECOMMENDATIONS FOR A STATE MANDATE

**Author(s):** Kimberly J. Hammersmith, DDS, Ashley M. Kranz, BA, Bhavarth S. Shukla, BA, Univ of North Carolina Gillings School of Global Public Health

**Objectives:** Dental caries is the most prevalent chronic disease of children. In a 2004-2005 statewide oral health survey of Mississippi third-graders, 69% had caries and/or restorations, and 39% had untreated caries. In 2006, MS ranked 41st in percentage of population on public water systems (PWS) receiving fluoridated water, at 50.9%. One Healthy People 2010 goal is for 75% of the US population on PWS to receive fluoridated water by 2010. The aim of our study is to identify a policy strategy for Mississippi to reach this goal for community water fluoridation (CWF).

**Methods:** We examined the experiences of fourteen states (or equivalents) with current CWF mandates. We evaluated the experiences of these states for Mississippi on the basis of context and feasibility to form recommendations.

**Results:** States that mandate CWF observe reduced costs associated with dental care. By setting a low population threshold for CWF mandates, a greater number of people receive fluoridated water. Unfunded mandates, as observed in California, are not successful at increasing the number of people receiving fluoridated water. Pursuing a CWF mandate through legislation is therefore preferable to regulatory action.

**Conclusions:** Mississippi should pursue a statewide fluoridation legislative mandate with a deadline for compliance. The state fluoridation administrator, in concert with a state drinking water program administrator, should oversee the implementation, compliance, and monitoring of CWF. The Department of Health should publish fluoridation status of water systems, and rates of dental caries and fluorosis. We recommend that the threshold be set for PWS serving between 1,000-5,000 persons.

**Funding:** None

## Abstract #: 20

### PARTNERING TO SEAL-A-SMILE

**Author(s):** Matt Crespin, RDH, BS, CDHC, Children's Health Alliance of Wisconsin; Karen Ordians, Children's Health Alliance of Wisconsin; B.J. Tatro Ph. D., B.J. Tatro Consulting

**Objectives:** To evaluate Wisconsin school-based dental sealant programs and identify key findings which will allow for increased funding and the expansion of programs.

**Methods:** Information was gathered using SEALS (Sealant Efficiency Assessment for Locals and States) data from Wisconsin Seal-A-Smile state grant funded programs as well as available data from other non state funded programs. Evaluation of various measured of efficiency were examined to determine the overall success of the program. Individual program data and biographical sketches were obtained from grant proposals and individual interviews.

**Results:** Overall programmatic improvements have lead to increased numbers of children treated and funding available. The number of children treated has more than doubled with limited funding increases. The need for increased funding and the expansion of existing programs is also evident. Legislative policy changes have led to increases in Medicaid billing and program sustainability. The amount of Medicaid reimbursement programs have billed for and recieved has almost tripled.

**Conclusions:** Findings show programmatic improvements in various areas of service delivery. Increases in service with limited and sometimes no funding increases is representative of individual program improvements. The need for increased funding for the expansion of this program is evident by the amount of funding requested compared to the amount available through the state grant program.

**Funding:** Delta Dental of Wisconsin

## Abstract #: 21

### CHICAGO DEPARTMENT OF PUBLIC HEALTH (CDPH) – WORKING NINE YEARS TO IMPROVE THE ORAL HEALTH STATUS OF THE SCHOOL CHILDREN OF CHICAGO

**Author(s):** Mary Pat Burgess, RDH, MBA

**Objectives:** Development of a School – Based Oral Health Program (Program) to address the oral health disparities of the students attending the Chicago Public Schools.

**Methods:** Developed and executed an Inter-governmental agreement with the Chicago Public School System (CPS) and a Professional Service Agreement with private oral health providers to deliver the Program in the City of Chicago. A Quality Assurance Program has been instituted to determine the delivery of "Best Practice Dentistry" in schools by evaluating the site of the services. The Program established a referral network consisting of over 200 public and private oral health professionals that are willing to provide extended care services to students seen in the Program.

**Results:** What started out as a Pilot Project in March of 2000 has developed into a program that has provided oral health prevention services to over 125, 000 students and placing 384,000 dental sealants. Approximately 67% of the

students participating in the Program have received referral sites to assist in the completion of their oral health services.

**Conclusions:** Over the past nine years, this Program has grown from 7 schools to 590 schools in the Chicago Public School System. CDPH, as a result of the agreements establish with CPS and the dental providers, acts as the "Gate Keeper" for Oral Health Services in the schools. It has provided prevention services for the students that may not have otherwise received oral health care.

**Funding:** Chicago Department of Public Health, Oral Health of America Grant, Illinois Department of Public Health – Dental Sealant Grants

## Abstract #: 22

### EVALUATION OF THE SMILES ACROSS GREATER MISSOURI – 2006-08: DENTAL SEALANTS

**Author(s):** Moncy Mathew, DDS, MPH\*; Michael McCunniff, DDS, MS\*; Liang Hong DDS, MS, PHD; Craig Biehle MHA\*\*\*, Matthew Kuhlbeck, MHA\*\*\*; Cynthia P Hayes MHR, MHA\*\*\*; Charles Gasper MS(R)\*\*\*; \*Univ of Missouri School of Dentistry, \*\*Missouri Foundation for Health

**Objectives:** To evaluate the dental sealant program for grantees participating in the Smiles across Greater Missouri program, funded by the Missouri Foundation for Health (MFH). Grantees operated school-based sealant programs. Children were referred for further care as needed.

**Methods:** There were a total of 6 grantees, comprising of 2 county health departments, 3 Community Health Centers, and 1 Health Agency, operating school-based programs. The program targeted underserved children in 3rd and 6th grade, providing dental screenings, education, referrals if needed, and sealants. The evaluation structure utilized qualitative instruments (open-ended questionnaires, interviews of key stakeholders) and quantitative instruments (minimum data sets, interim reports). Data were collected periodically over the course of the program year.

**Results:** There were a total of 6 grantees completing 2 years of the program. A total of 1098 and 3685 eligible children received sealants in Years 1 and 2, respectively. The increase in sealant participation ranged from 25% to 46% among grantees. Only one grantee had a decrease of 4.6% in children sealed. Increases in consent rates were the primary reason for increased program numbers. However, some grantees had to adopt new schools to ensure that projected numbers of participants were met

**Conclusions:** Increasing communication with school nurses, parents, and children had a direct impact on the participation rates. Other factors that could have contributed to the increase could be the continued presence in schools, increased program acceptance by teachers, use of incentives for responses and oral health education efforts promoting dental sealants.

**Funding:** SAGMO Evaluation Contract with the Missouri Foundation for Health

## PROMOTING ORAL HEALTH AND EARLY INTERVENTIONS FOR CHILDREN

**Abstract #: 23**

### UTILIZING SERVICE-LEARNING REFLECTIONS TO EVALUATE A SCHOOL-BASED SEALANT PROGRAM (SBSP)

**Author(s):** Faith Y. Miller, CDA, RDH, MEd, Associate Professor, Dental Hygiene & Charla J. Lautar, RDH, PhD, Associate Professor and School Director, School of Allied Health, College of Applied Sciences and Arts, Southern Illinois University Carbondale

**Objectives:** To utilize dental hygiene students' reflections/feedback of a service-learning (S-L) activity as a summative evaluation of a school-based sealant program.

**Methods:** A 5-item questionnaire with open and closed-ended questions, distributed to students in their graduation year was used to evaluate a S-L activity. Dental hygiene students upon completion of an assigned rotation also wrote a reflection of their experiences with the Dental Sealant Grant Program (DSGP) within a given semester. Both of these instruments were used to conduct an internal assessment of the program.

**Results:** The reflections allowed students to highlight their experiences, express their opinions and many have provided ways to improve program delivery. Moreover, students gained a greater appreciation for the need to reach out to the underserved, underinsured and uninsured children in the rural southern Illinois region, with respect to oral health. Survey responses suggested working with the DSGP was a rewarding experience for them as well as the interaction with community members. Based on students' feedback, the DSGP hired a coordinator to enhance the organization of the program, thus more are children receiving preventive treatment. Students also became open to the opportunities available to them in public health settings.

**Conclusions:** The reflections not only met the criteria of S-L, but were insightful, and used as an internal evaluation of the S-L activity. The DSGP administrative staff utilized the reflections from 32-36 dental hygiene students annually, since the implementation of the program in 2001, to improve delivery of services offered by the DSGP.

**Funding:** The Dental Sealant Grant Program receives funding from the Illinois Dept of Public Health, Division of Oral Health. Reimbursed for services rendered through Doral dental Services, Inc. –the Medicaid Provider for Illinois.

**Abstract #: 24**

### THE EFFECTIVENESS OF EDUCATIONAL INTERVENTION IN A MIDDLE SCHOOL POPULATION IN BOSTON, MASSACHUSETTS

**Author(s):** Natalie Hagel, RDH, MS, Tufts School of Dental Medicine, Wanda G. Wright, DDS, MS, MDS, Tufts School of Dental Medicine

**Objectives:** To evaluate the short term effects of an oral health educational intervention in adolescents

**Methods:** Oral health related knowledge was measured by means of a 6 question self-administered questionnaire at the beginning and end of an educational intervention. The intervention was in the form of a powerpoint presentation and the questions were based on information presented in the lecture. Statistical differences between individual scores and total scores on the knowledge test was evaluated by comparing correct answers of post-pre test score difference using paired t-tests.

**Results:** A total of 240 middle school children participated. 20% were in the sixth grade, 37% in the seventh, and 43% in the eighth grade. Thirteen percent of the students reported their oral health as fair or poor. Before the education intervention, only 30% of adolescents knew the caries preventing effects of Xylitol and only half (52%) knew that one's toothbrush should be changed every 1-3 months. Adolescents also had low knowledge on questions addressing fluoride, plaque and bleeding gums. There was a significant difference between the pre-test and post-test score ( $p < .05$ ). The mean score on the pre-test was 2.3 and the mean score on the post test was 4.5.

**Conclusions:** The PowerPoint presentation is successful in providing adolescents the basic knowledge necessary for practicing good oral health. The pretest results clearly demonstrate the need for educational interventions. When teaching oral health to adolescents, administering a pre-post test is effective in their learning.

**Funding:** None

**Abstract #: 25**

### CONNECT ORAL HEALTH TO EVERY CHILD'S MEDICAL CARE: MOTIVATING CHILD HEALTH PROVIDERS TO BLOCK ORAL DISEASE IN CHILDREN WITH SPECIAL HEALTH CARE NEEDS (CSHCN)&#8232;

**Author(s):** Lynn Bethel, RDH, MPH, Director, Massachusetts Dept of Public Health Office of Oral Health, Nicole Laws, RDH, MS, Office of Oral Health, Massachusetts Dept of Public Health; Joan Lowbridge, RDH, BS, Office of Oral Health, Massachusetts Dept of Public Health

**Objectives:** To improve the oral health of CSHCN by increasing child health providers' awareness/knowledge of oral health/systemic health relationships,&#8232;and motivating child health providers to perform oral assessments and apply fluoride varnish&#8232;

**Methods:** A Toolkit was developed for child health providers working in Massachusetts community health centers (CHCs). Formative research indicated this Toolkit must address barriers such as increasing child health providers' awareness to and knowledge of children's oral health. The Toolkit was developed and pilot tested with medical and dental professionals.&#8232;Ten regional trainings to disseminate the BLOCK Oral Disease Toolkit in Massachusetts targeted providers who routinely treat CSHCN and other high-risk child populations. At each training, a pretest and posttest were administered to measure the child health providers' change in knowledge, attitudes, and self-efficacy to implement oral health assessments and fluoride varnish application in the medical setting.

**Results:** With the training and dissemination of the BLOCK Oral Disease Toolkit, child health providers had an increase in knowledge and positive attitudes about children's oral health. They also indicated a higher self-efficacy to integrate oral health activities into medical practice.

**Conclusions:** Child health providers must be involved in the effort to increase CSHCN access to preventive oral health care. This program increased medical providers' knowledge and positive attitudes about oral health, and provided hands-on training to enhance the acceptance of preventive oral health integration.

**Funding:** HRSA: funds utilized for material development and printing; ASTDD mini grant to implement the Massachusetts Action Plan for Children with Special Health Care Needs: funds used to provide medical provider trainings and distribute the materials

**Abstract #: 26**

**FIRST SMILES, INFANT AND TODDLER ORAL HEALTH PROGRAM**

**Author(s):** Deborah L. Fuller, DMD, MS and Daniel J. Kane, DMD, St. Joseph Health Services of Rhode Island

**Objectives:** To address oral health access, First Smiles was established to provide a dental home for infants/toddlers enrolled in Rite Smiles, RI's dental program that provides MA coverage for young children.

Program Objectives are: 1) Eliminate health barriers by assuring early access to high quality preventive services 2) Increase oral disease prevention knowledge/practices among parents of underserved children 3) Reduce health disparities by providing early intervention 4) Become a model of care to be replicated statewide/nationally

**Methods:** First Smiles seeks to increase the number of age 1 visits, improve access to early OH intervention and provide an outreach/education to parents. By having an early first dental visit, the dentist assesses caregiver's oral health, assesses oral health risk of infant/child, performs preventive OH services and oral hygiene, diet/feeding, injury prevention education.

**Results:** Through an integrated model of care, the program:

- Creates a Dental Home,

- Provides early risk assessment, anticipatory guidance, and oral disease prevention to prevent need for OR services,
- Provides easy access: no wait list,
- Engages a multidisciplinary approach,
- Provides early referral to pediatric dentists for restorative treatment,
- Improves parent/caregiver OH literacy

**Conclusions:** Support from the partnering SJHS pediatric services departments has been overwhelming, with daily referrals and ongoing collaboration on education/outreach initiatives. Parents are appreciative of the early access to OH services and education.

**Funding:** No grant / foundation support was provided for the project. Sustainability relies on patient care revenues.

**Abstract #: 27**

**ORAL HEALTH STATUS OF CHILDREN PARTICIPATING IN THE PROJECT READY SMILES 2007 – 2008**

**Author(s):** Michael McCunniff, DDS, MS\*; Kim Kimminau Ph.D., Dawn Downes, B.S., Liang Hong, DDS, MS, PHD; Moncy Mathew DDS, MPH

**Objectives:** Project Ready Smile is a three-year initiative designed to improve the oral health of low-income children birth to age six. The initiative offered oral health screenings and fluoride varnish, oral health education and dental services for young children living in poverty and serves children in 6 counties – 3 in Kansas and 3 in Missouri. Dental referrals are made to a network of local dentists willing to provide services to low-income children.

**Methods:** A trained dental hygienist visits schools and Head Start Centers, conducts screenings, provides preventive care and referrals as needed. Data is collected from consent forms, registration and the screening. Data is analyzed for program evaluation. Data in this presentation is for the first year of the program covering all counties, except one.

**Results:** A total of 1036 children participated in the program, with a mean age of 3.9. Among the participants, there were almost equal proportions of boys (49.2%) and girls (49.7%). There were 883 (85.2%) of participants with dental insurance coverage, and 343 (33.1%) indicating that they had a Dental Home. Of the participating children, 90 (8.7%) had early childhood caries, 28 (2.7%) had rampant caries, 40 (3.9%) had white spot lesions, and 49 (4.7%) had at least one crown present. Oral hygiene was deemed unsatisfactory for 66 (6.4%) of the participants.

**Conclusions:** This initiative has been effective in providing preventive services and helping underserved children find a Dental Home.

**Funding:** REACH Healthcare Foundation

**Abstract #: 28**

**SPOKANE'S ACCESS TO BABY AND CHILD DENTISTRY (ABCD) MEDICAID PROGRAM: 1995-2008**

**Author(s):** Ida M. Ovnicek, BS, RDH, MPH Spokane Regional Health District

**Objectives:** Present the history and outcomes of Spokane's original Access to Baby and Child Dentistry Program (ABCD) from 1995 to 2008. Describe how partnerships have expanded the ABCD Program into 30 of Washington State's 39 counties.

**Methods:** In 1995, the Access to Baby and Child Dentistry program was created in Spokane, Washington to address the unmet dental needs of young, Medicaid children. ABCD partners have included Local Dental Societies, WA State Department of Social and Health Services and Department of Health, Washington Dental Service Foundation, and the University of Washington. The combined efforts of partners have allowed for program evaluation and research publications leading to program expansion.

**Results:** The ABCD program has increased the number of Medicaid children receiving dental services, increased the number of Medicaid dental providers, and strengthened community advocacy and awareness concerning oral health.

**Conclusions:** Spokane's ABCD Program has been in existence for 14 years, increasing dental access to Medicaid children age 5 and under. Through community and state partnerships, programs like this can be successful in addressing the needs of young, Medicaid children.

**Funding:** Spokane Regional Health District, Washington State Department of Social and Health Services, Washington Dental Service Foundation

#### Abstract #: 29

##### THE KIDS ORAL HEALTH PARTNERSHIP

**Author(s):** Judith A. Feinstein, MSPH, Oral Health Program, Maine Dept of Health & Human Services, Sarah K. Shed, MS, CAGS-PH, Kids Oral Health Partnership, Medical Care Development, Augusta, ME, Kathleen E. Perkins, MPA, Director, Div of Health Improvement, Medical Care Development, Augusta, ME, Bonnie W. Vaughan, RDH, MEd, MBA, Kids Oral Health Partnership, Medical Care Development, Augusta, ME, Erica L. Lichter, ScD, MCH, Epidemiologist/Assistant Research Professor, Univ of Southern Maine, Portland, ME

**Objectives:** To increase the number of young children (0-3) receiving oral health assessments and preventive dental visits, by: 1. Integrating oral health into existing care systems; 2. Enhancing the ability of social and medical providers ("providers") to recognize oral diseases and conditions; 3. Increasing provider engagement in anticipatory guidance, preventive interventions, and appropriate referrals

**Methods:** The Partnership identifies and recruits providers state-wide to participate in oral health training for integrating oral health and facilitating appropriate dental referrals. The training utilizes a tested curriculum, delivered by a dental hygienist or health educator. Pre and post surveys with a six month follow-up assess provider knowledge and behavior changes. Communication and follow up strategies include website and e-news bulletins, on-line surveys and an advisory committee comprised of key partners. Data from existing service and claim data bases will be used to document long term impact on service utilization and medical outcomes.

**Results:** In the six month period ending December 31, 2008, the Advisory group has been actively engaged; the web site and e-news are used to recruit trainees and to reengage those who have received training. The project has trained 48 medical providers and 180 social service providers. 83 % of non-medical providers and 65% of medical providers report being very satisfied with the training. Preliminary results on recruitment strategies and baseline data will be presented.

**Conclusions:** Non-dental providers are receptive to early oral health training and can play a key role in ensuring the oral health of children under 3.

**Funding:** HRSA/Maternal and Child Health Bureau, Targeted State Maternal and Child Oral Health Service Systems grant # H47MCO8655

#### Abstract #: 30

##### CAROLINA DENTAL HOME; LINKING MEDICAL AND DENTAL PRACTICES

**Author(s):** Larry P. Myers DDS, MPH, Gary Rozier, DDS, MPH, Rebecca King, DDS, MPH, Kelly Close, RDH, MHA

**Objectives:** Medicaid children face substantial barriers in obtaining dental care. This study reports the development and evaluation of a demonstration project aimed at increasing access to dental care for Medicaid children 0-5 years of age. It focuses on children with medical visits who need priority referral to dentists because of elevated risk for ECC.

**Methods:** Risk assessment guidelines for use by physicians were developed jointly by physicians and dentists. General dentists were trained in the management of dental disease in young children. Nurse case managers facilitated referrals between medical and dental offices. Patient encounter forms completed during the medical visit evaluated changes in referral rates after the intervention.

**Results:** Ten of 23 general dentists participated in the project and 8 received training in infant oral health. Five medical practices with 16 physicians, 3 case managers and 1 pediatric dentist also participated. The referral rate for children with white-spot lesions only or cavitated lesions increased from 37% to 78% and 63% to 90% respectively, between baseline and 6-month follow-up.

**Conclusions:** A local pediatric dentist is necessary to provide a referral outlet for general dentists who are uncomfortable providing restorative care for this age group. Access to educational resources such as a school of dentistry is important for the training of general dentists and their staff, physicians and case managers. Case managers are a valuable aid in the referral process. Referral guidelines help physicians evaluate oral health needs and decide which children need referral and whether to a general or pediatric dentist.

**Funding:** Funded by a grant from the Department of Health and Human Services, Health Resources and Services Administration entitled: Grants to States to Support Oral Health Workforce Activities. Grant No. T12HPO7711

#### Abstract #: 31

##### PRIMARY CARIES PREVENTION INTERVENTION (PCPI) BY PRIMARY MEDICAL PROVIDERS: MINNESOTA'S RESPONSE TO THE NATIONAL CALL TO ACTION TO PROMOTE ORAL HEALTH

**Author(s):** Amos Deinard, MD, MPH, Univ of Minnesota Dept of Pediatrics, Brenda Johnson, Ph.D., MPH, Univ of Minnesota Dept of Pediatrics

**Objectives:** Minnesota's medical clinics serving high-risk children will integrate PCPI services (risk-assessment, oral examination, anticipatory guidance and fluoride varnish) into well-child visits and become 'poster-clinics' demonstrating the model as easily implemented, accepted, and reimbursed.

**Methods:** Insurers named clinics serving large numbers of Medicaid/SCHIP insured children. Telephone invitations to participate were followed by an e-mail with a link to the training

website. Medical directors and key administrative staff reviewed the website prior to a conference call to discuss perceived obstacles. Packages containing fluoride varnish, billing information, varnish sources, and educational materials were mailed to participants. The project was evaluated using a staff survey and clinic reports of percent of children treated and numbers of reimbursed/billed services.

**Results:** After nine months, twenty-two clinics implemented PCPI. Thirty-two are training or seeking organizational approval. Nine clinics declined participation. Pediatricians were more likely to participate than were Family Medicine doctors.

Conference calls discussed: corporate approval; dental referrals; clinic flow; delegating responsibilities; managing children; regulation; billing codes; translating education materials. Clinics were reimbursed for PCPI services.

**Conclusions:** Most medical providers are assuming responsibility for the whole body including the mouth. PCPI services are easily implemented, accepted, and reimbursed. Non-participants will implement varnish only if a 'required' service. Therefore, policy-makers/NCGA should include PCPI (including fluoride varnish) into EPSDT guidelines.

**Funding:** Delta Dental of Minnesota, UCare Minnesota, Medica Foundation, National Children's Oral Health Foundation

#### **Abstract #: 33**

### **STATE OF ORAL HEALTH AMONGST CHILDREN IN HEAD START CENTERS IN MIAMI-DADE COUNTY, FLORIDA**

**Author(s):** Luisa Utset-Ward DMD, Univ of Miami Miller School of Medicine; Michelle Floyd Rebollo MD, Univ of Miami Miller School of Medicine

**Objectives:** To provide dental education, screening and fluoride varnish application to 1800 low-income, children ages 1 to 5 years in Head-Start Centers and evaluate the number of children needing further dental referrals.

**Methods:** Each child was examined, received dental education, fluoride varnish application and recommendations to follow up with their dental home. Dental findings were entered into an electronic dental database. Clinical and demographic information, including the condition of each tooth, diagnosis, and need for follow-up, were documented. What was of primary interest was the overall percentage of regular and emergency referrals as well as breakdowns by age, gender, and zip code.

**Results:** 1800 children under the age of 6 years were examined and received fluoride varnishes at 27 Head Start Centers. Overall, 59% of these children had unmet dental needs, and 10% had emergency needs. Although somewhat variable by location in the county, and even by Head Start Centers within the same zip code, these percentages were unaffected by gender. As expected, the percentage of children with unmet dental needs increased in an exponential fashion with age (1 Year = 14%, 2 Years = 33%, 3 Years = 55%, 4 Years = 62%, 5 Years = 62%).

**Conclusions:** Nearly 60% of the children examined had unmet dental needs, much higher than the national average

of about 20% for children ages 2-5 years. The majority of the children were born during Medicaid reform. Miami-Dade County, Florida has a large number of children who are at high-risk for dental caries. Nearly 50% of children in Miami-Dade County, ages five and under, qualify for Medicaid and approximately 25% are uninsured. Only 1/3 of the population speaks English as the primary language. The majority of the people living in the zip codes where our oral health services were provided are either Black or Hispanic.

**Funding:** The Children's Trust

#### **Abstract #: 34**

### **A REVIEW OF THE ORAL HEALTH CONTENT OF GUIDELINES FOR CHILD CARE AND EARLY EDUCATION PROGRAMS**

**Author(s):** Ashley M. Kranz, BA, R. Gary Rozier, DDS, MPH, Dept of Health Policy and Management, UNC Gillings School of Global Public Health.

**Objectives:** Almost 2 out of every 3 U.S. children under 5 years of age receive child care from someone other than their parents. Research suggests that health promotion in child care centers improves the general health of children and families. Little is known about the role of these centers in oral health. We identified U.S. child care guidelines and assessed their oral health recommendations for infants and toddlers.

**Methods:** Child care guidelines were identified through a search of PubMed and the Internet using several child care search terms. Guidelines were grouped into four categories (professional standards, accreditation standards, funding standards, and licensing regulations). The oral health content of each guideline was assessed in three areas (screening and referral, classroom activities, and education of child, parent or staff).

**Results:** We found 10 guidelines, 4 of which make recommendations regarding oral health. Most standards provide some recommendations in all three content areas examined. Additionally, 37 states reference oral health in their licensing regulations, but recommendations are limited and most often address the storage of toothbrushes.

**Conclusions:** Detailed guidelines for oral health practices exist for early child care programs but they exhibit great variability according to type. Both Early Head Start and National Health & Safety Performance (AAP, APHA) standards provide extensive guidance regarding oral health. States should look to these standards to inform and strengthen the oral health components of their licensing regulations. Despite detailed recommendations in some existing standards, research is needed to determine compliance and its impact on oral health.

**Funding:** Supported by Grant No. RO1 DE018236 from the National Institute of Dental and Craniofacial Research

### Abstract #: 35

#### **PARTNERSHIPS AND COLLABORATIONS TO IMPROVE ACCESS AND REDUCE BARRIERS TO DENTAL HEALTH SERVICES FOR HEAD START: AN INTEGRATED APPROACH**

**Author(s):** Shelley M. Guinn, RDH, BSDH, Lower Columbia College Head Start, Carleen Wolgamott, BS, Lower Columbia College Head Start, Longview, Washington

**Objectives:** To improve the dental health of Head Start students by utilizing a dental hygienist to provide preventive services and educate the community about the serious nature of ECC.

**Methods:** Lower Columbia College Head Start, an Oral Health Initiative (OHI) grantee, hired a registered dental hygienist to coordinate and implement specific components of their OHI program. The hygienist/coordinator provided dental screenings and fluoride varnish to students and younger siblings; worked to improve access to dental care for students, younger siblings and pregnant moms; and provided education to students, Head Start staff, parents and community partners in the nature, prevention and control of ECC, and in the importance of optimal dental health for young children. Additionally, nursing students at Lower Columbia College and dental hygiene students from Clark College received education and training, along with valuable service learning activities designed to increase future healthcare provider awareness of the dental health needs of Head Start populations.

**Results:** Increased access to preventive dental health services, as well as a significant reduction in decay incidence in Head Start students and their younger siblings.

**Conclusions:** This integrated, collaborative approach to address barriers to dental health services and improve awareness of children's dental health needs is a successful model for reducing the decay experience in Head Start students.

**Funding:** Oral Health Initiative grant, Office of Head Start

### Abstract #: 36

#### **ADOPTION AND IMPLEMENTATION OF PREVENTIVE DENTISTRY INITIATIVES FOR PHYSICIANS BY MEDICAID PROGRAMS: A NATIONAL SURVEY**

**Author(s):** Lattice D. Sams, BSDH, Dept of Dental Ecology, R.G. Rozier, DDS, MPH, Health Policy and Management, R.S. Wilder, BSDH, MS, Dept of Dental Ecology, R.B. Quiñonez DMD, MS, MPH, Dept of Pediatric Dentistry.

**Objectives:** Medicaid programs have started to rely in part on primary care medical providers to deliver preventive dental services. This study seeks to: 1) identify Medicaid programs in which non-dental primary care health clinicians provide preventive dental services; 2) determine Medicaid dental directors' perceptions of the attributes of these preventive dental initiatives; and 3) determine initiative characteristics.

**Methods:** A web-based survey using Qualtrics online survey software was distributed to all Medicaid dental program managers. The survey included 50 items in 7 domains (initiative adoption and implementation; characteristics of preventive

initiatives; training of providers; experiences of Medicaid programs in implementing initiatives; initiative outcomes and general characteristics of the Medicaid programs). A descriptive analysis of the primary hypothesis that tested the effect of initiative attributes on adoption was based on Rogers' diffusion of innovation theory.

**Results:** Of 34 responding states, 19 (56%) have adopted a preventive dentistry initiative for non-dental providers, 8 (24%) intend to implement one in the next 12 months, and 7 (21%) have no plans for one. All adopting Medicaid programs include fluoride varnish, but fewer include risk assessment (42%) or counseling (68%). Adoption is affected more by perceived relative advantage of the innovation (e.g., the program is effective in improving access) and observability of results from the innovation than other attributes such as its complexity.

**Conclusions:** Adoption of preventive dental services for physicians in Medicaid programs is becoming widespread in the United States, perhaps because Medicaid dental managers believe these initiatives are easy to implement and are effective.

**Funding:** None

### Abstract #: 37

#### **RURAL NEBRASKA DENTISTS AND FIRST DENTAL VISIT RECOMMENDATIONS**

**Author(s):** Kimberly McFarland, DDS, MHSA, Kelly Plote, MEd, Maren Hall (Dental Student)

**Objectives:** To identify the percentage of rural Nebraska dentists who provide information regarding first dental visit in accordance with the American Dental Association (ADA) policy of first dental visit by age one.

**Methods:** A literature review was conducted regarding access to care for children. A written survey instrument was designed. Institutional review board (IRB) approval was applied for and granted. A listing of the addresses for all rural licensed dentists in the state was secured from the state's Health Professions Tracking Center. The written survey along with a cover letter and a self-addressed, stamped return envelope was mailed to all general dentists in rural Nebraska, (n=351). Rural was defined as any community outside of a 60 mile radius of the urban centers of Lincoln and Omaha. Analysis of the survey results was conducted utilizing SPSS software.

**Results:** A response rate of approximately 70 percent was achieved with 248 dentists responding to the survey. Slightly more than 25 percent of the respondents provided accurate information regarding the current ADA policy of first dental visit by age one.

**Conclusions:** A significant number of rural Nebraska dentists are not providing first dental visit information in accordance with the American Dental Association (ADA) policy of first dental visit by age one. An opportunity exists to provide additional training, in pediatric dentistry and/or policies in rural Nebraska. Likewise early intervention programs targeted at children in rural areas may be especially helpful in improving oral health.

**Funding:** None

## SOCIAL, CULTURAL, AND BEHAVIORAL FACTORS INFLUENCING ORAL HEALTH

**Abstract #:** 38

### EARLY CHILDHOOD CARIES PREVENTION: UNDERSTANDING REASONS FOR AFRICAN AMERICAN PARENTS' TREATMENT PREFERENCES

**Author(s):** Susan Hyde, DDS, MPH, PhD; Univ of California San Francisco, School of Dentistry. Corie Rowe, MS; Tufts Univ School of Dental Medicine. Judith C. Barker, PhD; Sally H. Adams, RN, PhD; Univ of California San Francisco, School of Medicine.

**Objectives:** Determine underlying reasons for parental preferences among early childhood caries preventive treatment options in a pilot sample of African American parents.

**Methods:** An acceptability and preferences interview of 5 treatments, 3 for children (tooth brushing with fluoride toothpaste, fluoride varnish, xylitol in food), and 2 for mothers (xylitol gum, chlorhexidine rinse), included: illustrated cards describing the treatment accompanied with a verbal explanation, photo/video clip, and product samples. African American Head Start parents (N=48) provided open-ended explanations for their treatment preference (TP) in each of 10 possible pairs. An iterative analytic process derived major constructs through consensus about independent applications of inductively derived codes.

**Results:** Five constructs emerged from the TP explanations accounting for 93% of TP choices: treatment promotes healthy or avoids unhealthy habits (25%), treatment recipient/beneficiary (22%), effectiveness (21%), convenience (17%), and safety (8%). Across the 10 choice-pairs, parents significantly preferred brushing over other treatments, claiming it promoted healthy habits (56%), targeted the child (21%), and was effective (11%). Some parents expressed concerns regarding the safety of the other 4 preventive treatments.

**Conclusions:** Parents cited healthy habit promotion, targeting the child, and effectiveness, as the major reasons for their preferred treatment: brushing. Safety issues included concerns about their child receiving fluoride, dislike of the idea of xylitol, and the use of chlorhexidine. These results indicate that when designing programs, community-specific parental preferences and concerns should be addressed.

**Funding:** Diversity Supplement to USDHHS/NIH/NIDCR U54 DE14251

**Abstract #:** 39

### MEXICAN-AMERICAN MOTHERS' PERSPECTIVES OF PEDIATRIC TREATMENT METHODS IN THE DENTAL CLINIC

**Author(s):** Erin E. Masterson, BA, Univ of California- San Francisco; Kristin S. Hoeft, MPH, Univ of California- San Francisco; Judith C. Barker, PhD, Univ of California- San Francisco

**Objectives:** To investigate low-income Mexican-American mothers' experiences with and opinions of various treatment methods used with their children aged 1-5 years in the dental clinic.

**Methods:** In an urban setting of California, a convenience sample of 48 Mexican-American mothers of preschool children provided in-depth qualitative interviews in Spanish about their beliefs and experiences surrounding their children's encounters in the dental clinic. Transcripts were independently read and thematically analyzed by two researchers using NVivo® software.

**Results:** Mothers generally expressed a desire for fair treatment and communication in the dental clinic, to be permitted in the treatment room with their young children and for their children to receive quality care from attentive dental personnel. Sixteen mothers had children who were physically restrained (strapped to a papoose board) or yelled at. This treatment method was generally not approved of and prompted six mothers to switch to a different provider. Ten mothers, however, felt this treatment method was the only option for their uncooperative children (usually with public insurance) to receive care and therefore tolerated physical restraint as it benefited their children. Parental anxiety and misunderstandings of chemical agents used to manage behavior in the clinic commonly resulted in treatment deferral.

**Conclusions:** Mexican-American mothers' dissatisfaction with their children's experiences in the dental clinic caused many to change clinics, interrupting consistent provision of care. Also, language barriers and lack of detailed information often resulted in fearful parents who hesitated or ceased to seek care for their children's dental needs.

**Funding:** USDHHS NIH/NIDCR U54 DE14251

**Abstract #:** 40

### PARENTAL ACCEPTABILITY AND PREFERENCES FOR CARIES PREVENTIVE TREATMENTS FOR YOUNG AFRICAN-AMERICAN CHILDREN

**Author(s):** Sally H. Adams, RN, PhD, Univ of California, San Francisco (UCSF); Corie Rowe, MPP, Tufts Univ School of Dental Medicine; Susan Hyde, PhD, DDS, MPH, UCSF

**Objectives:** Our prior research focused on parental treatment acceptability (TA) and treatment preferences (TP) for preventive dental treatments for young Hispanic children.

The objective was to determine parental TA and TP for 5 dental treatments to prevent early childhood caries in a pilot sample of African-American families with young children.

**Methods:** We interviewed 48 parents/caregivers of African-American children attending Head Start. We assessed TA and TP for tooth brushing with fluoride toothpaste (TB), fluoride varnish (FV), and xylitol in food (XF) for children; and xylitol gum (XG) and chlorhexidine (CHX) rinse for mothers. The interview included illustrated treatment cards with verbal descriptions; photo/video clips; and product samples. Parents rated TA of each treatment (1-5 scale) and TP in each of 10 possible pairs. TP were summed to create overall preference (0-4).

**Results:** All treatments were acceptable (means 4.4-4.9). TB, XG, and CHX were most acceptable, not significantly

different from each other, but more acceptable than XF ( $p < 0.05$ ). TB was more acceptable than FV ( $p < 0.01$ ). Summed overall treatment preference means revealed a strong preference for TB (mean 3.2) over all 4 other treatments (all  $p < 0.01$ ). Overall preference for TB was followed by FV (mean 2), XF (mean 1.8), XG (mean 1.6), and CHX (mean 1.5).

**Conclusions:** All treatments were acceptable, however parents strongly preferred tooth brushing with fluoride toothpaste, suggesting a preference for a child-based home treatment. Findings may be helpful in planning treatment programs for young African American children.

**Funding:** None

#### Abstract #: 41

### HIGHLIGHTING THE DISCONNECT: COMPARING LAY (PARENT) AND PROFESSIONAL MODELS OF THE ETIOLOGY OF EARLY CHILDHOOD CARIES

**Author(s):** Kristin S. Hoefft, MPH, Univ of California- San Francisco, Judith C. Barker, PhD, Univ of California- San Francisco, Erin E. Masterson, BA, Univ of California- San Francisco

**Objectives:** This study aimed to (a) understand and model how Mexican American mothers conceptualize intra-oral factors contributing to early childhood caries and (b) compare that to scientific models of the disease. Differences between the two models indicate areas for improved parent education.

**Methods:** A convenience sample of 48 Mexican American mothers of young children provided in-depth qualitative interviews in Spanish about their beliefs and experiences surrounding their children's oral health. Two researchers independently read and thematically analyzed transcripts using NVivo® software. Themes were modeled visually to display the causal links held by these mothers. The professional model was derived through review of the scientific literature.

**Results:** Mothers conceptualized the etiology of caries in a particular, organized way. When compared with scientific models, key differences emerged. Mothers believed candy consumption was the strongest factor influencing caries. Oral hygiene was noted as mediating the damaging effects of candy consumption, but not from bottle use or any other risk factor. Mothers did not mention bacteria as a cause of caries and viewed genetics as an uncontrollable etiological factor. Neither of these models addresses distal or structural causes of caries, such as lack of access to care.

**Conclusions:** There are major disconnects between the mothers' and the scientific conceptions of caries etiology. Dentists and other educators can use this model of mothers' understandings of caries causes to improve parent education – pointing out the role of bacteria and other sugar substances besides candy, and emphasizing the good effects of oral hygiene after bottle use.

**Funding:** USDHHS NIH/NIDCR grant # U54 DE14251

#### Abstract #: 42

### RURAL LATINO FARMWORKER FATHERS' UNDERSTANDING OF CHILDREN'S ORAL HYGIENE PRACTICES

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**Objectives:** To examine rural Latino fathers' understanding of their children's oral hygiene practices.

**Methods:** A convenience sample ( $n=20$ ) of fathers from a small agricultural city in California's Central Valley was recruited in their homes. Individual semi-structured qualitative interviews in Spanish were conducted. Interviews were audio-taped, translated and transcribed verbatim. Codes were developed and the text analyzed for recurrent themes.

**Results:** Fathers came from Mexico ( $n=15$ ) and El Salvador ( $n=5$ ). They had a total of 65 children (mean  $3.3 \pm 1.8$  children per family), with the mean age of youngest child =  $3 \pm 2.1$  years. Overall, 18 of 19 fathers reported that their wife was primarily responsible for taking care of the children's hygiene. Despite this, men were aware of their children's dental issues. Fathers agreed that children's teeth should be cared for from a young age, considered to be after 2 years. Their reported ideal age for a child's first dental visit was  $3.29 \pm 1.1$  years. Even though their children are young, the fathers described very minimal hygiene assistance given to children by either parent, and generally thought a child did not need supervision after about age 4 (range 1 to 11 years).

**Conclusions:** While rural Latino fathers might not actively participate in their children's oral hygiene, they are aware of and place value on it. Men are supportive of dental treatments, albeit later than recommended. Educational messages aimed at these families will disseminate to the fathers indirectly through conversations with their wives.

**Funding:** Grants NICDR U54 DE14251, CTST T32 DE017249

#### Abstract #: 43

### PRELIMINARY FINDINGS OF THE BALTIMORE HEALTH LITERACY AND ORAL HEALTH KNOWLEDGE PROJECT

**Author(s):** Mark D. Macek, DDS, DrPH, Univ of Maryland Dental School; Don Haynes, PhD, Univ of Baltimore Schaefer Center for Public Policy; William Wells, MPA, Univ of Baltimore Schaefer Center for Public Policy; Simon Bauer-Leffler, PhD, Univ of Baltimore Schaefer Center for Public Policy; P. Ann Cotten, DPA, CPA, Univ of Baltimore Schaefer Center for Public Policy; Ruth M. Parker, MD, Emory Univ School of Medicine.

**Objectives:** Accepted measures of health literacy assess medical word recognition, reading, and numeracy however they do not assess other relevant factors, such as basic conceptual knowledge. This study tested the extent to which conceptual oral health knowledge is related to health literacy.

**Methods:** A conceptual knowledge survey was developed with four sections: basic knowledge (20 questions), dental caries knowledge (8 questions), periodontal disease knowledge (8 questions), and oral cancer knowledge (8 questions). The

instrument was administered via face-to-face interviews to a sample of 100 low-income adults residing in Baltimore. The REALM and Short-TOFHLA health literacy instruments were also administered during the interviews. SAS was used for the analyses.

**Results:** The sample consisted primarily of African American women, aged 45-64 years, with 12 years of education, and a household income <\$25,000. Validity and reliability assessments reduced the 44-item survey to 23 questions (Cronbach alpha=0.74). Conceptual oral health knowledge was significantly associated with age, education level, and REALM scores however it was not associated with sex, household income, or Short-TOFHLA scores. Controlling for age and education level, conceptual oral health knowledge remained significantly associated with REALM scores.

**Conclusions:** Among low-income adults, medical word recognition is a reflection of conceptual oral health knowledge. These findings are particularly useful because applying interventions to address poor conceptual knowledge is more meaningful than applying interventions to poor word recognition. Future studies of oral health literacy should incorporate measures of conceptual knowledge so that the many pathways between health literacy and oral health are more fully understood.

**Funding:** National Institute of Dental and Craniofacial Research, NIH (1 RO3 DE016934).

#### Abstract #: 44

### ORAL HEALTH LITERACY: PATIENTS' RECOGNITION OF DENTAL TERMS ASSOCIATED WITH ACCEPTED TREATMENT PLANS

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**Objectives:** The purpose of this pilot study was to ascertain which dental terms patients associate with their planned treatment in order to identify which terms may need clarification.

**Methods:** New patients in the University of Iowa College of Dentistry fourth year comprehensive student clinic, who had received an exam and signed a proposed treatment plan, were invited to participate in a 65-item phone survey (N=216). Respondents were asked: 1) how well they understood their treatment plan presentation, and 2) to identify their proposed treatment based on 36 dental terms. Responses were compared to the treatment plans to assess which terms patients associated with their proposed treatment. Descriptive statistics and frequencies were calculated.

**Results:** 59 subjects completed surveys for a response rate of 27.3%. Ninety-six percent of respondents said they completely (54.2%) or mostly (42.4%) understood their proposed treatment. However, only 66.1% of respondents correctly identified their planned treatment. Respondents were least likely to recognize whether they had agreed to the following: alveoplasty, crown lengthening, bone surgery,

scaling and root planing, deep cleaning, core build-up or post and core, fixed partial denture, prophylaxis, radiographs, radiology, oral surgery, endodontics, periodontics, prosthodontics, operative, a flipper, or an excision.

**Conclusions:** Dentists should be cognizant of the dental terms they use when presenting treatment needs to their patients so that patients may be active participants in determining their proposed treatment.

**Funding:** Delta Dental of Iowa Foundation and University of Iowa, Dental Research Grant

#### Abstract #: 46

### ORAL HEALTH LITERACY: PATIENTS' PERCEPTIONS REGARDING THE CAUSES OF THEIR ORAL HEALTH PROBLEMS

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**Objectives:** The purpose of this pilot study was to assess patients' perceptions regarding the causes of their oral health problems.

**Methods:** After obtaining IRB approval, 216 new patients in the University of Iowa College of Dentistry fourth year student clinic were invited to participate in the study. The study consisted of a 65-item phone survey that assessed respondents' oral health literacy. Respondents were asked to identify the causes of their oral health problems from a list of 11 items. Descriptive and bivariate statistics were calculated.

**Results:** Fifty-nine people participated for a response rate of 27.3%. A majority of respondents identified "I haven't been to the dentist recently" (62.7%), "bacteria" (57.6%), and "It is a normal part of aging" (49.1%) as the most common causes of their oral health problems. Thirty-one percent of female respondents identified "Having children took the calcium out of my teeth" as a cause of their oral problems, and 28.8% of all respondents identified "I inherited bad teeth/gums" as a cause of their problems. Females were more likely than males to identify "inheritance" as a cause of their problems (50.0% vs. 12.1%;  $p<0.01$ ). Seventy-seven percent of respondents aged 60 and older identified "It is a normal part of aging" as a cause of oral health problems compared to respondents aged 30-59 (41.7%) or < 30 years of age (15.4%;  $p<0.01$ ).

**Conclusions:** This study highlights the need for improved education of patients regarding the most common causes of oral health problems.

**Funding:** Delta Dental of Iowa Foundation and University of Iowa Dental Research Grant

**Abstract #: 47**

**UTILITY OF FINDINGS IN AN EVALUATION OF DENTAL PRACTICE-BASED RESEARCH NETWORKS**

**Author(s):** Mary Sue Hamann, PhD, NIH/NIDCR, Kathy Hayes, DMD, NIH/NIDCR

**Objectives:** In 2005, the National Institute of Dental and Craniofacial Research (NIDCR) funded three networks to create a General Dental Practice-based Research Network program. The overall goal of the program is to strengthen the knowledge base for clinical decision-making in the real world environment of dental practices.

**Methods:** Three key evaluation questions for a mid-course review were established based on interviews with major stakeholders, document reviews, and review of the literature: (1) How likely is the achievement of the initial NIDCR program goals and objectives? (2) How has the research capacity of community dentists been influenced by their participation in the networks? (3) How sound is the science conducted by the networks?

**Results:** A mixed methods evaluation was conducted that included document reviews, surveys, and group and individual interviews. Site visits were conducted at each network and included visits to 28 dental practices conducting research. Evaluation findings and recommendations for program improvement were presented in a written executive summary to NIDCR institute and program leadership. A verbal summary of key findings and recommendations was presented to project leaders and a national monitoring and advisory committee. The formal written report will be distributed widely.

**Conclusions:** The design and management of the evaluation facilitated data collection and analysis in a timely fashion. Preliminary written and verbal reports of major findings were made promptly to major stakeholders. Verbal and written reports included a set of recommendations for program improvements. Most of the recommendations were accepted and implemented.

**Funding:** National Institute of Dental and Craniofacial Research, National Institutes of Health

**Abstract #: 48**

**USE OF RESTORATIVE MATERIALS BY PRIVATE PRACTICES AND COMMUNITY CLINICS OF THE NORTHWEST PRECEDENT NETWORK**

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**Objectives:** To investigate the association of type of restorative dental material with the type of dental practices of the Northwest PRECEDENT network.

**Methods:** Data on the treatments of new dental caries during the previous year, including the restorative material used,

were collected in a survey with a systematic random sample of patients (n=1505) visiting Northwest PRECEDENT private practices and community clinics (n=74). Prevalence ratios were estimated using GEE multiple binomial regressions to relate restorative dental material to practice type.

**Results:** Of 90 teeth restored in 33 patients in 3 community clinics, 57% were filled with amalgams, 30% with composites, 3% with glass ionomer or temporary materials, and 10% received indirect restorations. Of 1659 teeth restored in 632 patients in 71 private practices, 13% were filled with amalgams, 69% with composites, 6% with glass ionomer or temporary materials, and 13% received indirect restorations. When comparing amalgam and composite restorations, community clinics were 4.1 times as likely to use amalgam as private clinics [95% Confidence interval(CI)=2.6-6.4]. After adjusting for tooth type, number of surfaces restored, and practices' location, US state, and patient volume, the prevalence ratio was 5.1 (95%CI=2.4-10.9)

**Conclusions:** Community clinics use more amalgams than private practices. Whether the findings reflect the dental material characteristics such as cost and longevity, or the dentists' characteristics in those settings such as preference and training; or patients' preferences deserve further investigation.

**Funding:** Submitted on behalf of the Northwest PRECEDENT network, with support from: NICDR grants DEO16750 and DEO16752.

**Abstract #: 49**

**RESTORATIVE MATERIALS AND GENDER: USE OF RESTORATIVE MATERIALS BY GENDER OF THE DENTISTS**

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**Objectives:** To investigate the type of restorative dental material used by female and male dentists from the Northwest PRECEDENT network.

**Methods:** Data on the treatments of new dental caries during the previous year, including the restorative material used, were collected in a survey with a systematic random sample of patients (n=1530) visiting Northwest PRECEDENT general dentists (n=80). Prevalence ratios were estimated using GEE multiple binomial regressions to relate amalgam (vs composite) use to dentist characteristics.

**Results:** Of 257 teeth restored in 104 patients by 11 female dentists, 37% were filled with amalgams, 45% with composites, 6% with glass ionomer or temporary materials, and 12% received indirect restorations. Of 1598 teeth restored in 608 patients by 69 male dentists, 12% were filled with amalgams, 70% with composites, 5% with glass ionomer or temporary materials, and 13% received indirect restorations.

When comparing amalgam and composite restorations, female dentists were 3.2 times as likely to use amalgam as male dentists [95% Confidence interval(CI)=1.8-5.8]. After adjusting for tooth type, number of surfaces restored, and dentist's age, race, and years of practice, the prevalence ratio was 2.9 (95%CI=1.8-4.7).

**Conclusions:** Use of amalgam as a restorative material is higher among female dentists than among male dentists of the Northwest PRECEDENT network. This gender difference in dental material use was not explained by other dentist characteristics or restoration location.

**Funding:** Submitted on behalf of the Northwest PRECEDENT network, with support from: NICDR grants DEO16750 and DEO16752.

**Abstract #: 50**

**FACTORS ASSOCIATED WITH ADOPTION OF CDC INFECTION CONTROL RECOMMENDATIONS AMONG U.S. DENTISTS**

**Author(s):** Jennifer L. Cleveland, DDS, MPH, Centers for Disease Control and Prevention, Arthur J Bonito, PhD, Research Triangle Institute International, Laurie Barker, MS, Centers for Disease Control and Prevention, Misty Foster, BS, G. Gordon Brown, PhD, Research Triangle Institute International

**Objectives:** In 2003, the Centers for Disease Control and Prevention (CDC) published guidelines for infection control in dental health-care settings. The purpose of this study was to examine factors associated with implementation among U.S. dentists.

**Methods:** In 2008, we conducted a mail survey of a stratified random sample of 6,825 U.S. dentists in public health and private practice (adjusted response rate of 49%). The survey included items on demographics, professional/practice characteristics, KAPS, and implementation of the recommendations. Items on infection control included, among others, having a designated infection control coordinator; documenting sharps injuries, trying/adopting safety devices, and maintaining dental water quality. We conducted a bivariate analysis in which chi-square tests were considered significant at  $p \leq .0001$ .

**Results:** Among 3,042 respondents, demographic factors closely mirrored the non-responders and the general population of U.S. dentists. Nearly 80% of practices had a designated infection control coordinator. Sixty percent of dentists had tried or were using safety devices in the previous 12 months. In general, implementation of recommendations was higher among dentists in the youngest age group (29-44 years), in larger practices, who earned more CDE hours in infection control, and who had more sources of exposure to the guidelines. Less than 30% of practices disinfected and monitored dental unit water-lines.

**Conclusions:** This study showed non-uniform adoption of recommended infection control practices among U.S. dentists in public health and private practice. Strategies are needed to obtain consistency in adoption of CDC infection control recommendations.

**Funding:** None

**ACCESS TO ORAL HEALTH SERVICES FOR VULNERABLE POPULATIONS**

**Abstract #: 51**

**RISK FACTORS AFFECTING ORAL HEALTH IN OLDER WOMEN**

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**Objectives:** This pilot study explored the effects of ethnicity and socio-economics on the oral health of older women.

**Methods:** Thirty-six women, 60 years or older from different ethnic groups attending a meeting in New York City, consented to participate in the study. The PI conducted the study in a private practice in New York City. Each subject was compensated \$20 and given an oral hygiene kit. A questionnaire recorded the education, income, oral hygiene habits, visits to their dentists, type of treatment they sought, caries, restorations, missing and remaining teeth, perio-status, smoking, medical conditions, and medications.

**Results:** (1) The number of study participants smoking and taking calcium supplements was low in all ethnic groups. (2) The small Native American population skewed results to such an extent that they had to be entirely discounted. (3) While African-Americans had education levels comparable to Caucasians and income levels somewhat lower than Caucasians, both groups displayed comparable scores for fair dental hygiene habits and dental health. (4) Hispanics showed the lowest education and income levels which correlated with the lowest levels for poor dental hygiene habits and hence poor dental health. (5) Asian-Americans had lower education and income levels but displayed the highest scores for dental hygiene habits and good dental health.

**Conclusions:** (1) Dental societies and practitioners should continue to emphasize the importance of good dental habits and health, especially to our senior population. (2) This same professional group should campaign for inclusion of dental benefits in medical programs enacted for our senior and less fortunate populations. (3) Further study is needed on a larger population of senior patients.

**Funding:** None

**Abstract #: 52**

**META-ANALYSIS AND REVIEW ON THE EFFECTIVENESS OF DIFFERENT XYLITOL PRODUCTS IN CARIES PREVENTION**

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**Objectives:** Recently there is an expansion in oral xylitol products on the market. The purpose of this study is to identify effective commercially available oral xylitol products for the purpose of implementing xylitol programs in the US.

**Methods:** An electronic search through PubMed database was performed to identify studies on the effectiveness of xylitol products in caries prevention. The search was limited to English language full text articles of human clinical trials. Meta-analysis was performed and pooled estimates using combined fixed and random effects models were calculated.

**Results:** Although there are various forms of xylitol products available in the market, online or supplied through dental offices, only a few products were clinically tested. These are xylitol chewing gum, lozenges, candies, xylitol based foods, gummy bears, tooth paste, and “Fall-Asleep Pacifier” (FAP) using xylitol tablets. Products with (100%) xylitol chewed or consumed 5 times per day with a total dose of 5-10 g of xylitol/day were most effective. Meta-analysis results showed that clinically tested products containing high levels of xylitol had significantly prevented and reduced the DMFS score compared to the control. Pooled estimate using the combined fixed and random effect of standardized mean difference was -0.26 (95% CI: -0.3, -0.20) and -0.32 (95% CI: -0.5, -0.08) respectively.

**Conclusions:** Practitioners should consider product form, dose and frequency when prescribing xylitol as a caries preventive tool. In an era of evidenced based dentistry, further research is needed to test the effectiveness of different xylitol products in caries prevention.

**Funding:** None

#### Abstract #: 54

### EVALUATING EXPANDED ACCESS TO ORAL HEALTH CARE FOR HIV+ PATIENTS: A RE-AIM FRAMEWORK AND SELECT BASELINE DATA

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**Objectives:** In 2006, Montefiore Medical Center’s community based HIV primary care program, CICERO, and dental program were awarded a HRSA SPNS grant to improve HIV patients’ access to oral health care. Baseline data from 2007 are for 1166 poor, minority HIV patients served by CICERO. Prior to the intervention, in 2007, 157 (13.5%) patients had a documented dental visit.

**Methods:** The intervention uses a patient navigator (PN) to connect HIV+ patients seen during medical visits with dental providers at co-located dental clinics and a mobile van. The Reach Effectiveness Adoption Implementation and Maintenance (RE-AIM) framework is being used to evaluate this non-randomized design. Initially we document the intervention’s accomplishment of Reach and Adoption – i.e. the increase in

percent of patients receiving dental care and increase in number of clinical sites and practitioners referring to dental care. Oral health outcomes (Effectiveness) will be reviewed at a later time.

**Results:** To date, of the 321 patients referred to the PN, 302 patients met with the PN, 153 made dental appointments, 121 stated they had a dentist. 99 exams and consultations were performed, 231 x-rays were taken, 65 fillings placed, 78 teeth extracted, 32 prophys and 10 scalings were performed.

**Conclusions:** The use of RE-AIM framework allows us to incrementally assess how far we have penetrated into the target patient population and our ability to sustain care.

**Funding:** Health Resources and Service Administration

#### Abstract #: 55

### LINKING HIV+ PATIENTS TO DENTAL CARE USING PATIENT NAVIGATORS

**Author(s):** Joan Grcevic, DDS, Montefiore Medical Center, Arthur E. Blank, PhD, Albert Einstein College of Medicine, Niko Verdecias, MPH, Montefiore Medical Center, Alison Karasz, PhD, Albert Einstein College of Medicine, Robert Beil, MD, Montefiore Medical Center, Paul Meissner, MSPH, Montefiore Medical Center

**Objectives:** Project TEETH, a 5-year HRSA-SPNS funded grant, was designed to increase the number of HIV+ patients referred to and utilizing dental services at ten Montefiore Medical Group sites. One objective is to design and implement an integrative model of oral health (OH) care by integrating a Patient Navigator (PN) into three primary care sites with co-located dental facilities.

**Methods:** PNs were trained by the dental director on OH care practices, HIV+ associated lesions, and the appointment making process. Scripted dialogues were practiced to develop a rapport between the PN, patients and medical providers. Project Director integrated PN with medical providers at three clinics. As patients came for medical appointments, providers referred patients to the PN for OH education and dental appointments. To familiarize patients with the dental clinic and reduce dental anxiety, PN accompanied patients to the dental clinic and followed up on scheduled appointments.

**Results:** To date, 321 patients were referred to the PN. Of the 302 patients that met with the PN, 153 made dental appointments, 121 stated they had a dentist, 19 refused an appointment and 9 needed follow up. 13 patients refused to meet with the PN.

**Conclusions:** PNs have been well accepted by patients. By integrating PNs into the existing medical and dental services we can provide additional support towards expanding HIV+ patients’ comprehensive care and raise awareness of OH issues among the HIV population.

**Funding:** HRSA 5-H97-08-006

**Abstract #: 56**

**DENTAL HYGIENE TRAINING PROGRAM INSTITUTES A NEW MODEL FOR TREATING PATIENTS WITH HIV**

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**Objectives:** To increase access to dental care for an underserved and vulnerable population. To create a model for providing dental care to HIV+ patients utilizing students in a community college dental hygiene program.

**Methods:** HIV Alliance is one of 15 national sites who received funding from HRSA in 2006 under the SPNS Oral Health Initiative. A partnership between HIV Alliance and Lane Community College was created to implement a demonstration project in rural Oregon to increase access to dental care for individuals living with HIV. Dental services are provided at the community college dental clinic utilizing dental hygiene students and community dentists.

**Results:** One major innovation is the use of a dental case manager (DCM) and it is important to the success of the dental program when providing care for an underserved population. The DCM has decreased the no show rate to 11% for the SPNS patients. HIV+ patients are engaged in comprehensive dental services in a responsive atmosphere with enthusiastic dental hygiene students. Rather than only providing episodic or emergency dental treatment, the clinic provides increased access and improved oral health status through comprehensive dental treatment.

**Conclusions:** A new generation of dental professionals is trained to deliver comprehensive dental services without hesitation to a vulnerable population. The model provides a benefit to the learning environment of the dental hygiene students and to the patients who receive quality, compassionate dental care.

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**Abstract #: 57**

**THE MIAMI DENTAL ACCESS PROGRAM (MDAP)**

**Author(s):** Yves Jeanty, MPH, Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine, Lisa R. Metsch, Ph.D., Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine, Margaret Pereyra, Dr.PH, Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine, Michael Peleg, DMD, Dept. of Surgery, Univ of Miami Miller School of Medicine, Gabe Cardenas, Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine, Henry Boza, Dept. of Epidemiology and Public Health, University of Miami Miller School of Medicine, Ricardo Lopez, Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine, Carey Sivori, Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine

**Objectives:** The overall goal of this project is to increase access to oral health care services by HIV-infected patients and to decrease identified barriers. We are evaluating a mobile

dental program for low-income, medically underserved persons living with HIV in Miami-Dade County.

**Methods:** The "Miami Dental Access Program (MDAP)" emphasizes prevention, early intervention, and linkage to comprehensive oral health. MDAP visits primary care clinics and offers dental services to patients seen that day for HIV primary care. Dental screenings include x-rays, comprehensive oral exams, cleanings, and minor restorative services. Patients are assessed every six months to ensure linkage to comprehensive oral health care at a dental care home.

**Results:** As of December 2008, 202 participants have enrolled with 98% receiving a comprehensive oral exam, 84% receiving preventive services, 42% receiving periodontic services and 26% receiving restorative services. Of the participants, 78% are male, 68% are Black, 25% are homeless and 79% earn \$850 or less each month. Approximately 60% reported lifetime crack or cocaine use. Participants were seen an average of two visits and received an average of 6 dental services. Over half have not seen a dentist in the previous two years. The most commonly reported barrier to care was not being able to get an appointment.

**Conclusions:** There continues a sizable number of people living with HIV/AIDS that do not utilize regular oral health services. Programs such as MDAP provide an innovative approach to enhancing access.

**Funding:** Health Resources and Services Administration (HRSA) Grant Number: H97HA07515

**Abstract #: 58**

**UTILIZATION OF DENTAL CARE SERVICES AMONG LOW INCOME HIV-POSITIVE PERSONS IN PRIMARY CARE**

**Author(s):** Margaret Pereyra, Dr.PH, Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine, Lisa R. Metsch, Ph.D, Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine, Scott Tomar, DMD, DrPH, Dept of Community Dentistry and Behavioral Science, Univ of Florida, Eduardo Valverde, MPH, Div of HIV/AIDS Prevention, Centers for Disease Control, Yves Jeanty, MPH, Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine, Shari Messinger, PhD, Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine, Henry Boza, Dept. of Epidemiology and Public Health, Univ of Miami Miller School of Medicine

**Objectives:** We investigated the use of dental care services among a population of low income persons living with HIV/AIDS who had not seen a dental care provider during the twelve months prior to study enrollment.

**Methods:** Five hundred and ninety-three participants were recruited from five HIV primary care clinics in two South Florida counties and interviewed regarding past utilization of dental care services, HIV primary care service utilization, and barriers to care. Multivariate logistic regression analysis was used to determine correlates of oral care utilization within the preceding two years.

**Results:** One-third of respondents reported seeing a dentist in the preceding two years. The odds of having seen a dentist were greater for respondents with stable housing, at least a high school education, and who had received help in getting dental care; black respondents were less likely to have seen a dentist in the preceding two years.

**Conclusions:** Despite the availability of dental services for low-income HIV-positive persons, utilization of dental care remains low. This study reinforces the need to provide assistance to HIV-positive persons in obtaining dental care. In particular, it indicates that such assistance should be targeted toward African Americans, persons with low income and unstable housing situations, and those with limited help to navigate the health care system.

**Funding:** National Institute of Dental and Craniofacial Research

**Abstract #: 59**

**DENTAL CASE MANAGERS: INCREASING ACCESS IN HIV DENTAL PROGRAMS**

**Author(s):** Helene Bednarsh, BS, RDH, MPH, Boston Public Health Commission, Carol Tobias, MMHS, Boston Univ School of Public Health, Sally Bachman, PhD, Boston Univ School of Public Health, Jane Fox, MPH, Boston Univ School of Public Health

**Objectives:** To present focus group data gathered from new oral health care team members, dental case managers (DCM), highlighting breadth of roles and DCM impact on increasing access to oral health care for people with HIV.

**Methods:** In 2006 HRSA funded 15 demonstration projects under the SPNS Oral Health Initiative to increase access to oral health care for persons living with HIV. Nine sites employ a staff member who serves as a DCM; a focus group of DCMs from these sites was convened in June 2008. Through guided discussion the group described their perceived impact in the programs, methods of collaboration with traditional HIV case managers, training needs, DCM qualifications, and applicability for dental programs for other populations.

**Results:** DCMs perceive that they are effective in reducing barriers to care, that non-dental personnel can be trained to work in this capacity, and that their major functions relate to outreach, retention and patient adherence to care. DCMs address barriers to care in a way that other HIV-care providers cannot: they perform fewer tasks per patient and thus can serve a higher volume of patients. Their educational role further differs in that they focus mainly on oral healthcare.

**Conclusions:** Case managers are used in HIV medical/support programs, but previously have not been dedicated to oral healthcare. DCMs employed in the HRSA/SPNS demonstration sites suggest they can be effective in facilitating access to comprehensive oral health care for people living with HIV/AIDS.

**Funding:** The work presented in this paper was supported by the Evaluation and Support Center, Innovations in Oral Health Care Initiative (H97HA07519-01-00) funded by the

HIV/AIDS Bureau, HRSA, DHHS. The opinions presented here are, however, the authors.

**Abstract #: 60**

**COLLABORATIVE OPPORTUNITIES TOWARD INCREASING ACCESS TO ORAL HEALTH CARE**

**Author(s):** Myron J. Bromberg, DDS, Chair, Legislative & Governmental Affairs Council, Academy of General Dentistry (AGD)

**Objectives:** To produce a universal document that provides a comprehensive picture of access to oral health care inclusive of a focus on oral health literacy and substantive solutions to access to care that can be implemented in the real-world through the collaboration of organizations, governmental entities, and community interests.

**Methods:** The Academy of General Dentistry assembled a Task Force comprised of a national spectrum of general dentists with a wide range of experience from private to public practice. Upon comprehensive literature review and consultation with leading experts in access to oral health care, the Task Force produced a white paper on access to care.

**Results:** The White Paper on Increasing Access to and Utilization of Oral Health Care Services proposes over 30 collaborative strategies to solving access to care, including applying Medicaid cost savings from converting to paperless systems toward increased Medicaid fees for underserved practice, and lobbying for statutory support of loan repayment programs tied to practice in underserved regions.

**Conclusions:** This intensive process yielded a renewed characterization of the access to care problem and packaged specific solutions into one document that serves as a mandate for collaborative efforts to achieve its ends.

**Funding:** Academy of General Dentistry.

**Abstract #: 61**

**CARE PARTNERSHIP DENTAL CLINIC PROJECT**

**Author(s):** Randall Taylor, B.S., Maureen Romer, D.D.S., MPA., Arizona School of Dentistry & Oral Health, A.T. Still University

**Objectives:** Development of a public/private partnership to create access to comprehensive oral health care for the underserved population through a student run service learning program in Mesa, Arizona.

**Methods:** In 2007, Community Asset and Resource Enterprise (CARE) Partnership was awarded a lease agreement with the Arizona Department of Health Services for a temporary mobile dental clinic trailer. Through a community effort, this was successfully remodeled and the clinic opened in September 2007. Twenty professional volunteers perform patient care while providing an educational model for pre-dental students.

**Results:** In the first 12 months of the program, approximately 90 patients received comprehensive care at no financial cost. Although no monetary fee is charged, patients are encouraged to "pay it forward" by helping others in the

community. Approximately 65 percent of patients have successfully met this commitment through volunteering over 240 hours of service. The program has provided a total of 150 hours of dental care and over 700 hours of clinical and social service learning experiences for over 30 pre-dental students. In the past year, the clinic has provided the equivalent of more than \$94,000 worth of dental services to the community.

**Conclusions:** The CARE Partnership Student Run Dental Clinic Project is a successful public/private partnership between CARE Partnership, ASDOH Dental Students and undergraduate pre-dental students from the Phoenix area. The program is meeting its goals of service, training of undergraduate pre-dental students and establishing a community network for access to oral health care.

**Funding:** None

**Abstract #: 62**

### **PERCEPTION OF SENIOR DENTAL STUDENTS REGARDING PREPARATION FOR COMMUNITY PRACTICE: PUBLIC AND PRIVATE UNIVERSITIES, COLOMBIA, 2007**

**Author(s):** Alejandra Valencia, DDS, MPH, MS Candidate University of Iowa; Blanca Susana Ramirez Puerta, DDS, MPH, University of Antioquia; Cecilia Maria Martinez Delgado, DDS, MPH, University of Antioquia; Angela Maria Franco Cortes, DDS, MPH, University of Antioquia; and Karen Peters, DrPH, University of Illinois at Chicago

**Objectives:** To investigate the perceptions of senior dental students regarding the preparation that they have received for working in different community settings and to compare these perceptions between students from public and private universities in Colombia.

**Methods:** A self-administered questionnaire was distributed by faculty of the University of Antioquia and completed by n=191 students. Ten dental schools participated in the study. Seven were private and three were public. Descriptive results are reported as means and standard deviations and comparisons between public and private universities were conducted using the Student t-test.

**Results:** While dental students report that they have received more training about how to identify health problems in the community and how to work with communities around health issues, they also report receiving less preparation about rural issues and issues related to underserved populations. In addition, students reported having more confidence about their abilities to build relationships in a district but less confidence in how to use epidemiological tools to understand health needs. Finally, at the institutional level, some differences were found between the public and private universities.

**Conclusions:** Results indicate that students report differential rates of preparation and confidence related to their future practice in various community settings and students from public universities have a tendency to perceive receiving better training than students from private universities. These findings suggest areas for further curriculum development in the areas of community based dental practice in Colombia.

**Funding:** 2007-08 Rural Health Profession Student/Fellow Award; Funding Sources: IL Critical Access Hospital Network and National Center for Rural Health Professions, UIC College of Medicine - Rockford

**Abstract #: 63**

### **ENHANCING ACCESS TO ORAL HEALTH CARE FOR UNDERSERVED COMMUNITIES: PROJECT "DENTAL HOME"**

**Author(s):** Mark S. Schweizer, D.D.S., Assistant Professor, Nova Southeastern College of Dental Medicine, Lisa R. Metsch, Ph.D., Associate Professor Department of Epidemiology and Public Health, University of Miami Miller School of Medicine, Diane Ede-Nichols, D.M.D, Associate Professor, Nova Southeastern College of Dental Medicine, Barry Waterman, D.D.S., Assistant Professor, Nova Southeastern College of Dental Medicine, Juan Velasco, D.D.S., Nova Southeastern College of Dental Medicine, Steven Abel, D.D.S., M.S.D., Assistant Dean for Extramural Affairs, Nova Southeastern College of Dental Medicine.

**Objectives:** Project "Dental Home" is an ongoing community oral health outreach program in Broward County, Florida to improve the oral health of adults and children in underserved communities.

**Methods:** The approach consists of providing oral health services at community centers through the use of portable dental equipment to provide oral health screenings, preventive dental care, and referral to a "dental home." Oral health services are provided by dental students from NOVA Southeastern College of Dental Medicine with supervision by a faculty preceptor. Through a collaborative grant, Memorial Healthcare System ensures participants' medical needs are addressed.

**Results:** As of December 2008, 112 patients have been screened or received dental services. Of the 70 patients receiving services, 89% indicated that they did not have a regular dentist for routine care. Over 50% have not seen the dentist in the past two years and 24% have not seen the dentist in the past 5 years. Sixty-five percent reported that there was a time in the past two years that they needed dental care and could not receive it. The most common barriers were the cost of dental services and lack of insurance. Almost half of participants reported teeth and gums were in "fair" or "poor" condition. Sixteen percent of adults reported having missed a day of work because of a dental problem.

**Conclusions:** The lack of access to care as well as financial limitations of this underserved population is a major barrier to receiving dental care.

**Funding:** Health Foundation of South Florida

**Abstract #: 64**

### **DEVELOPMENT AND DEMOGRAPHICS OF GOLDIE'S PLACE, THE NATIONS FIRST STUDENT RUN DENTAL CLINIC**

**Author(s):** Rana Shahi, Tariq Riyal, Wendy Yang, and Mike Duda

**Objectives:** To inform and describe the development and demographics of Goldie's Place, of a student run dental clinic.

**Methods:** Through the development of the AAPHD-Student Chapter, students from the University of Illinois at Chicago College of Dentistry (UIC-COD) were able to organize and develop a successful student run clinic. The generous contributions and assistance of Henry-Schein, UIC-COD, and homeless shelters, made it possible to establish and operate a thriving student run dental clinic.

**Results:** Three pilot dates were successfully run. Students effectively ran a front office, took radiographs, sterilized instruments, performed treatment plan, and administered dental care for the homeless patients

**Conclusions:** The establishment of a successful student run dental clinic and the administration of free dental treatment to an underserved population

**Funding:** University of Illinois, Chicago - College of Dentistry, Goldie's Place, and Henry Schein Cares

**Abstract #: 65**

### **DENTAL STUDENTS' WILLINGNESS TO TREAT UNDERSERVED POPULATIONS**

**Author(s):** Kirstina J. Gratz, BA, University of Iowa College of Dentistry, Michelle R. McQuistan, DDS, MS, University of Iowa College of Dentistry, Fang Qian, PhD, University of Iowa College of Dentistry, Raymond A. Kuthy, DDS, MPH, University of Iowa College of Dentistry

**Objectives:** The purpose of this study was to assess University of Iowa dental students' willingness to treat underserved populations based on the students' year of education.

**Methods:** Surveys were developed to assess first-fourth year (D1-D4) students' attitudes towards treating 13 underserved populations. The surveys queried students about their willingness to treat underserved populations and how various professional and personal experiences have impacted students' willingness to treat underserved populations. After obtaining IRB approval, the surveys were distributed to 290 D1-D4 students at the start of the 2008-2009 academic year. Descriptive statistics and frequencies were calculated.

**Results:** 268 surveys were completed for a response rate of 92.4%. In general, D1 students were the most willing to treat underserved populations post graduation. In contrast, D4 students were more likely to limit the number of underserved patients they were willing to treat. Students were the most unsure about whether they would treat homebound, mentally compromised, homeless, known drug users and jail inmates in the future. Professional and personal experiences had positive impacts on students' willingness to treat

underserved populations. More than 30% of respondents stated they were more willing to treat the following populations based on their dental school experiences: low income, frail elderly, medically complex, mentally compromised, Medicaid, HIV/AIDS, children under age 3, other ethnic groups, and non-English speaking patients.

**Conclusions:** Dental students are willing to treat some underserved populations post graduation. Positive professional experiences should be developed to encourage dental students to treat more underserved populations.

**Funding:** Univ of Iowa, Dental Research Grant

### **ADDRESSING ORAL CANCER AND ITS RISK FACTORS**

**Abstract #: 66**

### **FOURTH YEAR DENTAL STUDENTS' BARRIERS TO TOBACCO INTERVENTION SERVICES.**

**Author(s):** Bhagyashree Pendharkar, BDS, Steven M Levy, DDS, MPH, DPH, Michelle R McQuistan, DDS, DPH, Fang Qian, Ph.D, Department of Preventive and Community Dentistry, University of Iowa, Christopher A. Squier, PhD, Department of Oral Pathology, Radiology, and Medicine, University of Iowa, Nancy A Slach, RDH, BS, Department of Periodontics, University of Iowa, Mary Lober Aquilino, MSN, PhD, FNP, Department of Public Health, University of Iowa.

**Objectives:** To identify barriers related to provision of tobacco intervention services by fourth year dental students at the College of Dentistry, University of Iowa.

**Methods:** All incoming fourth year dental students at the University of Iowa were invited to participate in the study during their July academic orientation. A self-administered questionnaire was completed by the students concerning their perceived barriers and related factors. Descriptive statistics were used to report students' responses to individual questions.

**Results:** The response rate was 97% (68/70). The age range of participants was from 24-38 years and 66% were male. Seventy-three percent of the students were never smokers and only 6% were current smokers. 90% reported that dentists have an important role to play and office-based intervention can have an impact on patients' quitting. Thirty-four percent spent two minutes per patient per visit in tobacco cessation counseling during the past year and 88% were planning to provide tobacco intervention services in their future private practice. Most common barriers reported were inadequate knowledge about nicotine replacement drugs (75%), inadequate skills in providing tobacco intervention services (75%), forgetting to give tobacco intervention advice (91%), patient's resistance to tobacco intervention services (96%), and inadequate time available for tobacco intervention services (96%).

**Conclusions:** Results suggest that students could benefit from additional didactic training and clinical emphasis in order to facilitate effective intervention services in the dental school.

**Funding:** Delta Dental of Iowa Foundation

**Abstract #: 67**

### **SURVEY RESULTS OF DENTAL HYGIENISTS' KNOWLEDGE, OPINIONS AND PRACTICES OF ORAL CANCER DETECTION AND PREVENTION IN A LARGE MULTI-STATE PRACTICE.**

**Author(s):** Elina Budrevich, RDH, BSDH(c), Pacific University

**Objectives:** To survey actively practicing dental hygienists in OR, WA, and ID on their knowledge and practices regarding oral cancer detection and prevention; and the larger role they play in overall health.

**Methods:** A survey instrument designed by Charles W. LeHew, Ph.D. and Joel Epstein, DMD, MSD, FRCD(c), University of Illinois at Chicago was modified into a thirty-eight questionnaire designed for dental hygienists. A representative sample of 150 registered dental hygienists in OR, WA and ID was collected in September 2008.

**Results:** High number of respondents (89.7%) correctly pointed at lateral side of the tongue as a typical oral cancer location; however, one third of hygienists missed floor of the mouth as common site for oral cancer. Twenty one percent of the hygienists knew that family history is the least likely reason for developing oral cancer, but majority (70.4%) mistakenly named old age as the least risk factor in developing oral cancer. Only half knew that early stages of oral cancer are asymptomatic. Most of respondents chose white lesion (71.6%) over red lesion (19.8%) as early manifestation of oral cancer. 71.6% of the dental hygienists reported to provide oral cancer examination for their patients on a regular basis.

**Conclusions:** The results of the survey indicate gaps associated with current scientific knowledge and clinical dental hygiene practice.

**Funding:** None

**Abstract #: 69**

### **THE IMPACT OF A MEDIA CAMPAIGN ON SCREENING FOR ORAL CANCER**

**Author(s):** Jenefer M. Willem, MSc, University of Michigan School of Dentistry; Amid I. Ismail, BDS, MPH, DrPH, MBA, Temple University's Kornberg School of Dentistry

**Objectives:** Findings are presented from a mass media campaign and community outreach program to promote screening for oral cancer among low-income African-American adults in Detroit.

**Methods:** The two-year campaign promoted screening using billboards, radio and newspaper ads, and a toll-free hotline. Billboards encouraging screening were placed for 2-week periods in visible locations in Detroit. Sixty-second messages on the impact of oral cancer and that screening is "painless and free" were aired on 3 radio stations popular with the target audience. Ads displaying the hotline were also placed in 2 local newspapers. The media messages were developed collaboratively with focus groups representing the target audience. Callers to the hotline were scheduled for a screening with the free clinic operated by the project. Referral to an oral surgeon was scheduled if a suspicious lesion was

found. Educators conducted sessions with community-based organizations.

**Results:** During the campaign, March 2005 – December 2007, 1,327 radio spots were released; 42 billboards were displayed; and 2 newspaper ads were printed. The hotline received 1791 calls. The majority of callers report that their call was prompted by a radio ad (57%) or billboard (18%). A total of 242 education sessions were conducted. The clinic screened 1,045 adults and referred 78 for further diagnosis. Four cancers, 2 pre-cancers, and 12 benign tumors were detected in patients seen by the screening clinic and associated oral surgeon.

**Conclusions:** A multi-faceted media campaign including radio ads and billboards proved to be successful in increasing awareness and screening among a high-risk population at a relatively low cost.

**Funding:** This study was funded by the National Institute of Dental and Craniofacial Research/National Institutes of Health Grants DE14410-03 and DE16194-01 and through a grant from the Delta Dental Fund, an affiliate of the Delta Dental Plan of Michigan

**Abstract #: 71**

### **THE HEAD AND NECK CANCER ALLIANCE: 2009 - A YEAR OF CHANGE !**

**Author(s):** Susan G. Reed, DDS, DrPH, Department of Craniofacial Biology, Julie Blair, MA, CCC-SLP, Evelyn Trammell Institute of Voice and Swallowing, Ann M. Durgun, Department of Otolaryngology, Head & Neck Surgery, Terry A. Day, MD, Department of Otolaryngology, Head & Neck Surgery, Medical University of South Carolina; Meryl L. Kaufman, MEd, CCC-SLP, The Emory Voice Center, Steven M. Roser, DMD, MD, Department of Oral and Maxillofacial Surgery, Emory University.

**Objectives:** To establish The Head and Neck Cancer Alliance to advance common goals and secure common interests of institutions and individuals addressing oral, head and neck cancer.

**Methods:** Increasing awareness of oral, head and neck cancer has been a major focus of the Yul Brynner Head and Neck Cancer Foundation and numerous other organizations. Duplication of effort is a concern of individuals and institutions that address oral, head & neck cancer. Therefore a "Head and Neck Cancer Alliance" is being formed to serve as an umbrella for alliance amongst organizations and individuals with common interests in awareness, education, and research for oral, head and neck cancer. The Yul Brynner Head and Neck Cancer Foundation underwent a major restructuring process, including a name change to The Head and Neck Cancer Alliance. The Yul Brynner Foundation will be the inaugural group under the umbrella of the Head & Neck Cancer Alliance (HNCA). One measure of success will be the number of groups joining the HNCA. The goal is a 200% annual increase in the number of groups included under the umbrella, until a majority of head and neck cancer groups unite under The Head and Neck Cancer Alliance.

**Results:** First quarter preliminary results will be available in April, 2009.

**Conclusions:** An increase in the number of institutions and partners of The Head and Neck Cancer Alliance is a first step to increase awareness of oral, head and neck cancer. Future efforts will target political and research avenues to increase funding and support of research and legislation to assist in prevention, early detection, and treatment of oral, head and neck cancer.

**Funding:** Head and Neck Cancer Alliance

## ASSESSING INFRASTRUCTURE AND BUILDING CAPACITY THROUGH COLLABORATIONS FOR DENTAL PUBLIC HEALTH PROGRAMS

**Abstract #: 72**

### SEQUENCING OF CORE ORAL HEALTH INFRASTRUCTURE COMPONENTS: "WHAT COMES FIRST, THE CHICKEN OR THE EGG?"

**Author(s):** Carrie M. White, MPH, ORISE Fellow, Centers for Disease Control and Prevention, Rene Lavinghouze, MA, Centers for Disease Control and Prevention.

**Objectives:** To understand how sequencing of the CDC cooperative agreement (CA3022) performance measures, over a five year period, impacted the time it took to develop oral health infrastructure at the state level. To highlight promising practices for the sequencing of essential components for effective public health infrastructure that will help to improve oral health.

**Methods:** Data was abstracted and analyzed from reports submitted by funded states during the oral health cooperative agreement (2003-2008). Spreadsheets were developed to analyze variations in the time it took to accomplish select performance measures such as: leadership, coalitions/partnerships and state oral health plans. Each performance measure was compared by state to identify key trends in infrastructure development.

**Results:** All funded states achieved the required performance measures at the close of the cooperative agreement. However, certain sequencing led to accomplishments that extended beyond the basic CA3022 performance measures. States that were able to leverage partnerships/coalitions outside of the health department were more efficiently able to coordinate and implement a broader range of activities. Also, certain leadership qualities led to more sustainable achievements.

**Conclusions:** While all the performance measures in CA3022 are essential to core infrastructure, there are key components that impact the range of achievements a program can attain. The key components considered here are sustainable leadership and engagement of coalition/partnerships at the early stages of infrastructure development.

**Funding:** Centers for Disease Control and Prevention

**Abstract #: 73**

### DEVELOPING ORAL HEALTH AWARENESS AND NETWORKS TO DECREASE DISPARITY IN THE COMMUNITY

**Author(s):** Mona Van Kanegan, DDS, MS, Heartland Health Outreach, Anne Clancy, RDH, MBA, Chicago Community Oral Health Forum

**Objectives:** Engage diverse Chicago communities while developing a network of oral health advocates; promoting communication and concerted action among organizations dedicated to eliminating oral health disparities. To collect oral health data within the 77 unique neighborhoods of Chicago, assess oral health infrastructure of Chicago and conduct gap analysis.

**Methods:** The Chicago Community Oral Health Forum (CCOHF) holds quarterly meetings with work groups for clinicians, policy, community and special populations. The Forum is guiding three diverse communities through the ASTDD 7-Step model for Oral Health Needs Assessment. A survey developed by the Illinois Primary Healthcare Association will assess the infrastructure and oral health care service gaps. Data will be analyzed and mapped to help plan for and strategically expand service sites.

**Results:** The Forum consists of 50 diverse participants representing 40 organizations including the Illinois and Chicago Department of Public Health, Illinois Primary Health Care Association and the IFLOSS Coalition. Six months into the project, we are conducting Basic Screening Surveys of 3rd graders, collecting the dental clinic surveys and in the midst of three community oral health needs assessments.

**Conclusions:** A Forum to improve oral health access in communities is an effective way to share information, assess region-wide needs, and use networks to decrease health disparity. The Forum is the developing leader for oral health action in Chicago.

**Funding:** Otho S. A. Sprague Institute

**Abstract #: 74**

### EVALUATING ORAL HEALTH PROGRAMS IN ILLINOIS' LOCAL HEALTH DEPARTMENTS

**Author(s):** Susan McKernan, DMD, University of Iowa, Julie Janssen, RDH, MA, Illinois Department of Public Health, Sangeeta Wadhawan BDS, MPH, IFLOSS Coalition

**Objectives:** To conduct a survey of Illinois' local health departments (LHDs) to determine what these communities want and need in order to build new oral health programs, expand existing programs, and conduct activities to improve oral health as outlined in the Illinois Oral Health Plan II.

**Methods:** Each of the 95 LHDs in Illinois was sent a survey designed to assess their oral health program capacity and identify areas for expansion. Major topics addressed by the survey included the type and extent of clinical services offered, oral health personnel employed, community partnerships, and interest in expanding oral health activities.

**Results:** Of the 95 surveys sent to LHDs, 87 were returned. Of the respondents, 48% reported having an oral

health program. Of the LHDs without an oral health program, 24 indicated interest in expanding to include this. Funding and assistance with infrastructure development were two major categories of support identified as being necessary for this expansion.

**Conclusions:** The findings from this survey will be used to develop and implement a statewide local health department infrastructure development plan. Clinical services are only a small component of oral health; communities can improve their oral health with a variety of other activities, including oral health education, oral health coalitions, and community partnerships.

**Funding:** Illinois Dept of Public Health

**Abstract #: 75**

**DEFINING THE RELATIONSHIPS BETWEEN DENTAL AND DENTAL HYGIENE SCHOOLS AND STATE AND LOCAL HEALTH DEPARTMENTS IN ILLINOIS**

**Author(s):** Sherri M. Lukes, RDH, MS, Southern Illinois University, Kathleen K. Thacker, RDH, MPH, Illinois Department of Public Health, Julie Janssen, RDH, MA, Illinois Department of Public Health, Sangeeta Wadhawan, BDS, MPH, IFLOSS-Coalition

**Objectives:** To discover the working relationships between dental and dental hygiene schools and State and local health departments; specifically, are dental and dental hygiene schools collaborating with State and local health departments in their communities?

**Methods:** Surveys were sent electronically to all administrators of each dental and dental hygiene school in Illinois. The survey consisted of twenty questions covering different aspects of relationships between the schools and health departments.

**Results:** The responses from the survey indicate that the administrators believe that local health departments have positive attitudes towards oral health and rely on the schools to meet community oral health needs. Other results indicate that collaboration between schools and local health departments is limited; there appears to be a more interaction with the State; lack of oral health staff to facilitate partnerships appears to be a significant obstacle; and the statewide oral health coalition - IFLOSS needs to be stronger.

**Conclusions:** Relationships between dental and dental hygiene schools and local health departments are not as strong as they could be. The collaboration and relationships between the two sets of organizations can be strengthened by involving liaisons and coordinators to develop projects with common goals to improve the oral health of Illinois citizens.

**Funding:** None

**Abstract #: 76**

**ORAL HEALTH NEEDS ASSESSMENT - ILLINOIS STATEWIDE ORAL HEALTH NETWORK**

**Author(s):** Sharon R. Clough, RDH, MS Ed, Illinois Primary Health Care Association, Julie Janssen, RDH, MA, CDHC, Illinois Department of Public Health

**Objectives:** To plan, implement and analyze an oral health needs assessment of FQHCs and safety net clinics with the purpose of identifying oral health needs and barriers for the development of an action plan for the newly developed statewide oral health network.

**Methods:** The Illinois Primary Health Care Association has developed an Oral Health Network (OHN) to increase communication amongst FQHCs and oral health safety-net providers and to provide technical assistance to the FQHCs and safety net clinics. A survey was developed and distributed to 109 FQHCs and safety net clinics in Illinois. Results will provide the OHN direction in expanding oral health capacity for the underserved.

**Results:** 109 surveys were distributed; 65 clinics responded. Results indicated funding as a key barrier to oral health care expansion. Additionally, survey data indicated the following needs/barriers: recruitment of dentists and dental assistants, funding to assure provision of comprehensive dental treatment and the availability of staff training, especially for the care of patients with special needs.

**Conclusions:** Survey data indicates the following directives for the OHN action plan: secure state support, advocate for additional funding, provide staff training, address recruitment needs and create a common agenda to gain buy-in from diverse stakeholders.

**Funding:** Illinois Dept of Public Health

**Abstract #: 77**

**ASSOCIATION OF STATE ORAL HEALTH POLICIES WITH SCHOOL DISTRICT POLICIES AND SCHOOL HEALTH SERVICES**

**Author(s):** Tammy Corley PhD, Northrop Grumman; Julia Wacloff MS, CDC Division of Oral Health; Laurie Barker MSPH, CDC Division of Oral Health

**Objectives:** To assess whether adoption of state policies on oral health services provided in schools is associated with adoption of policies at the school district level and provision of services at the school level.

**Methods:** Using data from the 2006 School Health Policies and Programs Study (SHPPS), responses were examined from nationally representative samples of schools (n=1029) and school districts (n=449) to assess whether adoption of state policies on oral health services provided to students were associated with adoption of corresponding district policies or provision of these services by schools. Oral health services considered were: screening for oral health problems, identification of or referral for oral health problems when needed, administration of fluoride rinses when needed, and application of dental sealants when needed. Analyses were conducted in SPSS 14.0 and adjusted for the complex sample design.

**Results:** Adoption of a related state policy was associated with adoption of school district policies on screening (OR=2.89, 95%CI=[1.47, 5.70]) and school provision of screening (OR=2.05,95%CI=[1.17, 3.60]). Too few states (2%) reported

adoption of policies related to sealants to assess the relationship with district policies or school services.

**Conclusions:** Compared to districts and schools in states without policies on oral health screening, districts in states with such policies were more likely to have adopted corresponding policies and schools in these states were more likely to provide student screening.

**Funding:** SHPPS is conducted by CDC's Div of Adolescent and School Health. Analysis was supported by the Dental, Oral and Craniofacial Data Resource Center, a joint project of CDC's Div of Oral Health and NIH's National Institute of Dental and Craniofacial Research.

#### Abstract #: 78

### SCHOOL BASED HEALTH CENTERS: THE DELIVERY OF ORAL HEALTH SERVICES

**Author(s):** Julia Wacloff, RDH, MPH, CDC Division of Oral Health, Tammy Corley, PhD, Northrop Grumman, Laurie Barker, MSPH, CDC Division of Oral Health, Linda Juszczak DNSc, MPH, CPNP, National Assembly on School-Based Health Care

**Objectives:** To describe dental services offered in school-based health centers (SBHCs) in the United States.

**Methods:** The 2004-2005 School-Based Health Care Census was examined for the provision of dental services in school-based, school-linked, and mobile health centers. A total of 1235 (72%) centers serving children in grades K-12 participated.

**Results:** Approximately 40% of SBHCs provided dental services onsite: 38% provided dental screenings/diagnostics; 20% provided preventive care (sealants, fluoride, cleaning); 8% provided comprehensive care (fillings, extractions). The majority of SBHCs (68%) provided dental referrals for comprehensive care. SBHCs serving elementary students were more likely to offer dental screenings (46%) and preventive dental care (32%) than those serving middle (36%, 19%), high (28%, 13%) and combination (43%, 20%) grade schools. Oral health education for small groups and classrooms was offered at 42% of SBHCs; school-wide promotional activities were offered at 17% of SBHCs. Eight percent of SBHCs had a dentist onsite working an average of 12.6 hours per week.

**Conclusions:** The SBHC Census is a valuable resource for tracking the availability of preventive, comprehensive, and educational dental services offered through SBHCs. These data will help to document trends in the delivery of dental services through SBHCs and inform oral health program planning and policies for underserved populations.

**Funding:** Analysis was supported by the Dental, Oral and Craniofacial Data Resource Center, funded by CDC's Div of Oral Health and NIDCR. The National Assembly on School-Based Health Care sponsored survey was funded by HRSA's MCH Bur., Bur. of Primary Care, and McKesson Fndtn.

#### Abstract #: 80

### MOBILE DENTAL UNITS: LEASE FINANCING OR DEBT FINANCING?

**Author(s):** Oscar Arevalo, DDS, ScD, MBA, MS; Daniel Saman, MPH; Alice Bonaimé, PhD; Judy Skelton, RDH, PhD.

**Objectives:** The decision to acquire a mobile dental unit is based on a standard capital budgeting analysis. The next step is to determine whether to obtain the use of the mobile dental unit by borrowing and purchasing or by leasing. Financial leases are used extensively in the health care industry. As a financing mechanism, leases are just another way of borrowing money to pay for the asset. Lease payments are fixed obligations equivalent to debt service. The authors compared leasing financing vs. debt financing as vehicles to acquire a mobile dental unit.

**Methods:** An estimate for a new mobile unit was obtained and lease and loan proposals from financial lenders were collected. A financing rate was chosen for comparison. Cash flows associated with borrowing and buying vs. leasing were determined for two different scenarios: for profit vs. not-for-profit at 5 and 7 years. A dollar-cost analysis was utilized to determine which option had the lower capitalized value.

**Results:** A new mobile unit fully equipped was quoted at \$ 450,000. Cash flow analysis yielded a positive capital value. There was a net advantage to leasing in both for profit and not-for-profit scenarios and both time periods.

**Conclusions:** Exploring alternative financing vehicles may allow dental programs to expand their services through the acquisition of a mobile unit. Programs generally own assets, but it is the use of the asset which is important rather than the ownership. Dental programs can find leasing an attractive alternative by providing access to capital with cash-flow advantages.

**Funding:** None

#### Abstract #: 81

### EXTENDED CARE PERMIT (ECP) DENTAL HYGIENIST PRACTICE IN KANSAS

**Author(s):** Kim S. Kimminau, Ph.D., University of Kansas Medical Center, Anthony Wellever, MA, University of Kansas Medical Center, Arshia Ahmed, MHA, University of Kansas Medical Center, and Katherine Weno, DDS, JD, Kansas Department of Health and Environment.

**Objectives:** To discover reasons why dental hygienists obtain ECP status, to profile their practices, and to assess barriers to providing ECP services.

**Methods:** A telephone survey of the population (N=82) of ECP dental hygienists was conducted and analyzed using standard statistical techniques. The response rate was over 90 percent.

**Results:** The majority of those obtaining extended care permits acquired them in the first two years they were authorized by law and did so primarily for the purpose of job enrichment. Most ECPs are employed, but those who discontinued a relationship with an employing organization or practice, have had difficulty locating another sponsoring dentist. Most ECPs believe the program helps provide oral health

services to underserved patients but vary in their satisfaction with their own ECP practice.

**Conclusions:** Challenges to ECP practice persist, but the extended care permit program which allows services to be provided in public health settings outside of dental offices is successful in reaching some targeted underserved groups.

**Funding:** Health Resource and Service Admin, U.S Dept of Health and Human Services

**Abstract #: 82**

**NORTHERN KENTUCKY HEALTH DEPARTMENT: RAISING THE BAR ON ORAL HEALTH IN KENTUCKY**

**Author(s):** Carrie L. Gould, R.D.H., M.Ed., Northern Kentucky Health Department, Julie W. McKee, D.M.D., B.S., Kentucky Department of Public Health, Steven R. Katkowsky, M.D., Northern Kentucky Health Department

**Objectives:** Provide public health dental colleagues with information on how Northern Kentucky Health Department (NKHD) worked with Kentucky Board of Dentistry to expand scope of practice for Public Health Dental Hygienists employed by a Health Department.

**Methods:** In 2002, Kentucky Board of Nursing agreed that scope of public health nursing practice included dental screenings and application of fluoride varnish. In 2003, KIDS Smile fluoride varnish training/certification was provided to Public Health Nurses and NKHD began applying varnish in clinics. In addition, a law was passed in Kentucky allowing Registered Dental Hygienists to practice General Supervision under a dentist. NKHD implemented a Dental Sealant Program by hiring a dental team which included area Dentists who screen and write orders for sealant application. Both programs have become a success but barriers to providing preventive dental services from Public Health Dental Hygienists still remains. NKHD through recommendations from Kentucky Dental Director requested time on Kentucky Board of Dentistry agenda to discuss scope of practice for Public Health Dental Hygienists employed by a Health Department.

**Results:** November, 2008, NKHD went before Kentucky Board of Dentistry and requested Registered Dental Hygienists employed by a Health Department be able to apply fluoride varnish in schools without a dentist present and the Board overwhelmingly approved the request.

**Conclusions:** Northern Kentucky Health Department received approval to implement a fluoride varnish program by a Public Health Dental Hygienist without the presence of a dentist.

**Funding:** None

**Abstract #: 83**

**DISTRIBUTION OF AAPHD MEMBERS VOLUNTEERING TO TEACH DENTAL PUBLIC HEALTH**

**Author(s):** Mohamed Bamashmous, BDS, Ana Karina Mascarenhas, BDS, MPH, DrPH, Division of Dental Public Health, Department of Health Policies and Health Services Research, Boston University Goldman School of Dental Medicine, Boston, MA, USA

**Objectives:** To develop a Speakers Bureau using AAPHD members to teach dental public health at dental and dental hygiene schools.

**Methods:** The AAPHD membership survey in 2007 included questions on willingness to volunteer to lecture or speak on DPH topics, topics willing to teach, and needs such as honorarium, travel, and accommodation. The geographic location of the respondents that volunteered to teach was mapped together with the 57 dental schools and 301 dental hygiene schools. Maps were created using Epi-Map component of Epi-Info.

**Results:** 78 AAPHD members volunteered for the Speakers Bureau, however only 58 provided information, but only 50 could be mapped. Majority volunteered to teach prevention. In some states there were few AAPHD volunteers, with at least 20 states having no volunteers, although some of them had dental and dental hygiene schools.

**Conclusions:** There is need to further increase the number of AAPHD members volunteering for the Speakers Bureau, particularly in states that currently do not have any volunteers.

**Funding:** None

**ORAL EPIDEMIOLOGY AND POPULATION SURVEYS**

**Abstract #: 84**

**TRENDS IN TOOTH LOSS AMONG ELDERLY IN NEW YORK STATE**

**Author(s):** Chitvan Sharma, BDS, MPH, Bureau of Dental Health, New York State Department of Health, Jayanth V. Kumar, DDS, MPH, Bureau of Dental Health, New York State Department of Health, Mark E. Moss, DDS, PhD, Bureau of Dental Health, New York State Department of Health.

**Objectives:** Tooth loss is an important indicator of the oral health status of a community. A Healthy People 2010 objective is to reduce the proportion of older adults who have lost all their teeth to less than 20%. We determined the prevalence of tooth loss among the elderly in New York State to assess the progress towards these objectives.

**Methods:** We compared the Behavioral Risk Factor Surveillance System (BRFSS) data on self reported tooth loss from 513 adults in 1997 and 1241 adults in 2006 aged 65 years or older in New York State. The BRFSS is a state-based telephone survey of the civilian non-institutionalized U.S population aged greater than 18 years. The prevalence of tooth loss by various subgroups was calculated using SAS and SUDAAN software.

**Results:** The prevalence of complete tooth loss decreased from 28.4% (95% CI 24.1, 32.7) in 1997 to 21.1% (95% CI, 18.5, 23.8) in 2006. The prevalence varied from a low of 7.1% (SE 2.1) among the higher income category (> \$50,000) to a high of 41.2% (SE 4.4) among the lower income category (< \$15,000). The chi-square test for trend yielded a p value of < 0.001 across the 5 income categories.

**Conclusions:** This analysis showed that the prevalence of tooth loss has declined in New York State. While New York is close to accomplishing the Health People 2010 Objective with respect to tooth loss in the elderly, disparities in tooth loss still exist.

**Funding:** None

**Abstract #: 85**

### **PREDICTORS OF TOOTH LOSS IN LOW-INCOME AFRICAN AMERICAN ADULTS**

**Author(s):** Woosung Sohn, DDS, PhD, DrPH, University of Michigan School of Dentistry, Sungwoo Lim, MA, MS, NYC Department of Health and Mental Hygiene, Amid I. Ismail, BDS, MPH, MBA, DrPH, Temple University Kornberg School of Dentistry

**Objectives:** To identify predictors of tooth loss among an adult population of low socio-economic status.

**Methods:** This study used longitudinal data collected in 2002-2003 (Wave 1) and 2007 (Wave 3) from 614 adult caregivers (mean age = 29) of African-American (AA) children (<6yrs) from a multistage probability sample of AA families living in the poorest 39 Census Tracts in Detroit. Incident cases of tooth loss over 4-year period, either due to caries or other reasons were recorded through dental examination. Baseline information regarding socio-demographic factors, access to dental care, and self-perception of oral health status was collected through face-to-face interview. To account for the clustering of multiple tooth loss within an individual, the odds ratios of having new tooth loss were estimated by using Generalized Estimating Equations (GEE) estimation.

**Results:** Overall 48% of adults have lost at least one tooth over 4-year period. There were a total of 774 new tooth loss (mean = 2.6). Fifty eight percent of lost teeth were carious (cavitated) at baseline; 70% were molars (3rd molars being 35%). Existing cavitated lesions, poor self oral health perception, and previous smoking were significant predictors of new tooth loss after accounting for confounding in a GEE model. Baseline preventive dental visits was a significant protective factor.

**Conclusions:** A high proportion of low-income African American adults in Detroit have lost their teeth due to caries and smoking. Those with preventive dental visits were less likely to loose their teeth. Needs for prevention and early intervention are high in this population.

**Funding:** This study was supported with funding from the National Institute on Dental and Craniofacial Research (NIDCR) grant # U-54 DE 14261-01, Delta Dental Fund of Michigan, and Univ of Michigan's Office of Vice President for Research.

**Abstract #: 86**

### **OBESITY AND ETHNICITY AS RISK INDICATORS FOR PERIODONTAL DISEASE: ANALYSIS OF A NATIONAL DATASET**

**Author(s):** Suman Challa, BDS, MSPH, UTHSCSA Department of Community Dentistry, Michael Sanchez, UTHSCSA, Dr. Jamil David BDS, MSc, Ph.D., Centre for International Health, UiB Bergen, Norway

**Objectives:** To study the relationship of obesity and ethnicity as risk indicators for periodontal disease.

**Methods:** Data used in this study was a subset from the National Health and Nutrition Examination Survey (NHANES 1999-2000, NHANES 2001-2002, NHANES 2003-2004). 11,620 (N) patients were identified for analysis. Periodontal disease was defined as  $\geq$  at least one site with both a probing depth of  $\geq$  4mm and a clinical attachment loss of  $\geq$  3mm $\pm$ . Subjects were classified based on body mass index (BMI) into 4 groups: underweight (BMI  $\leq$  18.5 kg/m<sup>2</sup>), normal (BMI 18.5 to 24.9 kg/m<sup>2</sup>), overweight (BMI 25 to 29.9 kg/m<sup>2</sup>), and obese (BMI  $\geq$  30 kg/m<sup>2</sup>). Unadjusted odds ratios were obtained for BMI, BMI stratified by ethnicity (Mexican-American, Other Hispanic, Non-Hispanic White, Non-Hispanic Black, and Other race), Multivariate logistic regression was performed adjusting for covariates including ethnicity, gender, education level (less than high school, high school diploma, or more than high school education), age, smoking status, diabetes, and time to last dental visit.

**Results:** Periodontal disease was higher among Non-Hispanic Blacks and other ethnic groups when compared to Non-Hispanic Whites. Non-Hispanic Black males and females who were overweight and obese had significantly higher odds of having periodontal disease in comparison to Non-Hispanic Whites. Ethnic minorities of overweight, obese and with larger waist circumference were more prone to periodontal conditions than the Non-Hispanic Whites.

**Conclusions:** Community programs and interventions should give significance to environment as a risk indicator to bring about change in health status especially in ethnic minorities.

**Funding:** None

**Abstract #: 87**

### **DENTAL CARIES AMONG CHILDREN ENROLLED IN EARLY INTERVENTION AND SPECIAL EDUCATION PROGRAMS: NHANES 1999-2002**

**Author(s):** Jane A. Weintraub, DDS, MPH, University of California, San Francisco (UCSF); Paul Glassman, DDS, MA, MBA, University of the Pacific, Arthur A. Dugoni School of Dentistry; Paul W. Newacheck, DrPH, UCSF; Umo Isong, BDS, MPH, PhD, UCSF; Gloria C. Mejia, DDS, MPH, PhD, Sally H. Adams, RN, PhD

**Objectives:** To determine the dental caries status of children who use Special Education and Early Intervention Services (SEEIS) in the United States.

**Methods:** We utilized 1999-2002 National Health and Nutrition Examination Survey data (NHANES), an ongoing nationally representative survey of the non-institutionalized U.S. population. Analyses included 6096 children ages 2-15 who completed a dental examination and provided information on whether they had received SEEIS. We examined caries prevalence as the percentage of children with any decayed or filled surfaces (dfs; DFS); untreated caries (ds; DS); and filled surfaces (fs; FS).

**Results:** Rate of SEEIS use was 9.1% (SE 0.6). SEEIS use varied by race/ethnicity ( $p < 0.01$ ) and was associated with

older age ( $p < 0.01$ ), male gender ( $p < 0.01$ ), and lower federal poverty level (FPL;  $p < 0.01$ ). Dental caries experience (dfs; DFS) was more prevalent in SEEIS (55.1%, 40.5%, respectively) than non-SEEIS children (39.6%, 29.6%,  $p < 0.01$ ). Prevalence of decayed surfaces (ds; DS) was greater in SEEIS (27.4%, 14.9%) than non-SEEIS children (20.5%, 9.7%,  $p < 0.05$ ). Filled surfaces prevalence (fs, FS) was greater in SEEIS (34.2%, 29.8%) than in non-SEEIS children (26.5%, 24.1%), however only FS was significant,  $p < 0.05$ . When we controlled for gender, age, race/ethnicity, and FPL, DFS remained significant ( $p < 0.05$ ).

**Conclusions:** Children who participate in SEEIS experience worse oral health than other children, and this relationship is partially explained by demographic and economic factors. Caries prevention programs should include a focus on SEEIS participation as a potential risk factor for oral health problems.

**Funding:** None

#### Abstract #: 88

### ORAL HEALTH OF CHILDREN WITH SPECIAL HEALTH CARE NEEDS

**Author(s):** Hiroko Iida, DDS, MPH. Department of Epidemiology, University of Washington. Charlotte W. Lewis, MD, MPH. Department of Pediatrics, University of Washington

**Objectives:** Despite reports of difficult access to needed dental care among children with special health care needs (CSHCN), representative dental examinations data among CSHCN is scarce. The aim of this study was to use a national database, the 1999-2004 National Health and Nutrition Examination Survey (NHANES), to compare dental outcomes and test the hypothesis that CSHCN were more likely to have worse dental outcomes relative to children without SHCN.

**Methods:** From NHANES, we identified these CSHCN proxies: 1) impaired physical activity or 2) special education or early intervention services receipt; children with either were defined as CSHCN. Outcomes of interest were mean number of decayed and filled primary tooth surfaces (dfs) and the presence of untreated caries. Descriptive comparisons were made and a multivariable model was constructed to include age, gender, race/ethnicity, poverty, and health insurance covariates. The complex sampling design was accounted for in the analysis.

**Results:** 3897 children 2-11 years of age were examined, representing 27 million children nationally. Of these, 11% were CSHCN. Compared to children without SHCN, CSHCN had greater dfs counts (4.1 vs. 3.4,  $p < .001$ ). However, after controlling for potential confounders, there was not a significant difference in dfs. There was no difference between children with and without SHCN in untreated caries presence (21.9 vs. 21.4%,  $p = 0.91$ ) on descriptive or multivariable analyses.

**Conclusions:** We were unable to reject our null hypothesis using the variables and population represented in NHANES. Additional effort is needed to identify CSHCN at risk for dental health problems, if indeed they exist.

**Funding:** T32 HD052462 from the National Institute of Child Health and Human Development (NICHD), NIH

#### Abstract #: 89

### ORAL HEALTH DISPARITIES IN RURAL NORTHERN APPALACHIAN FAMILIES: CHILDREN'S CARIES FINDINGS

**Author(s):** Deborah E. Polk, PhD, University of Pittsburgh, School of Dental Medicine, Richard J. Crout, DMD, PhD, West Virginia University School of Dentistry, Daniel McNeil, PhD, West Virginia University, Robert J. Weyant, DMD, PhD, University of Pittsburgh, School of Dental Medicine, Ralph E. Tarter, PhD, University of Pittsburgh School of Pharmacy, John G. Thomas, PhD, West Virginia University School of Medicine, Mary Marazita, PhD, University of Pittsburgh School of Dental Medicine

**Objectives:** Appalachia exhibits some of the worst oral health in the country. Previous work, ascertained by the Center for Oral Health Research in Appalachia (COHRA), revealed that out of 765 adults, over 80% exhibited evidence of periodontitis. Little research, however, has examined the caries findings of children in this Northern Appalachian population. The purpose of this study is to characterize the caries findings among children in Northern Appalachia and compare it to similar evaluations among children in the nation as a whole.

**Methods:** Data were drawn from published results from the third National Health and Nutrition Examination Survey (NHANES III), and from the COHRA etiology study, obtained from 2002 – 2008. Assessment included dental caries experience, untreated decay, and dental sealants use. The COHRA data were obtained from four communities in two states in Northern Appalachia (West Virginia and Pennsylvania) and included the primary dentition in children age 2 – 10 ( $N = 800$ ) and the permanent dentition in children age 6 – 18 ( $N = 814$ ).

**Results:** For caries experience and untreated decay in both primary and permanent dentition, the COHRA children had greater levels of decay than did children living in the nation as a whole. With respect to sealants however, in NHANES, 1.4% of children age 2 - 11 and 18.5% of children 5 - 17 had sealants compared to 1.8% and 44.8% respectively in the same COHRA age groups.

**Conclusions:** Our findings reveal that this Northern Appalachian children's group exhibited greater dental caries experience and more dental decay despite a greater use of sealants. Further research is necessary to determine the correlation of the caries findings with other individual and family variables. Interventions can then be developed and implemented aimed at improving the oral health of this population.

**Funding:** NIH/NIDCR RO1-DE014889

#### Abstract #: 90

### AMERICAN INDIAN/ALASKA NATIVE CHILDREN'S DENTAL UTILIZATION: 2003 NATIONAL SURVEY OF CHILDREN'S HEALTH

**Author(s):** Junhie Oh, DDS, MPH, Tuba City Regional Health Care Corp, Kathy Phipps, DrPH, Tuba City Regional Health Care Corp, L.D. Robertson, MD, MPH, Pediatrics and Health Research.

**Objectives:** Document the current rate of dental utilization among America Indian/Alaskan Native (AI/AN) children, and understand determinants of the disparity in dental utilization between AI/AN and non-Hispanic white (NHW) children.

**Methods:** Data source was the 2003 National Survey of Children's Health. Since AI/AN race information was only released for 7 states where AI/AN children make up > 5% of the state's child population, analyses were limited to 1-17 year olds from those states. Bivariate and multiple logistic regression analyses were used to identify socio-demographic factors and other covariables associated with dental visit and receipt of preventive dental care in last year. SAS survey procedures were used to account for the complex survey design.

**Results:** Data was available for 8,399 NHW and 962 AI/AN children. Compared to NHW children, significantly fewer AI/AN children had a dental visit (72.5% vs. 77.7%,  $p=0.011$ ) or received preventive dental care (61.3% vs. 73.6%,  $p<0.001$ ) in last year. After adjusting for age, parental education and employment, perceived dental condition, dental insurance, and having a doctor, there was no difference in utilization rates between NHW and AI/AN children. In multiple variable analyses, the following factors were associated with lower rates of dental utilization; age 1-5 years, parental high school or less than high school education, Medicaid/SCHIP or no insurance, and not having a doctor.

**Conclusions:** Low dental care utilization rates in AI/AN children are associated with poverty and lower education levels. Because of low socio-demographic status along with limited availability of dental providers in AI/AN communities, a coordinated effort to ensure a dental home for AI/AN children is needed.

**Funding:** None

#### Abstract #: 91

### ORAL HEALTH DISPARITIES BETWEEN HISPANIC CHILDREN IN AGRICULTURAL WORKER FAMILIES COMPARED TO US CHILDREN LIVING IN POVERTY

**Author(s):** Gloria C. Mejia, DDS, MPH, PhD, University of California-San Francisco, Sara Shain, DrPH, University of California-San Francisco, Marguerite Laccabue, MPH, DDS, Dental Consultant, Fresno, CA, Sally Adams, RN, PhD, University of California-San Francisco, Jane A. Weintraub, DDS, MPH, University of California-San Francisco.

**Objectives:** To compare caries experience between children in agricultural worker families and national data.

**Methods:** This project was part of a UC Davis population-based study of randomly selected households in a rural, California community to study agricultural workers' health. In 2006-07, Mendota households with children < 18 living at home participated in the UCSF-led dental component which included home-based parent interviews and field-based dental examinations by a dentist who was also an NHANES examiner. Mendota results were compared with NHANES 1999-04 data by age group, federal poverty level (FPL) and race/ethnicity to assess oral health disparities.

**Results:** The 421 Mendota children from 191 households with interview and examination data were 95% Hispanic, 53% female, 76% US-born. Less than 20% of families had an annual income above US\$20,000. For 2-5 year olds, the mean dfs (95%CI) and fs were 5.8 (3.6-7.9) and 4.9 (2.7-7.0) in Mendota compared to 4.4 (3.3-5.6) and 2.3 (1.6-3.1) for Mexican-American children below the FPL nationally, and 4.9 (3.7-6.1) and 2.7(1.9-3.6) for all US children below FPL. Similar patterns were found for primary teeth in 6-11 year olds and for permanent teeth in 6-11 and 12-17 year olds.

**Conclusions:** The dental caries experience of Mendota children in agricultural worker families is greater than Mexican-American and US children in poor families nationally. In particular, the prevalence of filled surfaces is about 2 times higher in Mendota. This may reflect different caries experience and/or different treatment philosophies.

**Funding:** USDHHS/NIH/NIDCR U54 DE14251, NIOSH 2U500H007550-06, California Endowment.

#### Abstract #: 92

### ADDRESSING UNMET ORAL HEALTH NEEDS IN KANSAS SCHOOL CHILDREN K-12

**Author(s):** Caron Shipley, RDH, BSDH, School Screening Coordinator, Kansas Office of Oral Health

**Objectives:** To identify regional unmet oral health needs by establishing a statewide school screening program to collect standardized data on Kansas children's oral health.

**Methods:** The Kansas Office of Oral Health (OOH) developed a standardized State screening protocol in compliance with Kansas's oral health screening statute (K.S.A. 72-5201). Prior to this project, the statute had been locally implemented with no uniform data collection. Visits were made to Kansas screening programs prior to project development. An advisory committee developed one standardized screening form.

**Results:** Sixty volunteer dental professionals were trained and calibrated as screeners. An online screening course was developed offering dental professionals two Continuing Education hours, through [www.ks.train.org](http://www.ks.train.org). Collaborative relationships were formed with dental professionals and school districts which enabled over 30,000 students (K-12) to be screened in 38 counties as of December 30, 2008. A web-based electronic database was created to house the data and share it with public. Partnerships were also created with local Head Start and preschool day care centers.

**Conclusions:** This screening initiative provides valuable oral health data on Kansas children. This data will support oral health program development and advocacy efforts to improve access to oral health for Kansas children.

**Funding:** Kansas Health Fndtn, Delta Dental Fndtn

**Abstract #: 93**

**ARE WE REDUCING CHILDREN'S ORAL HEALTH DISPARITIES: FINDINGS FROM THE SOUTH CAROLINA ORAL HEALTH NEEDS ASSESSMENT**

**Author(s):** Amy Brock Martin, DrPH; Bankole Olatosi, PhD; Christine Veschusio, RDH, MA

**Objectives:** To describe the oral health status of South Carolina's children.

**Methods:** The Oral Health Needs Assessment (OHNA) is conducted every 5 years by CDC Cooperative Agreement recipients using the Basic Screening Survey created by ASTDD. South Carolina conducted its OHNA during the 2007-2008 school year. BSS data was linked to Medicaid claims and Free and Reduced Lunch (FRL) participation data for validation.

**Results:** Sealants - No differences detected between children along the following strata: race, age, gender, and FRL participation. Children enrolled in Medicaid were more likely to have sealants. Black children were more likely to have caries than White. Children enrolled in Medicaid were more likely to have caries. FRL participants were more likely to have had caries. Black children were more likely than White to have untreated caries. No differences were detected between children enrolled in Medicaid and other children. FRL participants were more likely to have untreated caries. Black children were more likely to have treatment urgencies than White. No differences detected between children enrolled in Medicaid and other children. FRL participants were more likely to have treatment urgencies.

**Conclusions:** Medicaid children had higher caries rates, but disparities around access to dental care were eliminated. Race-based disparities for sealants have been eliminated. Key policy and program factors may be driving improvements.

**Funding:** Centers for Disease Control and Prevention

**Abstract #: 94**

**ORAL HEALTH OF UNDERPRIVILEGED CHILDREN IN LOS ANGELES COUNTY**

**Author(s):** Hazem Seirawan DDS, MPH, MS; Roseann Mulligan DDS, MS; James Crall DDS, ScD

**Objectives:** The aim of the study is to investigate the baseline oral health of underprivileged children and social determinants of oral health in Los Angeles County.

**Methods:** The study is a campus-community partnership and a joint project between USC and UCLA, funded by community private philanthropic organizations. The target groups are 2-5, 8, and 15 year-old children. The study team developed an instrument to be completed by parents about factors related to their children's oral health, and adapted the ASTDD protocol for conducting clinical examinations. Subjects were selected by random sampling from 45 qualified schools and early childhood programs where the majority of children are minority and poor.

**Results:** The study will recruit 2,250 underprivileged children; and over 600 children/parents have been recruited thus far. Initial results indicate that 73% of all children have active caries (45% have decayed teeth and 28% have white

lesions); 33% have fillings or crowns, 77% need dental care; and 47% of the children 2-5 years old have early childhood caries involving anterior teeth.

**Conclusions:** This is the most comprehensive survey of oral health among underprivileged children of Los Angeles County to date. The project will document oral health profiles of underprivileged LA children for comparisons with state and national data and for the design of culturally appropriate community and county-wide interventions. Subsequent longitudinal assessments of LA children will be used to document the impact of those interventions and to inform county and state policy makers about children's oral health trends.

**Funding:** First 5 LA, Annenberg Fndtn, California Endowment, California Wellness Fndtn

**Abstract #: 95**

**ORAL HEALTH RELATED QUALITY OF LIFE IN LATINO CHILDREN AND THEIR PARENTS**

**Author(s):** I. Pamela Cubas, DDS, University of California San Francisco, Maria Fernanda Orellana, DDS, MSc, PhD, University of California San Francisco

**Objectives:** The Latino population is the fastest growing and the largest minority group in the U.S., comprising 16% of the population younger than 18 years of age. Yet, little is known about oral health-related quality of life perception in Latino children and parents. The objective of this study was to assess the concordance between parental and child's perceptions of the child's oral health status and oral health-related quality of life using the Child Oral Health Impact Profile (COHIP).

**Methods:** Sixty-three Latino Children, between the ages of 8 and 15, and their parents, were recruited from the waiting rooms at the University of San Francisco Orthodontic and Pediatric Dentistry clinic. After obtaining informed consent and assent, the parent and child each completed a survey to obtain demographic and acculturation information, and filled out the COHIP for children or COHIP (parent /caregiver) questionnaire. The COHIP total scores and the COHIP subscales scores (Oral health, Functional well-being, Social / Emotional, School Environment and Self-image) were assessed for concordance with the Spearman and intraclass correlation testing.

**Results:** Modest rates of agreement (39.7%) were found in the overall score. Fifteen children (23.8%) scored more negative than their parents and 23 (36.5%) more positive. In the subscale scores, the oral health questions showed the lowest level of agreement (34.9%) and the self-image scores the highest (55.6%)

**Conclusions:** These results are in agreement with a previous study involving a non-Hispanic population, underscoring the importance of obtaining both the child and parent quality of life perception.

**Funding:** Department of fund OCS- UCSF

**Abstract #: 96**

**EARLY CHILDHOOD CARIES AND QUALITY OF LIFE IN PRESCHOOL CHILDREN**

**Author(s):** Daniel K. Coleman BS, Tufts University School of Dental Medicine, Sharron E. Rich, MPH, Boston University School of Dental Medicine, Wanda G. Wright, DDS, MS, MScD, Tufts University School of Dental Medicine, Boston University School of Dental Medicine

**Objectives:** The purpose of this project was to examine the correlation of parent-reported oral health status to early childhood caries (ECC) and oral health related quality of life.

**Methods:** Parents of 390 preschool aged children completed the 14-item Pediatric Oral Health Quality of Life (POHQOL) questionnaire. Oral screening exams were conducted to assess the presence or absence of ECC. Parents rated their child's oral health (OH1) from excellent to poor. POHQOL scores were calculated from both the frequency and importance of individual items. Analyses examined the relationship between POHQOL scores and child's OH1, OH1 compared to one year ago, ECC status, and parental oral health.

**Results:** The sample included 390 preschool children; 49% male; mean age 3; Ethnicity was 17% Black, 56% Hispanic, 12% White, and 15% Other. 32% of children had ECC, 11% of parents described their child's oral health as fair or poor. Both children whose oral health was reported to be fair or poor and children whose oral health reported to be worse than one year ago had a higher impact score ( $p < 0.05$ ) and more oral health related problems ( $p < 0.01$ ). Children with ECC had more oral health problems and higher impact scores; however, these results were not significant. Parents who reported their own oral health as fair or poor were more likely to report their children's oral health as fair or poor ( $p < 0.001$ ).

**Conclusions:** POHQOL data shows significant correlations between parent reported oral health of preschool age children with oral health problems, ECC, and impact scores.

**Funding:** Supported by NICDR Grant U54 DE14264

**Abstract #: 97**

**IS THE HLD (CALMOD) A VALID OCCLUSAL INDEX TO IDENTIFY TREATMENT NEED AND HANDICAPPING MALOCCLUSION?**

**Author(s):** Maria F. Orellana, DDS, Msc, PhD University of California San Francisco, Mary C Cooke, DDS, MSc, private practice, Sonoma, Ca, Stuart Gansky, PhD, University of California San Francisco, Arthur Miller, PhD, University of California San Francisco

**Objectives:** The purpose of this study was to determine the validity and reliability of the HLD (CalMod) and the ICON in identifying treatment need and handicapping malocclusion by comparing them with a panel of 13 Californian orthodontists.

**Methods:** A set of 153 study casts representing all types of malocclusion were utilized. The casts were scored with the

Handicapping Labio-Lingual Deviations with California Modifications [HLDs (CalMod)] and the ICON (Index of Complexity Outcome and Need) by an ICON-calibrated examiner. Each orthodontist individually evaluated the models and gave each a score on a 12-point scale. The mean score of the panel of the need for treatment was used as the "Gold Standard

**Results:** A high correlation between the ICON and the Gold Standard was observed. However, the Gold Standard threshold for orthodontic treatment was lower than the threshold for ICON. Upon modification of the ICON cut-off point, its sensitivity improved from 58.7% to 80.8% and specificity remained the same at 93.9%. There was a high correlation between HDL (CalMod) and the Gold Standard. However, the cut-off point for HLD (CalMod) did not reflect the Gold Standard cut-off point as determined by the classification and regression tree modeling. The Gold Standard Threshold for handicapping malocclusions was dramatically lower than the threshold set by HLD (CalMod).

**Conclusions:** ICON is a valid measure of orthodontic treatment need. HDL (CalMod) is not a valid measure of treatment need or handicapping malocclusion.

**Funding:** None

**Abstract #: 98**

**ORAL HEALTH STATUS OF SOMALI CHILDREN IN COLUMBUS, OHIO**

**Author(s):** Homa Amini, DDS, MPH, MS, Nationwide Children's Hospital, Beth R. Noel, RDH, Nationwide Children's Hospital

**Objectives:** To describe oral health status of the immigrant Somali children, ages 1-18 who reside in Columbus, Ohio.

**Methods:** A convenient sample of 68 Somali children was recruited from four locations in Columbus, Ohio. A basic oral health screening was conducted. Data analysis was carried out using descriptive statistics, Chi-square Analysis, and Fisher's Exact Tests.

**Results:** The mean age of participants was 9.5+ years old. The results showed that 7% of children reported a history of dental pain at the time of screening; 36% had active dental caries and 57% showed evidence of past caries experience. History of past dental trauma was present in 6% of children and 25% had urgent treatment needs. Visible plaque was observed in 56% of children. There was a significant association between pain and treatment urgency ( $P = 0.014$ ). None of children with history of past dental visits required emergency dental treatment. Of those with history of previous dental visits, 59% had no observable dental needs and required only routine dental care.

**Conclusions:** These findings suggest the need to develop community-based oral health education and treatment programs that target immigrant children and promote preventive-oriented practices including routine dental visits.

**Funding:** Delta Dental Foundation

**Abstract #: 99**

**BARRIERS TO ORAL HEALTH CARE IN CHILDREN OF KOREAN PARENTS**

**Author(s):** Sahar Alrayeres, DDS, MS, University of Illinois at Chicago Department of Pediatric dentistry, Anne Koerber, DDS, PhD, University of Illinois at Chicago College of Dentistry Department of Pediatric dentistry, Joyce Koh, DDS, MS, University of Illinois at Chicago, Indru Punwani, DDS, MSD, University of Illinois at Chicago College of Dentistry Department of Pediatric dentistry, Sharbanoo Fadavi, DDS, MS, University of Illinois at Chicago College of Dentistry Department of Pediatric dentistry, Budi Kusnoto, DDS, MS, University of Illinois at Chicago College of Dentistry Department of Orthodontics

**Objectives:** To identify access barriers to oral health care for Korean children, as identified by parents using a modified version of a previously developed survey instrument.

**Methods:** The survey was distributed in person to Korean-born immigrant parents attending Korean-American community sites including a religious organization. The survey included questions about the participant's demographics, as well as relative and absolute barriers to their child's oral health care. Participants were asked to rank the top three barriers to their children obtaining oral health care. The rankings of the barriers were averaged and compared.

**Results:** 120 surveys were completed by parents. Barriers obtaining highest ranking included lack of dental insurance, difficulty paying large bills, difficulty making appointments, inconvenient office hours, and difficulty getting dental insurance (one sample t test,  $p < 0.05$ ). Recent immigrants were more concerned about the dentist being Korean and speaking Korean, and with cultural differences between the dentist and family.

**Conclusions:** Immigrant Korean parents and their children report barriers to child oral health care in the U.S. system, which are consistent with the barriers reported by other immigrant groups. Funding of child oral health care is reported as problematic, and recent immigrants prefer a dentist of their language and culture.

**Funding:** None

**Abstract #: 100**

**A PROSPECTIVE COHORT STUDY OF DENTAL ANXIETY IN CHILDREN FOLLOWED FROM 5 TO 9 YEARS OF AGE**

**Author(s):** Martin Tickle PhD, Katy Buchanan MSc, Clare Jones BDS. School of Dentistry, University of Manchester, Manchester UK.

**Objectives:** To measure changes in dental anxiety in children over time and to examine the relationship between anxiety, dental care and other factors

**Methods:** A prospective cohort study of children in the Northwest of England followed from 5 to 9 years of age. Participants were clinically examined and their parents completed the same questionnaire to measure dental anxiety at 5 and 9 years.

**Results:** A total of 797 children were followed up. The majority (54.3% N=38) of participants who were anxious at 5

years were no longer anxious at 9 years, but a large proportion of children who were anxious at 5 remained anxious at 9 years of age (45.7% N=32). During the follow up period a larger proportion of children developed anxiety (11.7% N=85) than the proportion of children who were reported as being anxious at baseline (8.8% N=70). At 9 years of age, dental anxiety was significantly associated with females, parental anxiety, a history of extraction and irregular, asymptomatic dental visiting pattern. These factors were also significantly associated with dental anxiety at 5-years-old

**Conclusions:** Dental anxiety was cumulative in the study population over time and its development influenced by multiple variables. Results suggest that adverse conditioning and vicarious learning are both important in the development of this condition.

**Funding:** National Oral health Unit

**Abstract #: 101**

**PARENTS PERCEPTIONS REGARDING ORAL HEALTH CARE AMONG THEIR CHILDREN**

**Author(s):** Carrie L. Gould, RDH, MEd, Northern Kentucky Health Department, Keith A. King, PhD, CHES, University of Cincinnati, Steven R. Katkowsky, MD, Northern Kentucky Health Department

**Objectives:** Examine the perceptions of Northern Kentucky parents oral health behaviors in relation to their child's, where parents retrieve oral health information, and utilization of services based on level of insurance including Medicaid, private insurance and no insurance.

**Methods:** Northern Kentucky Health Department, Dental Sealant Program distributed a two-page survey to parents of 2nd and 6th graders in 35 area schools with 816 returned. The survey consisted of the following information: overall oral health status of parent and child, oral health behaviors of parent and child, level of insurance (i.e. Medicaid, private, none, etc.), barriers to oral health care and where parents retrieve oral health information.

**Results:** Half (53%) of parents surveyed report their children do not floss but overall 53% of parents rate overall condition of child's teeth as healthy. Thirty-nine percent reported child's last dental visit was for a check-up and exam, while 39% of parents say visit was within the last 6 months. Level of insurance consisted of 44% covered by Private Insurance, 32% by Medicaid and 12% had No Insurance for dental care. Approximately 15% of parents report there were times when the child needed dental services in past 12 months but could not obtain due to cost (9%). Three out of four (75%) parents trust dental providers and retrieve most information pertaining to dental health from a dental professional.

**Conclusions:** Cost of dental services and lack of dental insurance remain barriers for children to receive dental health services. Recommendations for further research will be offered.

**Funding:** None

**Abstract #: 102**

**ORAL HEALTH RELATED TO AGE OF UNDERSERVED CHILDREN AT INITIAL EXAM IN PHILADELPHIA, PA**

**Author(s):** Julianna E. Gelinias, RDH, BS, Iain Black, MD

**Objectives:** The purpose of this retrospective data analysis was to validate early intervention as a goal in the Ronald McDonald Care Mobile (RMCM) Dental Program by comparing the rate of decay by age group in children from low-income families living in North Philadelphia, PA. The RMCM offers comprehensive and continuous care to children but accept only new patients younger than 9 years old.

**Methods:** Dental records were analyzed from 2,527 children receiving an initial examination during the first 3 years of program operation (2006 through 2008) by dentists on the Ronald McDonald Care Mobile, Dental Clinic. The number of teeth found with untreated decay was organized by the client's age at the time of exam and the number of decayed teeth expressed as a percentage of the children found to have caries. The ages ranged from 3 to 8 years old and each age group had between 306 and 575 patients.

**Results:** The results indicated that the number of children with active decay increased with each year older the child was at time of initial examination. The number of children who had multiple teeth with decay increased with age, with the percentage of decayed teeth higher at each yearly increase in the age groups.

**Conclusions:** The earlier a child accesses dental care, the more likely the child will have fewer decayed teeth. Early intervention reduces the number of decayed teeth, reduces the need for restoration, reduces the cost for dental treatment, reduces the chance of recurrent decay and increased the chance a child will maintain healthy dentition.

**Funding:** St. Christopher's Foundation for Children

**Student Abstract #: 103**

**SMALL STEPS FOR BIG SMILES: A FLUORIDE VARNISH PILOT PROGRAM**

**Author(s):** Connie E. Beatty, RDH, B.S.

**Objectives:** Based on national oral health objectives to reduce Early Childhood Caries (ECC), as well as evidence-based practices of fluoride varnish applications, the objective of this student project was to develop, implement, and evaluate a community-based fluoride varnish pilot program among a group of low SES preschool children.

**Methods:** A fluoride varnish pilot program was conducted as the result of collaborative efforts between Texas Woman's University's Dental Hygiene Program, Denton Christian Preschool, and the Greater Fort Worth Dental Hygiene Society. A dental exam utilized the dmf index to measure caries prevalence among the population, and a 6 question survey measured participant compliance and behavior.

**Results:** 60 dental exams were conducted and the 76% response rate for consent forms yielded 46 applications of fluoride varnish. Analysis of data as determined by descriptive statistics demonstrated correlations between the participant's age and their response to ( $r = 0.317$ ,  $p = 0.016$ ) and cooperation during ( $r = 0.257$ ,  $p = 0.042$ ) the clinic visit; additionally, Anglo and Hispanic ethnicities, as compared to African-American participants, demonstrated a more positive demeanor during the clinic visit (Cramer  $V = 0.390$ ;  $p = 0.030$ ).

**Conclusions:** This fluoride varnish pilot program was successful in achieving national oral health objectives on a local level while concurrently developing professional networks of relationships within the community.

**Student Abstract #: 104**

**EFFECTIVENESS OF ORALCDx BRUSH BIOPSY COMPARED TO ORAL SURGEONS IN DIAGNOSING DYSPLASTIC LESIONS**

**Author(s):** Vinodh Bhoopathi, BDS, MPH, Division of Dental Public Health, Boston University Goldman School of Dental Medicine, Sadru Kabani, BDS, MS, Oral and Maxillofacial pathology Department, Boston University Goldman School of Dental Medicine, Ana Karina Mascarenhas, BDS, MPH, DrPH, Division of Dental Public Health, Boston University Goldman School of Dental Medicine.

**Objectives:** The aim of this study was to evaluate the OralCDx brush biopsy technique's effectiveness as a diagnostic tool in detecting dysplastic lesions, and compare it with oral surgeons' skills in diagnosing dysplastic lesions.

**Methods:** In this cross sectional study, the pathological reports from the scalpel biopsy results of those consecutive cases (tissue samples) that had previously tested either "positive" or "atypical" for dysplasia by OralCDx brush biopsy were retrieved from Oral and Maxillofacial Pathology Department at Boston University Goldman School of Dental Medicine. Information on age and gender of the patient, the site of the lesion, brush biopsy results, histopathologic diagnosis of scalpel biopsy, and oral surgeons' diagnosis of the lesions were collected. Positive predictive values (PPV) for an

“abnormal”, “atypical”, and a “positive” brush biopsy were determined. Oral surgeon’s ability to diagnose dysplastic lesions was determined by calculating, sensitivity, specificity, PPV and Negative Predictive Value (NPV) using the scalpel biopsy result as “gold standard”. Odds ratio and associated 95% confidence intervals were calculated.

**Results:** Overall PPV of an abnormal brush biopsy was 7.9%. PPV of an “atypical” brush biopsy and a “positive” brush biopsy was 7.4% and 33.3% respectively. The proportion of false positive cases for brush biopsy was as high as 92.1%. PPV, NPV, Sensitivity and Specificity for oral surgeons were 9.6%, 100%, 23.1% and 100.0% respectively.

**Conclusions:** The OralCDx technique over estimates dysplastic lesions and produces too many false positives. Oral surgeons’ ability to diagnose dysplastic lesions was slightly more accurate than the brush biopsy’s effectiveness.

#### Student Abstract #: 105

### DENTAL HYGIENE STUDENT HEALTH ACTION COALITION: PROVISION OF PREVENTATIVE DENTAL CARE FOR UNDERSERVED POPULATIONS

**Author(s):** Latrice Bruce, UNC-CH School of Dentistry, Dental Hygiene Program

**Objectives:** To provide an extension of services provided by Dental SHAC, a database of Orange County dental needs that will potentially increase Medicaid funding to this county, and create a mechanism for volunteer opportunities for dental hygiene students.

**Methods:** Using Orange County Health Department’s dental clinic and, instruments from the UNC School of Dentistry; dental hygiene students provided preventive care and education to patients who ordinarily would only be able to receive emergency or restorative care.

**Results:** Over 30 patients have been provided preventive services. Of the 21 patients surveyed who received dental hygiene treatment, 100% responded positively to the experience. Of the 16 dental hygiene student volunteers surveyed, over 66% indicated they would continue to volunteer in community oral health care programs after graduating.

**Conclusions:** Dental Hygiene SHAC provides not only preventative treatment to low-income populations, it also provides a database for needs assessments that may allow Orange County to request additional funding and increase Medicaid reimbursement rates based on the medical needs of the residents. In addition, Dental Hygiene SHAC provides students an opportunity to enhance their skills and promotes their involvement in volunteer services.

#### Student Abstract #: 106

### THE UTILIZATION OF DENTAL SERVICES BY CHILDREN IN FOSTER CARE IN IOWA

**Author(s):** Paul Colthirst, DDS, MS, University of Iowa; Elizabeth Momany, Phd, Public Policy Center, University of Iowa; Peter Damiano, DDS, Director, Public Policy Center, University of Iowa; John Warren, DDS, MS, Department of Community and Preventive Dentistry, University of Iowa.

**Objectives:** The dental literature provides a plethora of information on utilization of dental services; however, there is insufficient information on the utilization of dental services by children in foster care. The aim of this study is to (a) compare Medicaid dental utilization rates with foster care dental utilization rates (b) identify which living situation is most or least likely to utilize dental services, and (c) identify factors that determine utilization of dental services.

**Methods:** Utilization of dental services was assessed by using Iowa dental Medicaid claims data for children who were in foster care for 12 continuous months during fiscal year 2005. Previously published Iowa dental Medicaid utilization rates for non-foster care children were used for comparison purposes.

**Results:** 2099 children met the criteria for the study of which, 65% (n=1356) utilized diagnostics services, 56% (n=1172) utilized preventive services, 6% (n=135) utilized restorative services and 3% (n=66) utilized complex services. Children living in group care on an average had higher utilization rates. Age, gender, living situation and HPSA were all factors that determined utilization rates for the foster care population

**Conclusions:** The overall utilization of dental services by children in foster care were higher when compared to utilization rates of non-foster care children on Medicaid; however, additional research is needed in this area in order to facilitate greater utilization of dental services for foster care children. Key Words: foster care system, Medicaid, dental care utilization rates, oral health, dental services.

#### Student Abstract #: 107

### COGNITIVE EVALUATION OF THE FAMILY DENTAL HOME INDEX AMONG HISPANICS AND THEIR PERCEPTIONS OF ACCESS TO DENTAL CARE

**Author(s):** Irene Garbero, DDS, MPH, NC Oral Health Section, Division of Public Health; Rebecca King, DDS, MPH NC Oral Health Section, Division of Public Health; R. Gary Rozier, DDS, MPH Gillings School of Global Public Health, University of NC at Chapel Hill

**Objectives:** To test a Spanish language version of the Family Dental Home Index (FDHI) with the goal of producing an instrument that will accurately characterize dental homes among Latinos.

**Methods:** The FDHI in English is a reliable and valid 21-item tool for measuring 6 domains characterizing dental care (accessible, comprehensive, family centered, compassionate, culturally competent, and usual source). A Spanish translation of the FDHI was tested in cognitive interviews (probes for each of the 21 items, think aloud requests and paraphrasing techniques) with a convenience sample of 30 native Spanish speaking adults from different Latin American countries living in 6 NC cities. Testing included three rounds of 10 individual face-to-face cognitive interviews with modifications in the FDHI after each round

**Results:** Three categories of problems were identified with the instrument: a) general problems/ problems following

instructions (question format, missing a skip pattern, obviously incorrect answers, reading level, time frame reference); b) translation problems (incorrect wording, grammatical problems); and c) cultural issues (meaning of terms or concepts, comprehension of question as intended). Geographic and economic barriers, and lack of bilingual dental professionals who can speak Spanish and understand cultural differences and beliefs in the Latino community were reported as important dental home considerations

**Conclusions:** This study identified the types of errors made by Latino respondents when completing the FDHI, how they interpret professionally-developed questions related to dental homes, and their view of access to dental care. Results suggest that a dental home index can be developed for Spanish speaking Latinos.

#### Student Abstract #: 108

### A MOBILE ORAL CANCER SCREENING INITIATIVE IN A HIGH-RISK UNDERSERVED COMMUNITY IN VANCOUVER

**Author(s):** Yen Chen Kevin Ko (B.Sc.; Second Year Dentistry, The University of British Columbia, Vancouver, Canada)

**Objectives:** (1) To explore the feasibility of setting up a mobile screening program for oral cancer/precancerous lesions in the Vancouver Downtown EastSide (DTES) community; (2) to deliver an education program for oral cancer awareness; and (3) to increase an access to a screening program in the community.

**Methods:** Education and screening programs were established for the DTES. The participants' level of awareness and knowledge about: oral cancer, risk factors, and early signs and symptoms, were surveyed. A short PowerPoint® presentation about epidemiology, natural history, early signs and symptoms, prognosis and prevention of oral cancer was given. Subsequently, the participants were screened in an on-site "mobile" clinic.

**Results:** Participants in the education sessions (54 individuals; 71% male), were characterized as: 52 (96%) ever smokers; 19 (35%) had heard of oral cancer; 19 (35%) wanted check up and 25 (46%) indicated a willingness to attend a free cancer screening. Among smokers, 22 (42%) were interested in education about a tobacco cessation program. During the following weeks 13 (24.5 %) attended the screening session. A total of 71 participants (58 additional individuals) were screened. Two suspicious oral lesions and 2 cases of oral candidiasis, that required further investigations, were recognized.

**Conclusions:** A combination of education and screening activities is an useful strategy for health promotion and for capacity building to the underserved but high-risk population.

#### Student Abstract #: 109

### PREDICTORS AND EFFECTIVENESS OF DENTAL REFERRALS BY PRIMARY CARE PHYSICIANS

**Author(s):** Bhavna T. Pahal, BDS, MPH, PhD, The University of North Carolina at Chapel Hill, R. Gary Rozier, DDS, MPH, The University of North Carolina at Chapel Hill, Sally C. Stearns, PhD, The University of North Carolina at Chapel Hill, John S. Preisser, PhD, The University of North Carolina at Chapel Hill, Dennis A. Clements, MD, MPH, PhD, Duke University, Michelle L. Mayer, RN, MPH, PhD, The University of North Carolina at Chapel Hill

**Objectives:** To examine the predictors of dental referrals and the effectiveness of referrals in promoting dental use among children receiving dental assessments in North Carolina's medical office-based preventive dental program (Into the Mouths of Babes, IMB).

**Methods:** NC Medicaid claims for IMB services provided during 2001 and 2002 were linked with physician-completed dental risk assessments (Encounter Forms, EFs). The EFs included information on physician-identified ECC and whether the child was referred to a dentist. We examined predictors of a dental referral using hierarchical logistic regression and time to use of dental care subsequent to an IMB visit using Cox regression.

**Results:** Of 24,403 children in the study, about 5% had ECC, 2.8% received a dental referral and 3.5% visited a dentist before 42 months of age. Among children with ECC, 32% were referred, and more children with a referral visited a dentist (35.6%) than those not referred (12.0%). In the hierarchical model, children with ECC (vs. no ECC) and those seen in rural (vs. urban) practices were more likely to be referred. In the Cox model, those with ECC and a referral visited the dentist earlier than those with no ECC and no referral.

**Conclusions:** Physicians' referrals increased access to dentists for children with ECC, but use for those needing care remained low. Future research should examine system- and process-level strategies to improve physicians' referral practices and outcomes.

#### Student Abstract #: 110

### SELF-REPORTED AND PROFESSIONALLY-DETERMINED ORAL HEALTH STATUS AMONG AGRICULTURAL WORKERS IN RURAL CALIFORNIA

**Author(s):** Preeti Prakash BDS, MS, Stuart A Gansky DrPH, Sara A Shain DrPH, Jane A Weintraub DDS, MPH, University of California San Francisco, School of Dentistry, Center to Address Disparities in Children's Oral Health

**Objectives:** Among adult Hispanic agricultural workers in rural California: 1) To describe the prevalence of self-reported oral health problems and professionally-determined dental caries and tooth loss status and 2) To determine the factors associated with poor self-perception of oral health (SPOH).

**Methods:** Home-based personal interviews and dental exams were conducted with adults in randomly-selected households in rural Mendota, California (Fresno County) as

part of a larger, population-based occupational/environmental health study. A subgroup of households with at least one child under age 18 years living at home was included in the dental study. Generalized estimating equation models accounting for within-family clustering were used to determine factors associated with poor SPOH.

**Results:** Mean age of the 326 adults interviewed for the dental study was 37 years; 69% were women and 72% were born in Mexico. The most commonly reported dental problem was dental sensitivity (62%). SPOH was reported as poor by 35% while self-perceived poor general health was reported by 10%. Twenty-seven percent reported having toothache/pain; 38% had any untreated dental caries; 51% had one or more missing teeth and mean DMFT (SD) was 6.0 (0.3). Sixty-seven percent did not have any dental insurance and 12% had never been to a dentist. Women (PR, 95%CI=1.6, 1.1-2.6), those who reported one or more oral health symptom (1.2, 1.1-1.2) and those who had one or more missing teeth (1.6, 1.1-2.2) were significantly more likely to report poor SPOH.

**Conclusions:** Agricultural workers bear a significant burden of dental disease and there is a need to address their dental symptoms.

#### Student Abstract #: 111

### PROJECT BRIDGE – STUDENT-RUN FREE DENTAL CLINIC AT BRIDGE OVER TROUBLED WATERS, BOSTON

**Author(s):** Carrie Y. Tsai, Jarshen Lin, DDS, Harvard School of Dental Medicine; Dennis Espejo, Bridge Over Troubled Waters.

**Objectives:** Project Bridge is the student-run free dental clinic that is based out of and serves the clients of Bridge Over Troubled Waters (BOTW), which is a larger organization that provides services to homeless and at-risk young adults of the Boston area. Program objectives are to improve the dental knowledge and health of this often overlooked demographic through both actual dental care as well as education that increases our clients' healthy habits and self-efficacy that will allow them to take care of their own health.

**Methods:** Harvard School of Dental Medicine volunteers provide basic dental services such as exams, cleanings and basic restorative needs. In addition, Project Bridge includes an educational component comprised of oral health/hygiene sessions given to the students of BOTW's GED program as well as clients living at associated residential facilities.

**Results:** In the year of 2008, Project Bridge was able to serve 88 patients and perform 234 dental procedures as well as provide educational outreach to over 100 clients.

**Conclusions:** While this volunteer effort has an enduring value to the community that it serves—not only because of the relief and prevention of dental decay, but also through skills and oral health knowledge that will inform the rest of the clients' lives—it additionally instills in the volunteer dental students a sense of obligation to work with underserved populations.

#### Student Abstract #: 112

### THE MENTION PREVENTION INITIATIVE

**Author(s):** Kristy Williams, UNC Chapel Hill, Dental Hygiene 2009

**Objectives:** The "Mention Prevention" Initiative is an oral health program that seeks to increase the awareness of the importance of oral health, and proper oral hygiene for citizens in Goldsboro, North Carolina.

**Methods:** A 6 item random questionnaire, composed of open-ended and closed ended questions, was created and used to collect information regarding oral hygiene, and demographic information. 8 thirty minute oral health education sessions were held discussing the following topics: importance of flossing/brushing, the proper way to floss/brush, gingivitis vs periodontitis, and the systemic link between oral health and the body. Participation was voluntary. Visual aids used to present information included mouth models, toothbrush models, floss, brochures, and patient education flip charts. A second survey was administered at the end of the sessions that asked participants if they were satisfied with the session, and to list something that they learned that they did not know prior to the forum.

**Results:** 89 out of 92 participants were satisfied with the oral health education sessions. The top three reported items of knowledge gained during the oral health sessions included the importance of flossing, the systemic link between oral health and the body, and importance of brushing, respectively.

**Conclusions:** This program proved to be successful because it reached and taught citizens the importance of basic oral hygiene, which may not otherwise have had the opportunity to acquire this knowledge. This was the beginning of changing North Carolinian's perspective of oral care/oral hygiene and potentially saving my fellow citizens lives.

#### Student Abstract #: 113

### FACTORS ASSOCIATED WITH PERCEIVED NEED FOR DENTAL CARE AMONG HOMELESS PERSONS

**Author(s):** Dina Girgis, BS, Department of Clinical Services Marquette University School of Dentistry. Scott Jackson MS; T. Sergey Tarima, PhD, Department of Population Health, Division of Biostatistics, Medical College of Wisconsin, Albert Abena JD, DDS, Christopher Okunseri BDS, MSc FF.

**Objectives:** Background: Persons who are homeless have high rates of untreated dental diseases. However, little is known on a national level about factors associated with homeless persons' perceived need for dental care. The study objective is to identify the demographic characteristics and factors associated with perceived need for dental care among homeless persons in the United States.

**Methods:** Retrospective secondary data analysis of the National Survey of Homeless Assistance Providers and Clients database.

**Results:** Overall, 10% of homeless persons reported that dental care was their most needed service. Of these, 17% had dental services in the past 12 months, 65% were minorities, 72% lived in a central city, and 32% were veterans. Homeless persons who were veterans ( $p=0.007$ ) as well as persons without insurance ( $p<0.001$ ) were significantly more likely to report dental care as their most needed service. African-Americans and Hispanics were also more likely to report the need for dental care, but these were not significant.

**Conclusions:** A substantial proportion of homeless persons reported that dental care was their most needed service. Veteran and insurance status were significantly associated with reporting the need for dental care. Strengthening existing oral health care programs sensitive to the needs of homeless persons may improve their oral health and reduce their dental disease related morbidity.

**Student Abstract #: 114**

### **FACTORS AFFECTING IOWA FAMILY PHYSICIANS' FREQUENCY OF REFERRAL AND OTHER ORAL HEALTH-RELATED PRACTICES TARGETING HIGH CARIES-RISK CHILDREN (0-3)**

**Author(s):** Yousef AlYousef, BDS , MS , Department of Preventive and Community Dentistry, University of Iowa , Karin Weber-Gasparoni, DDS, PhD, Department of Pediatric Dentistry, University of Iowa , Peter Damiano, DDS, MPH, Department of Preventive and Community Dentist, Fang Qian, PhD, Department of Preventive and Community Dentistry, University of Iowa, Jody Murph, MD, MS, Department of Pediatrics, UIHC, University of Iowa

**Objectives:** This study evaluated Iowa family physicians' oral-health practices, factors influencing their ability and willingness to assess and refer high caries-risk children aged 0-3 years.

**Methods:** A 22-item survey was mailed to 1232 licensed family physicians to address areas of interest. Chi-square statistics and logistic regression models were used to analyze data.

**Results:** Following two mailings, 252 (21%) usable surveys were returned. Physicians noted high levels of comfort with all specified oral-health-related practices. The majority of respondents (58%) routinely gave the name of a dentist to the caregiver when referring, while only 7% and 15% used local care coordination services or directly made the dental appointment, respectively. Only 5% of respondents stated that they never referred patients. Approximately 50% referred all children 12 months or older to a dentist in accordance with AAPD and AAFP guidelines. Less than 4% used caries risk assessment as a primary determinant for referral. The ability to locate a dentist willing to accept Medicaid or uninsured children was noted as the major referral barrier (80%). Bivariate and multivariable-logistic regression analyses indicated that physicians who observed higher frequencies of oral-health problems ( $P=0.0004$ ) or had higher comfort levels performing oral-health-related practices for children aged 0-3 ( $P=0.007$ ) were significantly more likely to refer more frequently to dentists

**Conclusions:** Frequency of oral-health-related problems observed and perceived comfort levels were both found to be significant predictor variables of frequency of dental referrals. For every unit increase in these factors, physicians were 8% and 11% more likely to refer to dentists.

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