NOHC 2007 Abstracts

Oral Presentations

Advancing Oral Health Care for Persons Living with HIV/AIDS

1 SPNS To Improve Oral Healthcare Access for People Living with HIV

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Objectives: To describe the Special Project of National Significance (SPNS) funded by HRSA in September 2006 to 15 demonstration sites and one evaluation and support center to expand access to oral health services for people living with HIV. Also to explain how this complements currently-funded oral health programs.

Methods: Program design is urban and rural including use of mobile vans, sending providers/equipment to new locations, developing transportation systems to bring patients from broad geographic areas to central care sites, and creating dental reimbursement programs. Many programs include training/education for oral health providers, patients, and medical providers. A subset will implement rapid HIV testing. Evaluation/support center will provide T&TA and analysis.

Results: The multi-site evaluation will measure results using quantitative/qualitative methods. Outcomes will be examined at client, program, and systems levels. Evaluation topics include increased access to oral healthcare for target populations; similarities/differences in strategies to increase access to oral health accross programs; client improvement in oral health-related quality-of-life; and replicability of strategies to address policy and financing issues.

Conclusions: The results of this five-year demonstration/evaluation project should influence the development of sustainable oral health services for people living with HIV in urban/rural areas.

2 HIVDENT: A Commitment for Sustained Multidisciplinary Advocacy and Education

David Reznik, DDS Grady Health Systems; Helene Bednarsh, BS, MPH, Boston Public Health Commission

Objectives: To provide to the dental public health community a current overview of HIVdent, an internet-based multidisciplinary educational resource focusing on recognition and management of oral diseases seen in association with HIV infection.

Methods: Founded in 1997 with the focus of increasing access to comprehensive oral health care services and awareness of the importance of oral healthcare in improving outcomes for people of all ages (adults, adolscents and children) living with HIV disese, HIVdent is a not-for-profit coalition of concerned healthcare professionals committed to assuring access to high quality oral healthcare services. HIVdent (http://hivdent.org/) disseminates state-of-the-art treament information and shares expertise in advocacy, development, training, integration, and evaluation of oral health services for the HIV-infected population.

Results: A decade with HIVdent has yielded a non-profit organization that provides internet access to educational materials on all aspects of HIV disease for consumers and providers of care world-wide. The HIVdent Faculty has been involved in technical assistance programs to expand HIV oral healthcare and advocacy to ensure that oral health remains a priority for this vulnerable patient population. In December 2006 the Friends of NIDCR awarded its Media Award of Excellence for the HIVdent accomplishments.

Conclusions: As the challenges of oral healthcare for persons living with HIV continue, it is important that the public health and care communities remain aware of resources for optimizing oral and general health for all.

3 Academic HIV/AIDS Oral Healthcare: RWCA Mechanisms Within One Dental School

Linda M. Kaste, DDS, PhD, UIC COD; Michael Oliphant UIC COD; Danny Hanna DDS, UIC COD OMDS; Larry Salzmann DDS, UIC COD; Mona Van Kanegan DDS, MS, Heartland Alliance

Objectives: To contrast and compare the mission, operations, care provision and training experiences of the dental programs associated with HRSA Ryan White Comprehensive AIDS Resources Emergency (CARE) Act funding at a Midwest public dental school to inform others contemplating similar programs.

Methods: The University of Illinois College of Dentistry receives funding through different HRSA mechanisms for oral healthcare provision for persons living with HIV/AIDS: On-campus: 1) Title 1 funds through the City of Chicago award and 2) Dental Reimbursement Program (Part F); and Extramural: Community-based Dental Partnership funds awarded directly for the Chicago AIDS Network for Community Outreach (CAN-DO).

Results: The on-campus program at UIC provides training experiences for volunteer pre-doctoral dental students, with faculty members as the primary health care providers, along with participation from the postgraduate Endodontics, Oral Surgery and Periodontics programs. The CAN-DO program provides a mandatory 4 day rotation for all 4th year dental students as part of a special needs course. Four students can opt for an additional 20-day rotation.

Conclusions: A number of different programs, enabled by HRSA funds, strive to increase access to dental care for persons living with HIV. Dental school-associated programs provide the means of long term return by raising the comfort level of the next generation of private practitioners as they provide care under a number of different educational practice settings.

4 Community-Dental School Partnerships

David Rosenstein, DMD, MPH, Oregon Health and Science University

Objectives: To review the history of collaboration between a community-based program, with a focus on care for HIV positive clients and a dental school, as well as share lessons learned.

Methods: The Russell Street Clinic has had more than $13.4 million in grants awarded to it since opening in 1975, including two NIH grants. The project has been cited as a "national model for treating the poor, homeless and HIV-infected." The program has been an evolution, with the establishment of a partnership between the dental school and a community-based site serving populations with limited access to dental care.

Results: Sustainability of the program over the years has required commitment from the providers (all clinic dentists and hygienists are OHSU faculty - many introduced to the clinic as dental students), diversity of funding (it became a Ryan White Title 1 Service Provider in 1995), passion and adaptation to the changing funding streams. Key to success for partnerships between community/dental schools is the recognition that productivity concerns be addressed along with educational objectives.

Conclusions: This history of HIV/AIDS is a relatively short one. However, the impact of the community-based program on both the patient population as well as the students trained to provide care to this population has been significant. The face of AIDS has changed over the past decade, and the training of our students similarly has changed.

5 Salivary Diagnostics: Potential Benefits of HIV Testing in Dental Settings

Jennifer Cleveland, DDS, MPH, Centers for Disease Control and Prevention, Health and Human Services; Susan O. Griffin PhD; Laurie K. Barker MSPH, Division of Oral Health, CDC; Raul A. Romaguera DDS MPH, Division of HIV/AIDS Prevention, CDC; Lauren L. Patton DDS, School of Dentistry, University of North Carolina.

Objectives: To discuss the evolution of CDC guidelines on HIV counseling and testing, potential benefits and feasibility of HIV testing in dental clinics, and future directions for the use of salivary diagnostics to screen for other infectious and chronic conditions.

Methods: CDC guidelines on HIV counseling and testing were reviewed; data from the National Surveillance System for Healthcare Workers (NaSH) and NHANES 99-04 were analyzed to determine benefits and cost for HIV testing in dental clinics; and, a 1999 survey of dental schools on student's training and willingness to screen for HIV and two meetings in 2006 of stakeholders to discuss the feasibility were conducted.

Results: CDC guidelines recommend screening for HIV in alternative venues, such as dental settings. NaSH data suggest that using a rapid HIV test of source patients following occupational exposures could reduce the number of unnecessary days on postexposure prophylaxis among exposed personnel. NHANES data indicate that routine testing of dental patients in community health centers could decrease undiagnosed HIV prevalence among persons infected with HIV. The survey among dental schools and the meetings among stakeholders identified benefits and barriers to HIV testing in dental settings.

Conclusions: Rapid oral tests make HIV-testing in alternative venues such as dental offices potentially feasible and cost-beneficial. The availability of salivary diagnostics is helping shift the traditional role of dentists toward an enhanced participation in the diagnosis of systemic diseases and conditions.

6 Is Smoking a Risk Factor for Oral Candidiasis in HIV-1 Infected Persons?

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Objectives: Association of smoking with oral candidiasis (OC) is controversial. We aimed to examine if smoking is associated with greater risk of OC among HIV-1 infected persons.

Methods: The cross-sectional part of this study evaluated 631 adult dentate HIV-1 seropositive persons (race: White and Black only) examined for OC from 1995 - 2000 at the University of North Carolina Hospitals in Chapel Hill, NC. In the second part, some 283 individuals who were free of HIV-associated oral diseases at baseline were followed up for two years to assess incident OC events. Data collected from medical record review, interview questionnaires and clinical examinations were analyzed using chi-square tests, t-tests, and non-parametric tests. Multivariable analysis examined OC alone as well as OC occurring together with oral hairy leukoplakia (OHL). Unconditional logistic regression and proportional odds models were developed for prevalent disease, employing the likelihood ratio test, and Poisson regression models were developed for examining cumulative incidence of OC. Independent variables included: age, race, sex, sexual orientation, smoking, recreational drug use, CD4+ cell count, antiretroviral medication use, and antifungal medication use.

Results: Thirteen percent of participants had OC only; 4.6% had OC with OHL; and 69.7% had neither. Smoking was associated with OC in all models [prevalent OC - current smokers: logistic regression - OR (95% CI) = 2.5 (1.3, 4.8); proportional odds - OR= 2.3 (1.4, 3.8); Incident OC - ever smokers: Poisson regression (main effects model) - incidence rate ratio (95% CI) = 1.9 (1.1, 3.8)]. Other Poisson regression models suggested evidence for effect modification between smoking and CD4 cell count in the incident OC analysis.

Conclusions: Smoking is a risk factor for development of OC in HIV-1 infected persons.

Expanding Capacity to Improve Access to Care

7 Quality Assessment of Dental Treatment Provided by Dental Health Aide Therapists in Alaska

Kenneth Bolin, DDS MPH, Baylor College of Dentistry, Department of Public Health Sciences

Objectives: The specific aim of this study is to determine by chart review if Dental Health Aide Therapists (DHATs) currently practicing in rural Alaskan communities are delivering dental care that is within their scope of training, is safe, and meets the generally accepted standard of care of the dental profession.

Methods: Charts of patients treated by DHATs and dentists in three Alaskan health corporations were audited to assess quality of care and the incidence of adverse events during or following treatment. Reviews of dental operative and surgical procedures performed by dentists, DHATs under direct supervision, and DHATs working with general supervision were conducted in July and August 2006. Charts or electronic records were examined according to criteria adapted from Indian Health Service QA documents. Frequency analyses were performed on selected variables and statistical tests were performed.

Results: Out of 640 comparable operative and surgical dental procedures, 171 were performed by dentists, 218 by DHATs under direct supervision, and 251 by DHATs under general supervision. Overall frequencies were: SOAP notes present 99.7%; radiographs adequate 86.1%; treatment code recorded consistent with diagnosis 98.4%, and complications present 2.3%. There was no difference in percentages of procedures resulting in complications between the three groups. One way ANOVA between groups was not significant (0.788)

Conclusions: In charts audited from 5 dental clinics in 3 different Alaskan health corporations employing DHATs, dental treatment was found to be within the scope of training, was delivered in a safe manner, and met the standard of care of the dental profession. For comparable operative and surgical dental procedures, there was no statistical difference in the amount of complications resulting from treatment delivered by dentists vs. DHATs.

8 Examination of Dental Hygienists' Increasing Role in Improving Access to Care

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Objectives: This study examines current components of Registered Dental Hygienists' (RDH) practice which enhance access to care comparative to the preliminary practice characteristics of newly implemented Registered Dental Hygienists in Alternative Practice (RDHAP) in California.

Methods: A stratified random sample survey of licensed dental hygienists in California was conducted from October 2005-January 2006, with a 73% response rate. Comparative analyses of demographics and practice data were computed using chi-square and t-tests.

Results: Overall, RDHs in California report very little public health oriented work. RDHAPs are significantly more likely ($p<0.05$) to work with young children, medically compromised patients, consult with non-dental health care providers, apply sealants or fluoride in a public health program, volunteer services, work in non-traditional settings, and express a desire to work with underserved patients and communities.

Conclusions: While a relatively small proportion of the workforce, RDHAPs show a greater propensity for public health oriented work than RDHs, confirming the initial success of this policy change aimed at increasing access by enhancing the dental workforce. However, RDHAPs are few in number, so significant changes in access are not expected in the near future. Funding: CDA, HRSA 5U76MN10001-02, US DHHS NIH/NIDCR U54 DE 142501

9 Effects of Preventive Dental Care in Medical Offices on Access to Care for Young Children Covered by Medicaid

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Objectives: Dental decay is the most common preventable chronic disease among preschool children in the U.S. Physicians typically provide a dental assessment and oral health counseling of parents during well-child visits. In January 2000, North Carolina initiated a comprehensive preventive dental program for Medicaid-enrolled children from birth through 35 months of age (Into the Mouths of Babes, or IMB). IMB services, which include a fluoride varnish application in addition to screening, risk assessments and counseling, are offered in medical offices by providers trained through continuing medical education. This study assesses the effects of the IMB program on access to preventive dental care.

Methods: The analysis uses Medicaid claims and enrollment data from the NC Division of Medical Assistance for all Medicaid-enrolled children from 6 - 35 months of age from January 2000 to June 2003. The observational longitudinal analysis uses child-month indicators of IMB visits in medical offices and dental visits (preventive and restorative) in dental offices. A difference-in-differences regression approach is used because the program was implemented gradually throughout the state over several years.

Results: The IMB program led to a substantial overall increase in access to preventive dental care without reducing preventive care by dentists. The program increased identification of existing disease and referral to dentists for treatment.

Conclusions: Dentists are in short supply in many areas, and access to preventive dental care historically has been very poor for young Medicaid-eligible children. Expanding access to preventive dental care in medical offices does not decrease use of dentists for preventive care and improves dental health through referrals to dentists.

10 Determining Whether or Not Dental Students Will Immediately Enter Private Practice Upon Graduation

Raymond Kuthy, DDS, MPH, University of Iowa College of Dentistry, Preventive and Community Dentistry; Sarah Allen, Fang Qian. University of Iowa College of Dentistry

Objectives: To determine potential predictor variables for ascertaining whether dental students will immediately enter private practice upon graduation.

Methods: Questionnaires were administered to University of Iowa students. The survey focused on: personal information; educational debt; work experience; interactions with dentists; career desires upon entry into school; reasons for pursuing dentistry; and comfort level with managerial and business roles in dental office. Bivariate and logistic regression analysis was used to determine predictors for immediately entering private practice upon graduation.

Results: 280 of 300 students returned questionnaire. Regression analysis demonstrated that students who plan to enter private practice immediately after graduation had a higher level of certainty for career plans (p=.0244), a higher level of desire to be a general dentist upon entry into school (p<.0001), a lower level of willingness to explore different career options within dentistry (p<.0001), a higher level of family dentist influence (p=.0057), a higher level of anticipated educational debt (p=.0303), and more influenced by a larger community (p=.0465) when compared with their counterparts.

Conclusions: Findings suggest that several variables help predict whether or not students will immediately enter into private practice. Information is useful for further educational and public policy research.

11 The Capacity of Community Clinics for Dental School Partnerships

Paul Glassman DDS MA MBA, University of the Pacific School of Dentistry; Paul Subar DDS, University of the Pacific School of Dentistry

Objectives: To determine the capacity of community clinics in California to act as rotation sites for dental students and dental residents. Rotations to community clinics have the potential to improve student understanding of diverse underserved populations and provide care for clincis that often cannot meet the demad for care and have trouble hiring an adequate number of providers. However, the capacity of clinics to host rotations was previously unknown.

Methods: A survey was conducted of all community clinics in the state of California. The survey plus follow-up focus groups addressed the availability of dental services, the kinds and quantity of dental services rendered, the expereince with and barriers to hosting dental student and resident rotations, and plans for future delivery and expansion of dental services.

Results: 61% of 212 clinics with dental facilities not associated with dental education institutions responded to the survey. The responding clinics had a wide variety of organizational structures, clinic funding mechanisms, patient payor mix, and patient composition. The average clinic had a 28 day waiting list for a new patoient examination. Although there were many clinics that indicated interest in forming partnerships with dental schools and indicated capacity to host rotations, only 25% of clinics had previous experience with dental student or resident rotations. Those with experience were very positive about the value of these rotations.

Conclusions: It is clear that there can be significant mutual benefit from closer cooperation between the dental schools and clinics. Clinics have a serious need for help with general workforce, specialist consultation, and practice management improvement. Schools need additional experiences for their students to train them to meet the needs of an increasingly complex population.

12 Developing RIte Smiles - A Managed Care Dental Program for Young Children

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Objectives: To increase access to dental care for children born on or after May 1, 2000 enrolled in RI Medicaid and to improve their dental outcomes from a early age that will, over time, reduce the need for high cost dental procedures.

Methods: RI DHS collaborated with numerous community organizations and assembled a special advisory workgroup as part of the development of this unique model. Grant money from the Robert Wood Johnson Foundation as part of the State Action for Oral Health Access Project funded the program's development in a budget neutral environment. A federal 1915 (b) waiver was also approved which gave RI the necessary authority. In 2006, DHS contracted with UnitedHealthCare Dental-RIte Smiles to administer a dental managed care program statewide.

Results: Enrolled all 30,000 eligible children in a phased process starting in Sept. 2006 and ending in November 2006. Provider network went from approximately 27 high volume practices to over 120 participating RIte Smiles providers (and growing) across the state thanks to the support of the RI Dental Association and focused recruitment from United's staff. Program growth will occur as eligible children age into RIte Smiles rather than fall off when they turn age six. New parent education initiatives, PCP and general dentist education programs are designed to link oral health & overall health.

Conclusions: Careful program development along with strong community relationships and collaborative efforts with stakeholders were keys to the successful implementation of the first Medicaid dental managed care program in RI. United has a true partnership with DHS as the one consistent, accountable entity responsible for the improvement of oral health access for RI's youngest and most vulnerable population.

Current topics: Addressing Oral Health Across the Lifespan

13 Longitudinal Fluoride Exposures, Dental Caries and Dental Fluorsis

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Objectives: Recommendations for use of fluorides must be made carefully to optimize caries prevention and minimize fluorosis risk. The purpose of these analyses was to describe longitudinal fluoride exposures from different sources for children with no history of caries or fluorosis and compare their exposures to others.

Methods: Data are from the Iowa Fluoride Study which recruited a birth cohort and has longitudinally collected fluoride exposure and other data at

regular intervals for over 700 children currently aged 12-15 years. Analyses provide mean fluoride exposures from infant formula, water, dentifrice, supplements, and combined from birth to 8.5 years. Dental examinations for caries and dental fluorosis were conducted at ages 4-5 and 8-9 years. Study subjects were grouped based on any dental caries experience by age 8-9 and permanent tooth dental fluorosis at age 8-9 (incisors and first molars) as having neither condition, caries only, dental fluorosis only, or both.

Results: Children with fluorosis or both fluorosis and caries had slightly, yet consistently higher mean fluoride intake (mg F) from water beginning at 6 months of age. Mean fluoride exposure from dentifrice was similar for the 4 groups up to 24 months; thereafter, those with fluorosis only had markedly higher exposures. Overall mean fluoride intake from infant formula was markedly higher for those with fluorosis or both caries and fluorosis, with this finding much stronger for boys. Children with caries only generally had lower fluoride exposures or intakes compared to the other groups for all sources and combined.

Conclusions: These analyses highlight the difficulties in making clear-cut fluoride recommendations in order to achieve the optimal outcome of a dentition free of both dental caries and dental fluorosis.

14 Evaluating Colorado's School-Based Sealant Program and SEALS Implementation

Megan Martinez, MPH, Colorado Department of Public Health and Environment, Oral Health Department; Mathew Christensen, Ph.D., and Theresa Anselmo, BSDH

Objectives: The delivery system and development of a coordinated school-based sealant program for Colorado is evaluated to identify practices and opportunities for improvement and expansion of sealant delivery to children in greatest need of oral disease prevention.

Methods: Data come from three sources. (1) After each school visit, contractors entered service-data into SEALS (Sealant Efficiency Assessment for Locals and States). (2) Contractors were interviewed about their program, technical assistance needs, and about using SEALS software. (3) The state sealant coordinator was interviewed about the process of coordinating and improving the program, and future directions.

Results: From 2004 to 2005 the percent of eligible schools participating doubled from 9% to 18%; the number of children served increased by 55%. In 2005-2006 2,533 2nd graders and 60 6th graders were screened for sealants; 2,148 received 7,263 sealants (3.4 per child). There were an estimated 2,199 cavities averted. There were 67 school-based events and 88 school-linked events.

Conclusions: In 2005-2006 the school-based sealant program developed in capacity (contractors, coordinator, schools, students); uniform data reporting (SEALS coordinating all contractor activities); and meeting the greatest oral health needs (disparities reduced, disease averted, cost savings). Contractors and the state coordinator reported areas of growth and improvement and identified further needs.

15 Fluoride Varnish Improved the Financial Viability of a School-Based Sealant Program in Boston, Massachusetts

Natalie Hagel, RDH, MS, Boston University School of Dental Medicine, Health Policy and Health Services Research; Michelle M. Henshaw, DDS, MPH , Brandon Leickly, BS; Lynn A. Bethel, RDH, BSDH, MPH, MA DPH; Kathryn Dolan, RDH, MEd, Tufts Univ.; Michael Monopoli, DMD, MPH, MS, DSM-Delta Dental of MA

Objectives: This paper evaluates the financial impact of incorporating fluoride varnish (FV) applications into a school-based sealant program.

Methods: Costs were calculated based on 2005-2006 school year expenditures. The incremental cost of the FV application was calculated by adding the salary costs (2 min of dental hygienist time and dental assistant time/ FV application) to the additional supplies that are needed to apply FV at the time of sealants. For a conservative estimate of income from fluoride varnish, we used the Massachusetts Medicaid fee schedule, $20.37 per fluoride application, and applied this fee to all participants who had dental insurance.

Results: The net income was calculated as the difference in the income and cost. The total cost of labor and supplies per FV application was $2.70, with 73% of the cost attributable to labor. The net income equaled $17.66 /FV application. Of the program participants, 60% had Medicaid and 19% had private insurance, for a total of 79% insured. The total cost for fluoride applications was $4197, the total billable income was $18,952 with the program realizing a net income of $14,755.

Conclusions: The results of this study showed that fluoride varnish application contributes a positive net income of $17.66/FV application, when a school-based program is already applying sealants and billing for that service. In addition to preventive benefits of FV, FV can have a positive impact on program sustainability. Support: National Institute of Dental and Craniofacial Research U54 DE 14264 and the Oral Health Foundation.

16 Dental Caries Risk in the U.S, Air Force

Gary C Martin, DDS, MPH , TRICARE Management Activity, Joseph a Bartoloni, DMD MPH, Lackland AFB, Texas

Objectives: Background: This study describes the dental caries risk in the active duty United States Air Force population from October 2000 through September 2004 across selected demographic variables.

Methods: This investigation used data collected from two United States Air Force databases (personnel and dental files) by cross-referencing Social Security numbers from both databases with date.

Results: During this study period, the percentages of people at high and moderate risk of developing caries decreased by 31 percent and 12 percent, respectively, while the percentage of people at low risk of developing caries increased by 9 percent. Among Air Force members who were enrolled continuously during the study period, the percentages at high and moderate risk of developing caries decreased by 57 percent, and 18 percent, respectively while the percentage at low risk for developing caries increased by 14 percent. The authors observed improvement in caries risk in 83 percent and 73 percent of the people at high and moderate caries risk, respectively, for those continuously enrolled. High caries risk was related inversely to age, rank, education and years in service. Also, tobacco users had an elevated risk for dental caries.

Conclusions: The United States Air Force Dental Service has made great strides in improving the oral health of the Air Force population. The results of this study suggest that caries risk is decreasing in the Air Force population, but oral health disparities still exist and require further evaluation.

18 Developing a Plan to Improve Access for Kentucky Elders: Kentucky Elder Oral Health Survey

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Objectives: Assess the oral health status and treatment needs of well elders compared to functionally dependent (nursing home and homebound) elders to identify factors which affect dental access for Kentucky elders.

Methods: The Kentucky Elder Oral Health Survey (KEOHS), a statewide survey (2001-2005), was administered via interview questionnaire and clinical screening exam. A total of 1,386 elders stratified into three groups based on living situation (well elders living in own home [WE], nursing home [NH] and homebound elders [HB]) were surveyed to determine their oral health status and oral health access beliefs.

Results: The majority of elders need routine care (53.8%) and the greatest treatment urgency was found in the HB and NH elders where 23.7% and 21.6% respectively need early or immediate care. Major barriers reported for obtaining dental care or services include no dental insurance (56.5%), can't afford (53.3%), no way to get there (25.2%) and limited mobility (22.4%). The main recommendations for improving elders' access to oral health services include: make dentistry more affordable (55.5%); provide mobile clinic/van (28.4%); provide house calls (22.2%); make offices more handicapped-accessible (15.2%).

Conclusions: Underserved elders, defined in the KEOHS as the NH and HB elders, have oral health needs which are much greater than the WE group. The results of this survey are currently being used to develop a model program to improve access to oral health services targeting NH and HB elders in Kentucky.

Poster Presentations

Prevention and Partnerships: Promoting Oral Health of Pregnant Women and Children

19 CenteringPregnancy® with Smiles: Integrating oral health with group prenatal care in a collaborative delivery system

Judith Skelton, PhD; Robert Kovarik, DMD, MS; Sharlee. Burch, RDH, MPH; M.Raynor Mullins, DMD, MPH; Jeffery Ebersole, PhD-University of Kentucky College Of Dentistry; LeAnn Todd, RN; Sara Womack, RDH-Trover Women's Health Center

Objectives: To develop, implement and evaluate a regional translational research partnership involving a small group delivery model to improve prenatal care, oral health and birthing outcomes in rural, underserved pregnant women.

Methods: In 2005, the University of Kentucky Center for Oral Health Research, Hopkins County Health Department and Trover Women's Health Center in Madisonville (TWHC), worked collaboratively to develop an integrated health care delivery model, combining Centering Pregnancy®, a national prenatal group care model, with oral health education and treatment to control oral infections.

Results: In 1/2006, the TWHC converted its midwifery practice to the Centering Pregnancy with Smiles® model. To date 134 of the study mothers have delivered babies; 93 received dental treatment; 6(4.5%)were premature (KY rate15.8%); 5(3.7%)were low birth weight (KY rate 8.5%, targeted rural counties 9.6%). Based on these results, the TWHC was recently selected as an intervention site for a major March of Dimes demonstration project in Kentucky. Participant and staff response to the Centering Pregnancy with Smiles prenatal care model were very positive.

Conclusions: Collaborative partnerships between rural and university based programs can be successfully implemented leading to innovative, integrated, sustainable team approaches to delivery systems.This project has provided a translational research model that serves as a prototype for sites across Kentucky. Supported by HRSA grant 1 D1ARH0565653-01-00.

20 The Potential Role of Breastfeeding and Other Factors in Helping to Reduce ECC: A Case-Control Study

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Objectives: Tooth decay is the most common chronic disease in US children. Early childhood caries (ECC) is particularly virulent and can interfere with a child's ability to eat, grow, speak and communicate. Breastfeeding has been promoted as providing several benefits including reduced risk of dental disease, but studies on whether breastfeeding reduces ECC have been inconclusive. This study was done to further explore this issue.

Methods: A case-control study was done with175 children, aged 1-5, receiving dental care at Hughes Spalding Children's Hospital in Atlanta, GA. Cases were children meeting the American Academy of Pediatric Dentistry's definition of ECC (1 or more decayed, missing or filled teeth surfaces (DMFS) in children under 6), while controls had no decay. Participants had a dental exam, chart data abstraction and a personal interview with their mother.

Results: Our study yielded too few exclusively breastfed children to adequately study our issue, but we were able to compare the children exclusively bottlefed for long periods of time with those who also had some breastfeeding but for well short of a year. The children exclusively bottlefed 1.5 years with no breastfeeding had a mean of 10 DMFS compared to only 6 in the additional children who also had some breastfeeding, and the children who bottlefed over 1.5 years without any breastfeeding had a mean of 25 compared with only 16 in the additional children who also had some breastfeeding. In addition, no bottle at night, mother brushing child's teeth, adequate dental care in mother and choice of formula seemed to reduce ECC.

Conclusions: Our results suggest that breastfeeding, as well as several other measures, might reduce the risk of ECC. Medical providers need to discuss oral health with new mothers and provide education on the important role they can play in keeping their babies' teeth healthy.

21 Neighborhood Smiles: An Early Oral Health Assessment and Intervention Program

Joan Lowbridge, RDH, BS, Massachusetts Department of Public Health-Office of Oral Health; Lynn A. Bethel, RDH, BSDH, MPH, Massachusetts Department of Public Health

Objectives: State health department dental programs have the advantage of collaborating with other public and private agencies to improve access and develop prevention programs for populationss at high-risk for dental disease. The goal of Neighborhood Smiles is to improve the oral health of young children 0-5 years of age at high-risk for dental disease.

Methods: The Massachusetts Department of Public Health Office of Oral Health (MDPH-OOH) collaborating with public and private agencies implemented an oral health risk assessment (OHRA) for children 0-5 years of age enrolled in the Early Intervention Program (EI). The OHRA involves non-dental professionals who have scheduled, long term relationships with Early Intervention (EI) children and their families. These non-dental professionals, trained by the DPH-OOH to complete a written oral health assessment with EI parents and a visual oral screening of the EI child, provide education (via a tool kit with anticipatory guidance cards) tailored to the family's needs to decrease the risk of dental disease. If it is determined that the EI child needs an assessment by a dental professional, they are referred to a dental hygienist (RDH) experienced in treating children with special health care needs (CSHCN).

Results: Evaluation of the OHRA is designed to answer two basic questions: 1. If offered, will parents accept oral health risk assessment, oral health screening and referral services provided by non-dental health professionals; and 2. Will oral health risk assessment, along with screening and referral improve the oral health of high-risk children?

Conclusions: Non-dental professionals may be effective in improving the oral health of children with special health care concerns 0-5 years of age.

22 Healthy Teeth, Happy Teeth - An Educational Oral Health Program for Head Start

Julie Nocera, RDH, MS, Tunxis Community College, Dental Hygiene; Jane Gutowski, RDH, Joanne Emanuel, RDH; Robin Knowles, RDH, MPH

Objectives: To develop and implement an oral health program into an inner-city Head Start setting that aligns with the Head Start principles of health, education, nutrition and socialization to promote school readiness.

Methods: An assessment was conducted to define the problem and establish a need. Primary and secondary data were used to develop a community profile of the target population. Pre-tests were administered to establish a baseline of oral health knowledge among students. Head Start administrators and faculty were interviewed as well as local pediatric dentists. Existing programs from across the country were evaluated to identify potential obstacles.

Results: Based upon the findings, an oral health component was developed and integrated into two Head Start programs serving over 400 preschool children annually. The program utilizes cognitive, psychomotor and affective learning to promote optimal oral health.

Conclusions: This innovative approach to oral health education for preschool children has become an integral part of the Head Start curriculum in the two target communities. The repetition of this standardized and consistent message supports the principles of Head Start by providing faculty, children and families with opportunities to improve oral health

23 Achieving the Impossible: Minnesota's Collaborative Head Start Model

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Objectives: To meet the Head Start dental performance standards by implementing a comprehensive Community Collaborative Practice Oral Healthcare System for Minnesota Head Start children.

Methods: In 2006, the Minnesota Head Start Association, Minnesota Dental Hygienists' Association, Minnesota Dental Association and Apple Tree Dental jointly proposed a Community Collaborative Practice model for Head Start.

Minnesota dental hygienists may legally enter into a collaborative agreement with a dentist to provide prevention and education services for uninsured and Medicaid recipients in settings other than the traditional dental office. Collaborative practice hygienists who have been calibrated in use of the Association of State and Territorial Dental Directors' Basic Screening Survey will offer onsite assessment, triage and, for those children with early or urgent treatment needs, referral to dental offices.

Results: The Minnesota Department of Human Services established that this approach meets Minnesota's DHS dental examination standard. The Region V Office of Head Start affirmed that it therefore fulfills the federal Head Start dental exam performance standard.

Conclusions: This innovative approach provides onsite prevention and education, allows earlier identification of disease and creates needed linkages for local dentists to treat Head Start children.

23a Early Childhood Caries (ECC) Disparities in a Four County Appalachian Head Start Program

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Objectives: Document the prevalence of ECC and estimated treatment needs in rural children enrolled in a four county Head Start (HS) program in East Kentucky.

Methods: ECC prevelence estimated treatment needs and demographic data were recorded for children enrolled in 18 Head Start Centers using Kentucky Children's Oral Surveillance System protocols and a tablet PC based electronic record. The children were enrolled in a new comprehensive dental outreach progarm that is developing dental homes for underserved children at the UK North Fork Valley Community Health Center at Hazard, Kentucky.

Results: Four hundred and sixty three (76%) of all (606) HS children were screened. The prevalence of untreated ECC was 51% (versus 37% statewide) were also found. Ninety-four children (20%) were dentally uninsured (compared to a state rate of 13%). 306 children (66%) had Medicaid/KCHIP benefits and 62 children (13%) had other dental insurance.

Conclusions: This pilot study indicates a high prevalence of ECC in Head Start children in Appalachia resulting in substaining treatment needs, including care of pain and infection that can adversely affect learning and normal development. Many children had no dental insurance. However, 79% had dental benefits to help reduce financial access barriers. Establishing a dental home to improve case management is essential to help reduce these desparities. Suported by HRSA I DIARH0565653-10-00.

23b Establishing a Dental Home for Underserved Children Using a School Dental Outreach Model

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Objectives: Establish a dental home for financially disadvantaged school children by developing a comprehensive dental outreach program for a federally qualified community health center in East Kentucky.

Methods: The University of Kentucky Colleges of Medicine and Dentistry have implemented a Ronald McDonald Care Mobile Program for the UK North Fork Valley Community Health Center (NFVCHC) in Perry County, Kentucky. Needs were appraised using Kentucky Children's Oral Helath Surveillance System protocols. School-based prevention and treatment services are being offered for preschool and elementary children (PS-Grade 5). An intergrated delivery model coordinating the mobile program with the dental clinic at NFVCHC and with Family and Youth Service school staff were designed.

Results: Eleven county schools are participating (100%). Needs appraisal and preventive care have been completed at 7 schools. Of 1425 enrolled children, 1079 were screened (76%). Of those screened, 574 (52%) returned consents to partcipate in the new program. Of those, 32% were dentally uninsured and 49% had Medicaid/KCHIP dental benefits. The need for urgent care (14%) was very high compared to the 2001 state rate (4%).

Conclusions: Initial participation rates indicate establishing a dental home for underserved children in a rural community health center using an outreach model is both feasible and needed. Supported by HRSA ID IARH0565653-10-00.

24 Forsyth Kids School-Based Caries Prevention Program: Concepts, Methods, Outcomes

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Objectives: To implement an evidence-based, longitudinal elementary school-based, demonstration, comprehensive caries prevention program that: increases oral health access, improves oral health, and is financially sustainable.

Methods: Massachusetts schools and school systems with >50% of children participating in free/reduced lunch programs and local community heath centers were solicited for participation. Six schools in 3 school systems were selected. Twice yearly: calibrated DDS and RDH provided an examination, prophylaxis, sealants, glass ionomer temporary restorations, fluoride varnish, toothbrushes, fluoride toothpaste, and hygiene instruction. Primary data evaluation was by analysis of covariance.

Results: 1,196 children provided informed consent. 86% participated in the free/reduced lunch program. The average age was 7.1, 8.2 and 9.2 years for grades 1, 2, and 3 respectively. The effect of a single round of preventive treatment was evaluated 6 months later by comparing those receiving prevention at baseline (693) with those who were examined but not treated (503). A single prevention cycle increased the number of deciduous molars by 0.38 teeth ($p = 0.0001$). As well: dft and DFT were reduced by 4.13% ($p = 0.004$) and 1.1% ($p = 0.16$); Occlusal d and D were reduced by 9.0% ($p = 0.00003$) and 3.3% ($p = 0.04$); Smooth surface d and D were reduced by 2.3% ($p = 0.04$) and 1.6% ($p = 0.005$). Multiple treatments were also evaluated, and suggests that caries incidence was reduced approximately 10-fold (from ~10% to <1%) after 3 rounds of prevention.

Conclusions: These results indicate that the preventative program used in this study produced a dramatic effect on deciduous teeth and significant effects on occlusal and smooth surface caries in permanent teeth. This work was supported, in part, by Delta Dental Plan of Massachusetts.

25 School Oral Health Program, Kuwait-Forsyth: Improving Access to Dental Care for Kuwaiti Children

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Objectives: To improve Kuwaiti children's access to dental care by developing a school-based oral health prevention and treatment program.

Methods: The Ministry of Health, Kuwait in collaboration with Forsyth Research Institute, USA developed a School Oral Health Program, Kuwait-Forsyth to provide educational, preventive and restorative oral health services to Kuwaiti school children.

Results: The School Oral Health Program started in 1983 as a pilot project, today serves the oral health needs of 250,000 Kuwaiti school children ranging in age from 4 to 15 years. It comprises of about 150 dentist and 350 allied dental staff. Major components of this program are: 1) Administration; 2) Training; 3) Prevention; 4) Treatment; 5) Evaluation; and 6) Research and Policy. Continuous monitoring of the program shows that the School Oral Health Program has contributed significantly to improve the oral health status with stabilization of caries levels among Kuwaiti school children, to/with a DMFT of 2.8 at age 12.

Conclusions: International collaborations and school-based program such as the School Oral Health Program, Kuwait-Forsyth are effective in improving access to care and oral health of children.

26 Implementing a Model of In-School Dental Hygiene Programs

Robin Knowles, RDH, MPH, New Britain Oral Health Collaborative

Objectives: Implementing In-School Dental Hygiene Programs eliminates barriers to oral health care faced by uninsured or publicly insured children. The poster presentation describes the partnership between healthcare organizations, community social service and child-focused organizations, private dentists, and schools that led to the development and implementation of a portable dental hygiene program in the community's public schools.

Methods: The Oral Health Collaborative partnered with school administrators, the Board of Education, a community health center, and private dentists to provide dental hygiene services in schools utilizing portable dental equipment, a licensed dental hygienist, and bilingual Care Coordination staff. Students requiring restorative treatment are connected to appointments at the Community Health Center or with private dentists that are members of the Collaborative.

Results: The data results from the four pilot schools are included in the poster presentation. Data includes number of students receiving exams, cleanings, fluoride treatments, and sealants. The rates of decay are analyzed as well as the insurance status of the students served in the program.

Conclusions: The partnership between the education community, CHC, private dentists, and collaborative members led to a successful pilot program that has been replicated in all of the city's schools. The model has been replicated in other public schools, pre-school settings, and other communities throughout the state of Connecticut.

Oral Health Needs of Diverse Populations

27 Association Between Length of Residence and Hispanic Oral Health Access in Rural Illinois

Alejandra Valencia, DDS, MPH Candidate 2007, School of Public Health, University of Illinois at Chicago

Objectives: Many rural communities in Illinois are experiencing an outstanding growth in their Hispanic population resulting not only in an important demographic change but also in a social and economic transformation. The objective of the study was to perform an assessment of the oral health needs affecting Hispanic immigrants living in rural Illinois and to compare and describe the oral health needs of Hispanics who have newly arrived and those who were already established.

Methods: The study is part of an ongoing project that is using a Community Based Participatory Action Research (CBPAR) approach; the CBPAR project involves three main stages: Assessment, intervention, and evaluation. The study focused on the assessment stage that implicated the conduction of a health care needs survey, which in itself included the assessment of oral health needs. Convenience sample techniques were used to collect data from Hispanic participants living in seven non-metropolitan Illinois counties between 2005 and 2006.

Results: Several key barriers to oral health access associated with lengths of residence were found; among them are reduced frequency of dental visits, lack of a regular resource of dental care, lack of dental insurance, and language barriers.

Conclusions: Newly arrived immigrants were found to be more vulnerable, not only to the oral care resources challenges that a rural community often have, but also to the acculturation barriers that Hispanic communities generally faces.

28 Access to Dental Care for the Immigrants in Central Ohio

Homa Amini, DDS, MPH, MS, Columbus Children's Hospital, Dentistry; Paul Casamassimo, DDS, MS; Beth Noel, RDH; Jeffrey Price, BA, Columbus Children's Hospital.

Objectives: To describe the need and ability to access needed dental services of a group of immigrants residing in Central Ohio.

Methods: A face-to-face interview and a clinical oral screening was performed on a convenience sample of immigrants (n=80) enrolled in adult literacy programs at multiple locations in Columbus, Ohio.

Results: 51.9% of the respondents reported a history of toothache when biting or chewing during the past 6 months. 45.6% reported that there was a time when they could not get the needed dental care during the past 12 months. The main reason for not being able to get the needed dental care was lack of insurance and inability to afford dental care. Language barrier was not a major factor in accessing dental services. Only 30% had a dental visit within the past year. Clinical screening revealed 24.7% required emergency dental treatment, 53.1% needed early or non-urgent care, and 22.2% had no obvious problem.

Conclusions: The results of this study indicate that access to dental care is a problem for immigrants in Central Ohio, and there is a need to develop affordable oral health prevention and treatment programs for these populations.

29 Parental Perception of Access and Utilization of Dental Services in Special and Mainstream Education: A Qualitative Analysis

Yogita Butani, BDS, MS; Sarah B. Horton, PhD; Jane A. Weintraub DDS, MPH; All from University of California, San Francisco, Center to Address Disparities in Children's Oral Health

Objectives: To gain information about access to dental services by children enrolled in special education (S) and mainstream (M) classrooms, qualitative thematic analyses of parental survey responses were conducted.

Methods: Self-administered surveys were sent to parents of 270 children in 34 S classes and 437 children in 16 M in public elementary school classrooms in San Mateo, CA. The surveys included space to add optional written comments that were analyzed using qualitative thematic coding, and content analysis.

Results: The overall response for the survey was 60.5% (166/270 and 250/437 respectively). A subset of 46 completed surveys, 34 from S and 12 from M, provided additional written comments in English or Spanish. The responses were classified under major themes. Major themes for S were lack of access to care including fear of the dentist; lack of insurance and provider availability and reports of specific problems with the child's teeth and mouth. Major themes for M were more positive, having access to dental and orthodontic care.

Conclusions: This survey provided an outlet, especially for parents of S to express their difficulties finding a dentist they trusted and who was trained to treat special needs children. Supported by US DHHS/NIH/NIDCR T32-DE07306-10 and U54-DE142501.

30 Ethnicity and Socio-Economic Influence on Geriatric Women's Oral Health Status and Access to Care

Aida A. Chohayeb, DDS, MSD, Women's Network Collective; Rafik Saatciyan, DDS, Private Practice, NYC, NY; Sharon M. Cadiz, EdD, Women's Network Collective

Objectives: Objective: This pilot study explored the potential effects of ethnicity and socio-economics on geriatric women's access to oral healthcare and oral health status.

Methods: Method: 45 geriatric women attending the Women's Network Collective Conference in New York City consented to participate in this study. The participants included 10 Caucasians (group A), 2 Hispanics, 2 Native Americans, 1 Asian (group B), and 30 African-Americans (group C). Their age range was 65-81 years. The principal investigator examined participants in a private dental practice in Manhattan and compensated each with $20.00 and an oral hygiene kit. The examiner recorded education and income levels, frequency of dental visits, oral hygiene habits, and smoking history. Missing teeth, coronal/cervical caries and restorations, plaque index, gingivitis, bleeding-on-probing, calculus, periodontal pockets, tooth mobility, bruxism, and TMJ symptoms were also recorded. The socio-economic factors of the participants were compared with their ethnicity using chi-square analysis. Participants' oral heath indicators were compared with ethnicity using multiple regression.

Results: Results: No statistical difference was found in the socio-economic status of the three ethnic groups of this pilot study. There were, however, statistical differences noted in access to oral healthcare and in oral health status across the three groups.

Conclusions: Conclusions: 1) The importance of oral health care should be stressed to geriatric and ethnic populations, to include: annual dental visits, proper oral hygiene habits, and smoking cessation. 2) Further research is needed on larger geriatric populations across the USA.

31 Improving Seniors' Oral Health Through Community Collaboration and Research Partnerships

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Objectives: A long-term strategy has been undertaken to assess and improve seniors' oral health in Atlantic Canada, address the paucity of data on seniors' oral health, and increase the limited research capacity in oral epidemiology and population studies. Our objective is to describe this strategy and the progress to date.

Methods: A staged long-term plan was developed by building on a qualitative study of barriers to oral care in Nova Scotia and engaging with an established network of stakeholders. Key components of the strategy included workshops to disseminate knowledge and findings to community and research partners, a pilot survey of seniors' oral health status, and exchange with investigators in the Canadian Longitudinal Study on Aging.

Results: The pilot study demonstrated the feasibility of conducting a larger population based survey; workshops facilitated the development of consensus regarding research methodologies and community strategies; and, successful collaboration with key research partners and seniors' stakeholder organizations increased capacity for oral epidemiological research. Grants are being sought for next steps.

Conclusions: Engagement of key community and research partners at national, regional, and community levels has provided fundamental support for the long-term planning strategy. This strategy may be applied to assessment and intervention for other vulnerable populations.

32 Periodontal Disease is Associated with Decreased Kidney Funciton in NHANES III

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Objectives: To determine the association between decreased kidney function (DKF) and periodontal disease (PD).

Methods: 11879 adults 18+ years of age with information on kidney function and periodontal status were identified in the Third National Health and Nutrition Examination Survey. DKF was a glomerular filtration rate < 60ml/min per 1.73m2. PD was 1+ sites with both 4+mm attachment loss and bleeding. Diabetes status was defined as no diabetes, diabetes with good control (hemoglobin A1c <7), and diabetes with poor control (hemoglobin A1c >=7). High C-reactive protein (CRP) was > 3.0 mg/dL. The main outcome measure was the odds ratio and 95% confidence interval (OR; 95%CI) for the association between DKF and PD, adjusting for other potential explanatory variables. The ORs were estimated using univariable and multivariable logistic regression modeling, accounting for the complex survey design and sample weights.

Results: 301 adults (1.9%) had DKF, and 1355 (6.8%) had PD. In multivariable analysis, adults with PD were significantly more likely to have DKF (ORAdj=1.57; 1.04-2.37), while simultaneously adjusting for the following recognized explanatory factors: age, race/ethnicity, gender, hypertension, diabetes, CRP, macroalbuminuria, annual physician visit, income, and smoking.

Conclusions: PD was associated with DKF in US adults, after simultaneously adjusting for other recognized factors. Further longitudinal investigation will help assess whether PD is a risk factor for DKF. Research Support: NIH/NIDCR 5K08DE016031-03.

33 Health Literacy and Follow-Up Appointments for Dental Clinic Patients

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Objectives: It is estimated that 90 million American adults have difficulty understanding and acting upon health information due to low literacy. The purpose of this study is to investigate the association between health literacy and follow through on a dental health care sequence. This study examines both dental and medical health literacy constructs using a dental health literacy score (REALM-D), constructed by modifying the Rapid Estimate of Adult Literacy in Medicine (REALM) to incorporate 6 dental words at each of the three levels.

Methods: The study sample included 108 new patients from the Oral Diagnosis Clinic at the UCLA School of Dentistry. Almost 40% of the patients never returned after their first visit although they underwent a screening examination by a dentist, were informed about the types of dental services needed, and expressed interest in receiving care. To test for group differences between non-returnees and those who returned for care, non-parametric Mann-Whitney tests were conducted since health literacy scores computed for each difficulty level were not normally distributed.

Results: Among the non-returnees, 60% were non-Caucasian, and 61% completed at least one year of college. Non-returnees had significantly lower mean ranking for level 2 (p=.020) and level 3 (p=.028) dental literacy scores. For medical literacy scores findings illustrate significant group difference for level 3 only (p=.038).

Conclusions: Study patients who did not return for dental visits had less dental knowledge compared to patients who returned, suggesting that the modified REALM-D might be a more sensitive discriminating factor of oral health knowledge. More research is needed to better evaluate the new REALM-D construct. This study was supported by NIDCR R03-PAR-04-117.

34 Evaluation of Consumer Use of an Oral Health Web-Site

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Objectives: To conduct an on-line survey to assess consumer use of an oral helth web-site.

Methods: A survey was conducted to assess the population utilizing an oral health consumer website. The baseline survey included questions on demographics, and Internet use. Recruitment of survey subjects commenced in May, 2006 and terminated in January, 2007. 309 subjects completed the Internet usage survey. The recruitment sources included weekly e-mail messages to Aetna Intelihealth Dental participants, and a direct and prominently displayed link on the main web page of the Simple Steps for Dental Health.com site.

Results: 80% of respondents were previously self-registered to receive oral health electronic mails from a consumer oriented oral health web site (Simple Steps to Better Dental Health.com). 66.3% of the respondents were female. 72.5% were age 50 or older 71.3% were female. 78.6% have completed education beyond high school. 94% use the Internet daily, and this use is typically conducted from home (76.7%). 81.7% have used the Intelihealth web site for more than one year. They seek medical information frequently (95.1%), with lower numbers requesting dental information (54.7%). Although the majority of respondents already participate in an electronic mail update on dental health, only 33% expressed interest in receiving an online consultation or communication with a dentist. 14.1% of the respondents self-reported current tobacco use. 58.1% of this group has used the Internet to obtain information about quitting tobacco use.

Conclusions: The Internet is a growing resource for oral health care information by dental consumers. This survey established the demographics for a sample of users of this web-stie. Web-based interventions, including focused electronic messages can subsequently be targeted to consumers with specific health care needs and concerns.

Advances in Service-Learning and Professional Development

35 Pilot Study: Patient Response to Tobacco Cessation Information in the Dental School Clinic Setting

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Objectives: To determine dental school clinic patients' quit-tobacco needs and response to tobacco cessation information provided by student dentists.

Methods: Fourteen senior dental students volunteered to participate in a pilot study. Each student kept a log of all patients seen over a two-week period, invited patients who were self-reported tobacco users to participate in the study, administered an 18-item questionnaire to each patient participant, and provided each patient with quit-tobacco information as appropriate. Questionnaire items focused on the patient's readiness to quit, prior quit attempts, and preferences for quit-tobacco information. A follow-up questionnaire was administered by telephone one month later to determine the patient's response to information provided by the student dentist.

Results: 27% (46/172) of patients were self-reported tobacco users. 37% (17/46) of self-reported tobacco users participated in the study. Participants were 53% Caucasian and 47% African American, 59% male and 41% female, mean age 51±12 years. 75% (12/16) reported interest in quitting. 88% (14/16) had never tried to quit. Nearly half (8/17) had not heard of the Ohio Tobacco Quit Line, and most (14/17) were not aware of support groups in their area. The majority (13/17) were interested in receiving quit-tobacco information from their student dentist. Follow-up rate was 65% (11/17). At follow-up, nearly all patients (10/11) rated their student dentist as very knowledgable about strategies and resources for quitting.

Conclusions: The majority of dental school clinic patients in this pilot study were interested in quitting tobacco use. Many were not aware of resources to help them quit. Patient response to tobacco cessation information from student dentists was positive. Further studies with larger numbers of participants are needed.

36 Assessment of a Preventive Care Program for Developmentally Disabled Patients

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Objectives: Persons with developmental disabilities are at greater risk for oral diseases and access to care is a critical issue for special needs patients. This project measures the impact of preventive services provided to residents of the Willows Developmental Center, San Antonio, TX.

Methods: A retrospective chart audit was conducted from a sample of 32 residents who received care from the Department of Dental Hygiene, University of Texas Health Science Center at San Antonio (UTHSCSA) for three consecutive years. This educational program offers a screening, periodontal therapy, and referral. Study variables included demographics, DMFS, ambulatory status, diet consistency, periodontal health, dental home status, patient cooperation level, and number of dental visits and referrals.

Results: Over three years, the number of scaling procedures performed decreased by almost 50%. Limited scaling procedures followed a similar trend. Residents with a dental home increased from 12.5% to 78.1% over 3 years. An increase in the number of residents on textured diet (16-22%) compared to processed diet was noted. Referrals and completed referrals doubled over the three years. The number of patients diagnosed with severe periodontal disease and the number of decayed teeth increased while diagnoses of moderate periodontal disease decreased.

Conclusions: While providing a service-learning experience for students, this project led to better oral health status and facilitated partnerships enhancing access to care. Reported increase in disease may reflect an increase in access to care. As residents found a dental home, screenings were replaced with dental examinations resulting in better detection of disease. This observation is underscored by a decrease in preventive services needed for the patients.

37 Community Based Dental Education Program at University of Kentucky - a Preliminary Report

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Objectives: To describe the modification of the Community Based Dental Education Program (CBDEP) at the University of Kentucky (UoK).

Methods: Initiated in 1970, the UoK had the first outreach program of any dental school in the US. In 2006 the program was converted into a mandatory CBDEP for senior dental students. The CBDEP is constructed as a 6-credit, 4 consecutive week, required course (CDE 841).

Results: The first batch of 52 students underwent the CBDEP last summer. Didactic preparation, conceptual models and course goals are presented and coordinated with a didactic course where advanced concepts in dental public health are presented. The outreach centers include community health centers in rural KY (N = 17 centers), Lexington (n=15); rural practices serving a large number of the un-/ underinsured (N=7); and federal agencies (N=11). Students lean by active participation in patient care, practice management systems, and the health care delivery system. We encourage discussions with patients, staff, faculty, community residents, and health/school officials. Depending on the site, experiences may involve discipline-specific clinical competencies. The course director and preceptor(s) evaluate students using the usual letter grades based on projects, assignments, clinical treatment quality, knowledge, reflective learning assignment, and professional demeanor.

Conclusions: Successful establishment of the CBDEP at UoK will improve students' appreciation of community issues and problems, and improve and refine clinical skills resulting in a work-force better prepared to treat disadvantaged individuals, contributing to improve access to dental care for KY residents.

38 Improving Access to Underserved Populations: Community-Based Dental Education. The Boston University Experience

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Objectives: Community-based dental education programs such as externship programs have become an integral component of dental school education. These programs are also assumed to improve access to care to underserved populations. The current study investigates the clinical care (defined as dental procedures) provided to underserved populations by Boston University School of Dental Medicine (BUSDM) students who completed 10-week general dentistry externships.

Methods: In 2002, BUSDM received the Robert Wood Johnson Foundation (RWJF) funded Pipeline, Profession, and Practice: Community-Based Dental Education that expanded our longstanding general dentistry externship program to a 10-week program for all senior students. The majority of our externship sites are at community health centers. Other sites include VA hospitals, US Coast Guard facilities, and correctional institutions. As part of the RWJF funded program, BUSDM developed a custom designed interactive web based application to collect data on the clinical care or dental procedures performed by the students while on externship.

Results: Each year, our students (N=115) provide about 19,300 patient visits, and about 30,500 clinical procedures while on externship. The majority of services provided in the 10-week externship are oral examinations, intra-oral radiographs, prophylaxis, extractions, and 2-surface amalgams. The longer externships allowed for students to perform more complex procedures such as prosthodontic procedures toward the latter part of their externship.

Conclusions: Community based dental education enhance not only the educational experience of students, but also increase access to underserved populations. Further the longer 10-week externships increase access to advanced services like prosthodontic procedures.

39 Trends in Publication, Citations and Impact Factor of the Journal of Public Health Dentistry

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Objectives: To characterize trends in the *Journal of Public Health Dentistry* (JPHD) in the number of papers published annually, citations by other journals, *Journal Impact Factor* (JIF), and *Cited Half-Life*.

Methods: Data were from the Scientific Citation Index, *Journal Citation Report* (Institute for Scientific Information). Data for 1989–1998 were from print and microfiche records; 1999–2005 were from an online database. JIF was

the number of cites to articles published in *JPHD* in the preceding 2 years divided by the number of articles published in *JPHD* during that time. The Cited Half-Life for *JPHD* was the median age of its articles cited in a given year.

Results: The number of papers published per year in *JPHD* ranged from 25 to 56 in 1989–2005 (median=31) and exceeded 40 in 5 years, all of which included special issues. The number of citations to *JPHD* articles showed a positive linear trend during that time period (R-squared=.9252), increasing from 191 in 1989 to 649 in 2005. *JIF* showed no clear trend during the time period, ranging from 0.338 to 1.266 (median=0.767). *JPHD*'s percentile rank of *JIF* among dental journals also showed no clear trend, ranging from 4.0 to 81.8 (median=40.5). The Cited Half-Life of articles published in *JPHD* increased from 5.2 years in 1989 to 8.4 years in 2005 (R-squared=.8339).

Conclusions: The number of papers published in *JPHD* was relatively constant during 1989–2005, but citations by other publications and the half-life of published articles clearly increased. *JIF* may not be a stable or reliable measure for journals publishing a relatively small number of articles each year, and may not fully capture the impact of *JPHD* on its field.

40 Identify Resistances of Dental Clinicians in Knowledge Transfer of ICDAS-2

Jacques Véronneau, DMD, PhD, Cree Nation of James Bay Area, Department of Public Health

Objectives: To assess the resistance of clinicians and policy-makers in the adoption of evidence-based index in caries detection such the international caries detection and assessment system (ICDAS).

Methods: A grant for knowledge transfer of a new caries detection index (ICDAS-2) has been obtained by the Cree Department of Public Health in 2006 and their public health dentist became the first ICDAS trainer in Canada. He proposed, with evidence-based approach, to train dental hygienists involved in caries detection by the provincial school children dental public program, to train dentists of Cree territory and to train third year students of the faculty of dentistry of McGill University. Parallel to these proposals, a self-administered questionnaire with items on some practical aspects and potential resistances toward the new index was proposed and data collected.

Results: Four groups of interest were investigated – clinicians, policy makers, dental students and academic responsible – and five groups of resistance were identified 1- Perception of no additional benefit; 2- Longer detection; 3- No need to change; 4- Lack of control of their practices; 5- Diverse.

Conclusions: Evidence-based approaches to implement, hit often politic and practical resistances among professionals. This unique assessment in dental field provide basis to understand, to adapt and realize more effectively the relevant transfer.

41 Survey of Systemic Health Issues in Community Dental Clinics

Daniel Morris, BS, Community Dentistry, Case Western Reserve University; Catherine Demko, PhD, Community Dentistry, Case Western Reserve University

Objectives: To determine what behaviors and discussions around the oral-systemic health link are occurring in Federally Qualified Health Center (FQHC) dental clinics serving at-risk populations, including diabetes, cardiovascular disease, and preterm birth. We were also interested in the provision of oral cancer screening by dental care providers.

Methods: We identified 770 FQHCs with dental clinics from the US Department of Health and Human Services website. Clinics received a 66-item survey measuring providers' attitudes, knowledge and current behaviors regarding screening for oral and general health problems.

Results: 242 clinics (31%), from 46 states, responded to the survey. Clinics reported that on average 70% of patients were adults, 25% of visits were for emergency treatment and 53% for primary care. Dentists reported having positive attitudes concerning screening and educating patients about oral-systemic health links. However, deficiencies were found in dentists' knowledge of screening tools, pathology and access to patient education resources.

Conclusions: This research provides evidence that there is a desire among community health center dentists to screen and educate patients about oral-systemic health issues and oral cancer. These measures are critically important to the at-risk populations treated in these clinics. The major reported barriers to the services are provider knowledge and lack of educational materials.

Oral Health Assessment in Children and Adolescents

42 Self-Reported Smoking and Toothbrushing Among Finnish Adolescents

Sisko Honkala, DDS, PhD, Finnish Dental Society Apollonia, Finland; Eino Honkala, DDS, PhD, Institute of Dentistry, University of Turku, Finland; Lasse Pere, MSc, Tampere School of Public Health, University of Tampere, Finland; Arja Rimpelä, MD, PhD, Tampere School of Public Health, University of Tampere, Finland

Objectives: The aim of this study was to determine if there exists any association between frequent smoking and unfavorable toothbrushing habits among adolescents in Finland.

Methods: Nationally representative samples of 12-, 14-, 16- and 18-year-old Finns were drawn from the Central Population Registry. A total of 6,503 adolescents took part in the mail survey with structured questionnaire. The response rate was 66%. The chi-square test and a logistic regression model were used for analyses.

Results: At the age of 12 years 0.4% reported smoking daily, among 14 years 8.5%, 16 years 25.1% and 18 years 33.1%. A total of 14.2% of the adolescents reported brushing their teeth less than once a day, 45.6% once a day, and 40.2% more than once a day. Among 14-year-olds, 6.4% belonged to the risk group of smoking daily and not brushing according to the recommendation, among 16-year-olds 17.5% and among 18-year-olds 21.4%. Among boys, the strongest predictors for these unfavorable habits were the adolescent's low school performance (below average, OR 4.2 / average, 4.0) and father's low level of education (primary school only, 2.8). Low school performance (below average, 9.6 / average, 4.9) was also the strongest predictor among girls, followed by mother's low level of education (primary school, 2.6).

Conclusions: Frequent smoking and unfavourable toothbrushing seemed to be strongly associated. Both smoking cessation and good oral hygiene habits should be emphasized in oral health education of the adolescents.

43 Toothbrushing Frequency in Relation to Smoking Experimentations Among Adolescents in Finland

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Objectives: The aim of this study was to ascertain whether there is an association between smoking experimentations and unfavourable toothbrushing habits among 12- and 14-year-old adolescents in Finland.

Methods: Nationally representative samples of 12- and 14-year-old Finns were drawn from the Central Population Registry. A total of 4,403 adolescents took part in the survey, the response rate being 71%. A 12-page structured questionnaire was posted to the adolescents to be filled in and returned in the enclosed pre-paid envelope. The chi-square test and a logistic regression model were used for analyses.

Results: At the age of 12 years 14.2% of the respondents had tried smoking and among 14-year-olds, 34%. Altogether 16.2% of the adolescents reported brushing their teeth less than once a day, 46.6% once a day, and 37.1% more than once a day. One third (27.2%) of boys and one fifth (19.9%) of girls belonged to the risk group of brushing less than twice a day and had tried smoking. The strongest predictor was the adolescent's own school performance: among boys the risk (below average, OR 14.1 / average, 5.3), and among girls 9.0 and 4.1, respectively.

Conclusions: Quite a big proportion of adolescents belonged to a risk group with smoking experiences and unfavourable toothbrushing habits. Dentists should receive more education on smoking prevention, and they should have a broader view on health education in general.

44 Parental Perceived Needs of Oral Health Services

Carrie Janszen, RDH, M.Ed., Northern Kentucky Health Department; Keith A. King, PhD, CHES, University of Cincinnati; Rebecca A. Vidourek, M.Ed., University of Cincinnati; James Cecil, D.M.D., M.P.H., Kentucky Department for Public Health

Objectives: To examine parental perceptions of children's oral health behaviors, parent health behaviors and utilization of oral health services based on level of insurance including Medicaid, private insurance, and no insurance.

Methods: Northern Kentucky Health Department distributed surveys to 2nd and 6th graders in Northern Kentucky public schools via a school-based dental sealant program. A sample of 783 parents completed a two page survey assessing their child's oral health behaviors as well as access to care and level of insurance information. The survey consisted of the following items: overall child oral health, child oral health behaviors, overall parent oral health, parent health behaviors, level of insurance (i.e. Medicaid, private, none, etc.), and barriers to oral health care.

Results: More than one in three (33%) parents reported their child brushed his/her teeth daily. Almost 70% of parents did not know if their child flossed. Of parents, 60% reported their child last visited the dentist for a check-up. One in three (33%) parents reported their child was covered by private insurance, 24% by Medicaid, and 23% had no insurance coverage. More than 15% of parents reported there was a time their child needed dental care, but could not obtain services. Overall, 10% of parents reported it was the cost of dental services, which prevented their child from obtaining care.

Conclusions: Lack of insurance and cost of services are barriers to obtaining dental health services. Implications and recommendations for future research will be offered.

45 Barriers to Addressing Urgent Dental Care Needs of Appalachian Schoolchildren

Nikki Stone, DMD, College of Dentistry, UK Center for Rural Health; M.Raynor Mullins, DMD, MPH, College of Dentistry, University of Kentucky; Baretta Casey, MD, College of Medicine, UK Center for Rural Health

Objectives: Identify urgent care needs and insurance status of rural Appalachian children in 11 elementary schools in Perry County, Kentucky.

Methods: Need for urgent care (pain and/or infection) was appraised using the Kentucky Children's Oral Health Surveillance System protocols. Insurance status was determined via a phone system designed to schedule visits and assist with transportation implemented by the staff at the UK North Fork Valley Community Health Center (NFVCHC).

Results: Screenings have been completed at 7 schools. In these schools, 149 children (14%) had urgent care needs. This need is high compared to the 2001 state rate (4%). Report cards were sent home. After 3 phone attempts, only 55% of families were reached. Of those, 32% of families had no dental insurance. Reasons included being ineligible for Medicaid/KCHIP due to existing medical insurance or being slightly over qualifying income.

Conclusions: This pilot study found a high need for urgent care in schoolchildren in one rural Appalachian county and indicates substantial barriers, including a lack of dental insurance and difficulty reaching parents by phone, exist that will complicate case management of this population.

46 Oral Health Status of Third Grade Children in New York City

Kumar Gajapathi, BDS MPH, Bureau of Dental Health, NY State Dept. of Health; Herbert Kenigsberg, DDS, New York City Department of Health and Mental Hygiene; Jayanth Kumar, DDS MPH, Bureau of Dental Health, NY State Dept. of Health; Donna L Altshul, RDH, BS, Bureau of Dental Health, NY State Dept. of Health

Objectives: To assess progress toward Healthy People 2010 and Maternal and Child Health Block Grant (MCHBG) Performance measure, a survey of third grade school children in New York City was undertaken.

Methods: Data on caries experience, sealant prevalence, enamel fluorosis, dental visit, insurance coverage and several other indicators were obtained from 1,935 children attending 59 schools as part of oral health surveillance efforts. A questionnaire was used for gathering non-clinical data. Screenings were conducted by trained dental personnel. Data were recorded using Epi-Data. Analyses were performed using SAS and SUDAAN softwares.

Results: The prevalence of dental caries was 56% (SE 1.6) and 38% (SE 7.3) among lower and higher income groups respectively. Although 86% reportedly had dental insurance coverage and 65% visited a dentist, the prevalence of sealants was 12% (SE 1.3). Untreated caries was 40% (SE 1.3) and 26% (SE 6.3) among lower and higher income groups respectively. Enamel fluorosis was observed in 2% (SE 1). Among first permanent molars, 58% of all carious lesions occurred on the occlusal surface.

Conclusions: The results show that the use of sealants was well below the MCHBG performance measure of 50%. Despite the low use of sealants, children in New York City had lower caries experience compared to that of rest of New York State. School-based programs have the potential to increase sealant prevalence and reduce untreated disease.

47 Cost-Effectiveness Analysis of the Indices Used in Taiwan National Oral Health Surveillance System

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Objectives: Despite the widespread applications and academic advantages of the DMFT index, it might be impracticable in oral health surveillance for general population. The purpose of this study was to evaluate the cost-effectiveness of those indicators used in Taiwan National Oral Health Surveillance System (TNOHSS)

Methods: 720 third grade children and 110 adults from 10 primary schools took part in our study. Half of them received oral health examination with DMFT index and the other half with TNOHSS indicators by a local dentist and a dentist of TNOHSS separately. Standardization workshops were held for all the examiners. Time used in individual examination was measured and recorded. Information regarding the costs needed for the workshops, oral health examination exercises, and data analysis were also collected and analyzed.

Results: The average time needed to examine a school child and an adult with DMFT index were 107 and 80 seconds respectively, while it took 26 and 43 seconds respectively with TNOHSS indicators. It revealed that the cost for identifying one school children who needed dental care was US$1.4 for TNOHSS while for DMFT it cost US$7.7. The ratio was 1:5.5.

Conclusions: The TNOHSS indicators had shown to be simpler, swifter, and more economic than DMFT index, and were more suitable in population oral health surveillance activities. Nevertheless TNOHSS indicators are not designed to replace DMFT index, both of them should be complimentary to each other.

48 Is TMD a problem for elementary school age children?

Marita R. Inglehart, Dr. phil. habil., University of Michigan; Sven-Erik Widmalm, DDS, Dr. odont., University of Michigan & Dan Briskie, DDS Mott Children Health Center, Flint.

Objectives: The objectives of this study are (a) to assess whether children in Kindergarten and grades 1 through 5 in elementary schools report symptoms of TMD, (b) whether these children's self reported TMD symptoms are a function of the their gender, socio-economic status, and ethnic background, and (c) whether these symptoms persist over a one year period.

Methods: During the academic year 2004/05, face-to-face interview data concerning TMD symptoms were conducted with 3,871 children and during the academic year 2005/2006, interviews were conducted with 4,616 children. 1,041 children participated in both years.

Results: Over 20% of the children in each year reported to experience pain when they open their mouth wide, to hear a noise when they open and close their mouth, and / or to have pain on the side of their face when they chew on tough food. Girls were more likely to report these TMD symptoms than boys, and African American children were more likely to report these symptoms than white children. Students in schools with more than 50% of the children on free school lunches had higher rates of TMD symptoms than schools with fewer than 50% of the students on free school lunches. A comparison of the responses of the children who participated in the study in both years showed that approximately 60% of the children did not report any symptoms in either year. However, for each of the three indicators, about 5% to 6% of the

children reported these symptoms at both points in time. Approximately equal proportions of children reported to either have the three symptoms only in Year 1 or only in Year 2.

Conclusions: TMD is rarely studied in elementary school age children, and dentists rarely address this issue when conducting oral examinations. These data show that research on TMD in children is needed and that recommendations for treatment should be developed.

50 Oral Health Disparities in the Treatment Need and Demand in an Appalachian Population

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Objectives: There are significant oral health disparities affecting individuals in West Virginia and elsewhere in Appalachia. While oral diseases such as caries are a major problem, little is known about the occlusal status of this underserved group. The objective of this study therefore was designed to provide information about the orthodontic treatment need and demand of this group.

Methods: There were 58 young people (12-17) and 78 of their parents who were randomly selected from a list of active and inactive patients of a primary care medical center serving two rural West Virginia counties. An orthodontic examination was conducted as part of a larger study on oral health. Index of Treatment Need ratings were made by two orthodontists. Participants were interviewed regarding their demand for, and history of, orthodontic care.

Results: Parents were found to have severe problems with tooth loss with 19.2% being partially and 5.1% being completely edentulous. There were 59.6% of the children identified as needing orthodontic care but only 29.3% who have or are now receiving this treatment. The youth were similar to national norms (NHANES III) in terms of history and need, but lower in demand ($z = 1.88$, $p < .05$).

Conclusions: While there are generational differences in more history of orthodontic care, and less unmet need in these Appalachian youth, relative to their parents, less recognition of the necessity of treatment suggests possible future oral health problems and lower oral health quality of life. Issues of orthodontic access and utilization need to be addressed through public policy, and in the development of culturally-sensitive psychosocial methods of promoting oral health service utilization. The preparation of this poster was supported in part by NIH/NIDCR grant # R01-DE014899.

51 Association of Race/Ethnicity and Socioeconomics on the Prevalence of Orthodontic Visits Among Children in the United States

Christopher Okunseri, BDS, MSc, DDPHRCSE, Marquette University School of Dentistry; Nicholas M. Pajewski, BS; Emily L. McGinley, MS, MPH; Raymond G. Hoffmann, PhD, Medical College of Wisconsin

Objectives: To examine the prevalence of orthodontic dental visits among children and to investigate the effect of race/ethnicity and socioeconomic factors on the prevalence of pediatric orthodontic visits in the US.

Methods: We analyzed data from the Medical Expenditure Panel Survey, 1996-2004. Descriptive and multivariate analyses were performed to examine the effect of race/ethnicity and socioeconomic variables on the probability of having had at least one orthodontic dental visit during the year.

Results: Prevalence of orthodontic visits in children varied from 8.5% in 1998 to 10.1% in 2004. Multivariate analyses revealed significantly lower odds of orthodontic visit for Blacks and Hispanics in all years as compared to Whites. Children 12-18 years of age were 3 times more likely to have had an orthodontic dental visit than 4-11 year olds. Females, children with private insurance, and those from middle to high income families were also more likely to have had an orthodontic visit.

Conclusions: Substantial racial/ethnic disparities in having an orthodontic dental visit exist for African American and Latino children, as well as socioeconomic disparities for children from lower income families and those without insurance

52 Dental Examination Results of School-Age Children in Kindergarten, 2nd and 6th Grades in Illinois for 2005-06 School Year

Sangeeta Wadhawan, BDS, MPH, Illinois Department of Public Health, University of Illinois at Chicago; Julie A. Janssen, RDH, MA, CDHC, Illinois Department of Public Health

Objectives: To collect and analyze school dental examination data among K, 2 and 6 grade children in Illinois.

Methods: As mandated by Section 27-8.1 of the school code, all children in kindergarten, second and sixth grades in Illinois are required to have an oral health examination by May 15th of each year in compliance with the rules adopted by the Department of Public Health. In addition, school code requires all school districts submit completed surveys to the Illinois State Board of Education summarizing dental compliance by June 30th each year. This poster provides the analysis of the first year data from the dental examination in school year 2005-06.

Results: In the 2005-06 school year, the dental compliance level of all students in all reported schools was 80.3%. The compliance level of public schools was 78.8% and of non-public schools was 90.6%. A statewide total of 78,732 reported students (19.7%) of the total reported students were in noncompliance with dental examinations. The compliance level of Kindergarten was 85.3%, 2nd grade 81.5% and 6th grade 74.2% respectively. Compliance levels obtained for nonpublic schools were much higher than those for public schools by overall measure as well as by grade levels.

Conclusions: Collecting mandatory school dental examination data statewide is a viable method for assessing oral health disease burden and access issues around oral health among children. Furthermore it strengthens the Illinois Oral Health Surveillance System by providing an ongoing system of data collection and provides trends over time.

Program Evaluation and Policy

53 Oral Health Status of Kentucky Residents: A Mid-Course Evaluation Towards 2010 Objectives

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Objectives: This study aims to compare national Kentucky (KY) state-specific oral health status estimates as a mid-course review towards achieving the year 2010 oral health objectives. Historically, KY has been characterized by high poverty levels, low educational levels, and high health disparities. Oral health indicators for KY are not encouraging as documented by state/regional oral health surveys.

Methods: We examined national oral health surveillance system derived estimates from national surveys to obtain KY-specific estimates for various oral health indicators (1999-2004) and compared those with national estimates and the 2010 objectives. We statistically evaluated the null hypothesis that differences between national and KY average did not differ significantly by subtracting the national mean from the KY-mean and dividing the difference by the pooled standard error yielding a 'z' statistic based test.

Results: About 99.7% of KY had water fluoridation ranking 2nd highest in the US. KY ranked 24th in the US for adult dental visits (69.8% people with dental visit compared to national average: 69%). Some 38% of the elderly population was edentulous (national: 20.5%). Compared to other states, KY ranked high for teeth cleaning and dental sealants, but had greater caries experience and untreated caries among children. These patterns remained even in socio-demographic factor subgroup analysis. Most of these indicators improved from 1999 to 2004.

Conclusions: Despite major national emphasis in oral health improvement and better than national average annual dental visit proportion, the oral health of KY residents is poorer than the rest of the nation. Educated policy making and additional resources for program planning and implementation are required to improve the oral health status of KY residents.

54 Mandatory School Dental Examinations: Evaluating Policy Development and Implementation

Julie Ann Janssen, RDH, MA, CDHC; Sangeeta Wadhawan, BDS, MPH, Illinois Department of Public Health

Objectives: At the end of this presentation participants will be able to: list two critical components to successful policy development; articulate strategies to evaluate the policy implementation; and develop a plan for developing a similar policy in their jurisdiction.

Methods: The Illinois Oral Health Plan (2002) called for mandating school dental examinations as an opportunity for improving the oral health status of Illinois children. This presentation will report evaluation results after the first year of the mandatory school dental examination mandate and subsequent plans to implement program improvements that will address stakeholders needs.

Results: Data analysis will describe compliance with mandate reporting requirements. The mandate was established and implemented adequately and yet challenges associated with administering the requirement remain. The new requirement has provided a mechanism for tracking access to care in every school in the state that reports and provides important information about areas where dental access and utilization may be a problem. The oral health status of participating children was not captured in the first year. This lent additional policy development hurdles.

Conclusions: Ultimately, the mandate has expanded school-based oral health services and has become a useful tool in the armamentarium of oral health public health programs in Illinois. It can serve as a model for other jurisdictions.

55 Oral Health Planning Efforts in Illinois: Findings from a Statewide Evaluation

Karen E. Peters, DrPH, University of Illinois at Chicago, School of Public Health; Linda Kaste, DDS, PhD, University of Illinois at Chicago, College of Dentistry; William Baldyga, DrPH, University of Illinois at Chicago, Institute for Health Research and Policy

Objectives: To evaluate statewide efforts in the conduct of assessments and surveillance activities, infrastructure improvements, stakeholder mobilization and development of a state oral health plan.

Methods: The Illinois Department of Public Health, Division of Oral Health contracted with the Illinois Prevention Research Center to conduct a comprehensive evaluation of the statewide efforts involved in the planning and creation of the second State Oral Health Plan. The Centers for Disease Control and Prevention's (CDC) Framework for Program Evaluation in Public Health along with technical assistance provided by the CDC's Dental Public Health Program Infrastructure Development and Technical Assistance document were utilized in the evaluation planning efforts.

Results: The results are based on findings from a series of statewide Stakeholder Forums, a statewide oral health development and implementation survey and the input of oral health advocates in Illinois. Findings reveal that the Stakeholder Forums provided opportunities for participants to identify oral health priority areas, steps and action plans to address the priority areas and the ability to assign 'responsibility' for each priority. The survey results indicated the strong need for additional outreach to underserved populations with limited access to oral health service provision in the state and the need to identify 'baseline' indicators within the second Oral Health Plan

Conclusions: The evaluation of activities and documents has led to improved processes and outcomes in oral health in Illinois. In addition, the usefulness of a comprehensive evaluation of statewide oral health activities provides a 'roadmap' to guide similar initiatives in other states.

56 51 Ways to Improve Access to Oral Health and Dental Care

Frances M. Kim, DDS, MPH, Harvard School of Dental Medicine and Cambridge Health Alliance; Michelle A. Graham, DMD, MHSE, MPH, MS, Harvard School of Dental Medicine; Peggy Timothe, DDS, MPH, Harvard School of Dental Medicine; Chester W. Douglass, DMD, PhD

Objectives: To identify the three major strategies for improving access to dental care, identify different programs for improving demand for dental care, and develop public health programs that include the factors related to the supply of dental care.

Methods: Using the "Framework for Action" outlined in the U.S. Surgeon General's report on Oral Health in America, a model is presented that is able to include 51 strategies for reducing need, increasing demand and improving supply.

Results: Fifty-one programs and strategies are presented that public health professionals can use to improve access to oral health and dental services. By improving various components of the delivery system (SUPPLY) such as provider types and practice setting locations; increasing the ability to pay (DEMAND) such as targeting high risk groups with public and private dental insurance programs; increasing awareness of the importance of oral health (DEMAND) with public education campaigns; and employing numerous strategies for prevention (NEED) through the use of new technologies for early prevention and high risk group identification, access to oral health can be improved.

Conclusions: There are many ways to reduce the NEED, increase the DEMAND, and improve the SUPPLY for dental care. The appropriate combination of strategies in any community will depend on the population, economy, and health professional workforce in that community. Thus, there may not be a single best solution to the access problem. Public health programs should include strategies in all three areas- need, supply, and demand.

Student Merit Award Winners

57 Veterans with Mental Illnesses Report More Dental Problems than Veterans Without Mental Illness

Doron Ringler, DMD Boston University School of Dental Medicine, Michelle B. Orner, BA, MPH, VA Center for Health Quality, Carolyn J. Wehler, RDH, MPH, Boston University School of Dental Medicine, Judith A. Jones, DDS, MPH, DScD, Boston University School of Dental Medicine

Objective: An estimated 26.2 percent of Americans ages 18 and older suffer from mental disorders in a given year. The aim of our project is to assess the oral health status and need for dental care in veterans with mental illnesses, from both the clinical and the patient perspective.

Methods: The study is a secondary analysis of an existing study of oral health and quality of life in veterans. The sample consists of 513 users of the Veteran Affairs outpatient medical clinics. The primary outcomes of interest are summary and individual items in three OQOL questionnaires (GOHAI, OH -1, New Brief measure of OQOL). We describe clinical and self-reported oral health and need for care parameters as a function of the mental illness state.

Results: Compared with veterans without mental illnesses, veterans with mental illnesses reported more: limitations in kinds/amount of food eaten, trouble biting, trouble swallowing, limited contact with others, taking medication to relieve mouth pain, worry, being self-conscious and nervous because of problems with their teeth gums and dentures, being uncomfortable eating in front of others, avoiding going out, difficult to relax, and worse health of teeth and gums. However, we found that they have better retention and stability of their dentures, and didn't find differences in their need for any dental care.

Conclusions: Veterans with mental illness report of more problems and limitations attributed to their oral health. However, on clinical examination their dental care needs were not different than the group of veteran without mental illnesses. Further analysis is required in order to discern which, if any, of the different mental illnesses had more impacts, and to understand the differences between the clinical and self-reports of patients with and without mental illnesses.

58 The University of Texas Dental Branch-Houston Crest Healthy Smiles

Darryl C. Baucum, DDS, University of Texas Health Science Center; Kishone Skelty, DDS, MS, MRCS, University of Texas Health Science Center

The UTDB Houston branch of The American Student Dental Association participates in a community service project aimed at providing care to patients which reside in underserved parts of the community. A health fair is organized

at a local Boys and Girls Club where students, faculty and volunteers provide oral screening, oral hygiene instructions, preventative care and an assortment of crafts and entertainment for the children and parents that seek treatment. This year our project was able to serve over 100 children and parents with over 30 volunteers from our institution. The Dental Branch successfully organizes the Crest Healthy Smiles event annually in order to provide dental education and preventative treatment to children without access to consistent dental care.

59 Opinions of Early Head Start Staff about the Provision of Preventive Dental Services by Primary Medical Care Providers

Kavita R. Mathu-Muju, DMD, MPH, University of Kentucky, Leslie P. Zeldin MSUP, MPH, University of North Carolina, Jessica Y. Lee, DDS, MPH, PhD, University of North Carolina, R. Gary Rozier, DDS, MPH, University of North Carolina

This study investigates the opinions of Early Head Start (EHS) staff about physicians and nurses providing preventive dental services for children in EHS.

A cross-sectional survey was undertaken of EHS staff having contact with families in EHS programs in North Carolina (NC). A self-completed questionnaire solicited their opinions (agree, disagree, don't know) about whether physicians and nurses can "provide preventive dental care" and "identify dental problems" in infants and toddlers. Staff knowledge (4 items) and attitudes (5 items) were tested for their association with whether staff had an opinion (agree/disagree vs. don't know) and if so, what that opinion was (agree vs. disagree) using the General Estimating Equations method.

Questionnaires were completed by 476 staff (98% response) in 18 programs (100% response). Most staff believed that physicians and nurses can provide preventive dental services (66%) and identify dental problems (52%). Staff placing importance on ensuring access to dental care and knowledgeable about fluoride uses were more likely to have an opinion. Among staff with an opinion, those familiar with the NC program where these services are provided in medical offices were more likely to agree that physicians and nurses can provide preventive services (OR=2.39; 95% CI=1.10, 5.15) and identify problems (OR= 3.35; 95% CI=1.19, 9.43).

Opinions of most EHS staff would not be a barrier to primary medical care providers offering preventive dental care. Education of staff about this approach to the provision of preventive dental services is needed.

60 The Fluoride Knowledge In Parents of North Carolina School Children

Larry P. Myers DDS MPH, NC Oral Health Section, Rebecca S King DDS,MPH, NC Oral Health Section, R. Gary Rozier DDS, MPH, Dept. of Health Policy and Administration, School of Public Health, University of North Carolina at Chapel Hill

Objective: To determine fluoride (F) knowledge in parents of North Carolina (NC) school children and factors associated with that knowledge. We also explored whether potential exposure to F information during use of preventive dental services improves parents' knowledge and if its effects are modified by parents' literacy levels

Methods: The study is a secondary data analysis of information from questionnaires completed by parents in a cross-sectional dental survey conducted in 2003-04. A stratified, probability sample of classrooms (n=400) identified 7,577 students in grades K-12 of whom 5,957 participated (78.6% response). F knowledge was measured by 4 CSC-developed F knowledge questions. Possible F sources included supplements, mouthrinse at home or school, toothpaste, professional application, dental visits and fluoridated water. Associations were tested with bivariate and logistic regression analyses.

Results: 49.6%, 28.3% and 22.1% correctly answered 0,1, and 2-4 F questions, respectively. Parents of children who ever used F toothpaste, lived in a F community and had a recent dental visit were more likely to answer correctly 2-4 F questions. Parents of the most disadvantaged children had the least F knowledge. Literacy modified the effect of F information on knowledge.

Conclusions: NC parents have low F knowledge, particularly those with children having the greatest need for preventive services. Dental public health should ensure that educational programs include F information and accommodate the public's literacy skills.

61 Holding Up the Oral Health Safety Net: The Role of NHSC Dentists in North Carolina

Neel Bhatavadekar, B.D.S, M.S., Gary Rozier, D.D.S, M.P.H, School of Public Health, University of North Carolina at Chapel Hill, T.R.Konrad PhD, Cecil Sheps Center for Health Services Research, UNC-CH.

Objective: Access to oral health care among low income populations is a growing problem. The National Health Service Corps (NHSC) might increase the supply of dentists motivated to provide services for this population. To determine if North Carolina dentists who completed a service obligation with the NHSC in 1990-99 continued to provide care for underserved populations and if they differ from non-NHSC alumni primary care dentists who started practice in the state during that same period

Methods: All 19 NHSC alumni and 50 comparison dentists were surveyed by mail. NHSC alumni also responded to selected items in a telephone follow-up interview. The 2 groups were compared using difference of means tests and multivariate linear and logistic regression models.

Results: NHSC alumni were more likely to be African-American, work in "safety net practices" (84% vs. 23%), see more publicly insured patients (60% vs. 19%), and have lower incomes ($121K vs. $166K) than comparison dentists. Yet their job satisfaction was comparable to non-NHSC alumni dentists. Regression analyses suggested that current level of participation in public insurance programs and practice in safety net settings is affected by dentists' race, altruistic motivations and previous NHSC participation.

Conclusions: Targeted recruitment of African-American dentists and others wanting to work in underserved communities could amplify the effectiveness of the financial incentive of NHSC loan repayment and induce dentists to remain in "safety net" settings.

62 Assessment of Oral Health Care Needs Among Adult Day Care Participants

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Objective: To assess the oral health of adult day care participants and render basic oral health care instructions, incorporating accommodations for physical barriers to self-care for all participants.

Methods: Program was implemented in three stages: screening, instruction, and positive reinforcement. Dental hygiene students performed oral cancer screenings and a DMFT index on all participants. Participants were given individualized oral health care instruction and positive reinforcement by means of receiving prizes and a certificate of achievement.

Results: The subject population demonstrated an eagerness to participate in this project. The majority of participants were in need of oral health education and would benefit from further involvement with the dental hygiene students.

Conclusions: This project provided dental hygiene students with valuable experience in handling patients with developmental disabilities and establishing a rapport with challenging patients.