

2018 National Oral Health Conference April 16-18, Louisville, Kentucky

Poster Abstracts

(1) Developing Oral Health Rational Service Areas (RSAs) Using Medicaid Claims Data in New York State (NYS)

Presenting Author: Shen Wang, MPH, MPA, Research Associate, Center for Health Workforce Studies, University at Albany - SUNY

Objectives: The objective of this study was to develop oral health rational service areas (RSAs) based on commuting patterns of New York State Medicaid patients seeking care for general dentistry.

Methods: New York State Medicaid claims data from 2015 for nearly 2 million New Yorkers were used to develop RSAs. Social network analysis was used to analyze the relationship between zip codes of patients (1,598 unique zip codes) and zip codes of general dentists (691 unique zip codes). A set of relational matrices were developed with rows being patient zip codes and columns being provider zip codes using UCINET software. Initial analysis yielded 285 RSAs and which were reduced to 178 to follow current HRSA rules for developing dental shortage areas.

Results: RSAs in rural areas were larger and tended to be composed of more zip codes compared to those in urban areas. RSAs in upstate NY were also larger than in downstate NY, which indicated a longer travel distance for upstate Medicaid patients seeking oral health services. In New York City, RSAs were more localized and smaller than other regions, resulting from a larger supply of providers and accessibility to public transportation.

Conclusions: The number of oral health RSAs were fewer than primary care RSAs identified in a previous study. As a result, the size of oral health RSAs were larger than primary care RSAs and included more zip codes. The longer travel distance for Medicaid patients suggested their greater difficulties accessing oral health services than primary care services.

Source of Funding: None

(2) Determinants of Emergency Department Revisits for Non-Traumatic Dental Conditions in Massachusetts

Presenting Author: Ashwini Ranade, BDS, MPH, Doctoral Candidate, Graduate Research Assistant, Northeastern University

Objectives: To identify determinants of emergency department (ED) revisits, for non-traumatic dental conditions (NTDC) by adults in Massachusetts.

Methods: Massachusetts All Payer Claims Dataset is used for the study, which includes information on health coverage and services for MA residents. We used medical, dental and member eligibility files from 2012 through 2013 for analysis. Descriptive statistics were computed for patients who made a single NTDC ED visit, and for those who made repeat visits within 30 days of the index ED visit. The primary variables of interest were payer type, dental coverage, use of preventive dental service and dental follow-up after the index ED visit. Multilevel logistic regression was used to estimate odds of revisits in comparison to a single visit.

Results: Among those who made NTDC ED visits, 20.6% had a repeat visit, of which 72.7% made 2 visits, 15.9% had 3 visits, 11.9% had more than 3 visits, with a maximum of 8 revisits within 30 days of the index ED visit. Adults 26-35 years of age, enrolled in Medicaid or Medicare, having dental coverage and not receiving dental follow-up after the index visit had increased odds of revisits. Use of preventive dental service was not a significant predictor of revisits.

Conclusion: Patients experience consistent, systematic barriers in accessing appropriate, timely dental care. Implementing ED diversion programs, setting up referral processes by connecting patients to dental offices, community health centers can potentially reduce revisits. Strengthening dental coverage policies and payment is critical to improve access to dental care.

Source of Funding: Northeastern University Tier-1 grant funds were used to get access to Massachusetts All Payer Claims Data.

(3) Improving access and financing options for dental care for older adults

Presenting Author: Anubhuti Shukla, BDS, MHA, Dental Public Health Resident, Harvard School of Dental Medicine

Objective: The U.S. lacks a uniform public insurance system to cover dental services for individuals aged 65 years and older. There is an increased need and inadequate access to oral health services, among the older adult population. This white paper aims to seek the attention of policymakers and healthcare advocates to explore solutions that offer a more long-term approach, such as dental homes, rather than short-term approaches such as Missions of Mercy (MOM) programs for the older adult population.

Methods: An extensive literature search addressing this issue was conducted in collaboration with the Association of State and Territorial Dental Directors (ASTDD) Best Practices Committee and the ASTDD Dental Public Health Resources Committee. The Older American Act and the Seniors Have Eyes, Ears and Teeth Act are some new developments that we reviewed. The work and policies of several groups were also reviewed including: The Aging Services Network, the Administration on Aging, Aging and Dental Services, the DentaQuest Foundation and The Santa Fe Group.

Results: Optimal overall health cannot be achieved without good oral health. Lack of access to oral health services often results in expensive emergency department visits. A more analytical approach is required to resolve this situation as charitable programs and emergency department care will not suffice.

Conclusion: ASTDD fully supports efforts to provide a comprehensive dental benefit for older adults in publicly funded programs such as Medicare and Medicaid and the inclusion of dental benefits in all medical insurance plans.

Source of Funding: None

(4) The Evolution of a State-Based Dental Sealant Program in Oregon Within the Context of the State Health Transformation Process

Presenting Author: Laurie Johnson, DHSc, MA, RDH, School Oral Health Programs Coordinator, Oregon Health Authority

The 2007 Smile Survey of Oregon's first, second, and third graders revealed that in every major measurement, children's oral health had worsened since the last Oregon Smile Survey in 2002. There were more cavities, more cavities in permanent teeth, and a 49% increase in untreated cavities. There are two measures that improve oral health in a community - community water fluoridation and school dental sealant programs. In 2007, only 23% of Oregon's public water systems were optimally fluoridated and only three of Oregon's 36 counties had sealant programs. In response to the 2007 Smile Survey, the Oregon legislature tasked the Oregon Health Authority (OHA) with increasing the number of schools served by sealant programs. The OHA began to provide clinical services and trained local programs to provide services.

In 2014, dental care became incorporated into the services provided by the Coordinated Care Organizations. One incentivized dental metric was chosen - the provision of sealants for children 6 to 14 years old. This metric galvanized interest in serving schools. Senate Bill 660 required the OHA to create a certification process to ensure quality sealants were provided appropriately within the school setting. Oregon now has 22 certified sealant programs that serve 88% of the eligible elementary schools and 69% of the eligible middle schools. School sealant programs are now in all 36 of Oregon's 36 counties.

Source of Funding: Oregon Health Authority

(5) Dental Care Utilization and Disparities in Access to Dental Care Among Cancer Survivors in U.S.

Presenting Author: Lina Bahanan, BDS, Boston University Henry M. Goldman School of Dental Medicine

Objectives: This study aims to evaluate the association between cancer history and access to dental care.

Methods: We analyzed data of 10,109 subjects, aged 20-80 years from The National Health and Nutrition Examination Survey (NHANES) 2011-2014. The main predictor was self-reported past history of any type of cancer (yes/no). The outcome was having a dental visit in the last year (yes/no) with reasons for the visit and barriers if no visit. Covariates included gender, race, income, education, and marital status. Chi-square and multivariable logistic regression were conducted to evaluate the association of cancer history with dental care utilization. We used SAS survey procedures to account for complex sampling design.

Results: Cancer survivors were not more likely to have dental visits within the past year compared to controls (OR=0.95;95%CI:0.67-1.19). Both survivors and controls were more likely to have preventive than treatment visits (64% and 65% respectively p=0.68). The most common barrier to accessing dental care was cost (79% for both groups). Cancer survivors with at least a high school degree were significantly more likely to have any dental visit within a year compared to less educated survivors (OR=2.4; 95%CI:1.5-3.9). Survivors with higher SES were significantly more likely to have any dental visit within a year compared to those with lower SES (OR=6.3; 95%CI:3.5-11.6).

Conclusions: Cancer survivorship was not significantly associated with any dental visits (yearly, preventive/treatment). However, financial and educational disparities exist among cancer survivors. Further research is recommended to more comprehensively understand oral health disparities among cancer survivors.

Source of Funding: None

(6) Characteristics and Outcomes of Pediatric Inpatient Hospital Admissions Due to Dental Disease in the US

Presenting Author: Shipra Sharma, BDS, MPH, Student, Boston University Henry M Goldman School of Dental Medicine

Objectives: 1) To describe the characteristics of pediatric patients who were admitted to the hospital for dental treatment in US in 2012. 2) To identify the predictors of longer length of stay and higher charges associated with dental treatment.

Methods: Kid's Inpatient Database (KID) from Healthcare Cost and Utilization Project (HCUP) for 2012 was analyzed. We included 6265 children, aged 0-18 years and who were admitted with a primary dental diagnosis. Our outcome variables were length of stay and total charges. Covariates were age, race, number of chronic conditions, socioeconomic status and insurance type. All analyses were adjusted for complex sampling using SAS 9.4 survey procedures

Results: The hospital admissions among children for dental treatment is 0.13% that represented 8779 of all hospital admissions in the US. The five most common diagnoses were periodical abscess without sinus (16.59%), maxillary hypoplasia (14.58%), sialoadentitis (8.4%), mandibular hypoplasia (6.6%), and cellulitis and abscess of oral soft tissue(4.4%). The mean length of stay was 2 days (range: 0-90 days) and mean total cost paid were \$ 37,233 (range:\$102-\$760,724). Almost all admissions (97.9%) resulted in a routine discharge.

Conclusion: Significant resources are spent on children receiving dental treatment in hospital settings. Identifying factors associated with higher charges and longer length of stay will enable us to identify high risk population, and target them with an early prevention.

Source of Funding: None

(7) Barriers to Providing Dental Care for Individuals with Developmental Disabilities: A Survey of Michigan General Dental Practitioners

Presenting Author: Divesh Byrappagari, BDS, MSD, Asst. Professor / Director, University of Detroit Mercy School of Dentistry

Objective: The objective of this study is to understand the perception of Michigan general dental practitioners regarding barriers to providing care to individuals with developmental disabilities.

Methodology: A survey questionnaire was mailed to a random sample of 1250 Michigan general dental practitioners with an active license. The mail survey was followed by two postcard reminders with an URL to complete the survey online. The data were collected between December 2016 and February 2017. The online survey was administered using Qualtrics®.

Results: Analysis of the data show that most of the dentists who responded were 55 years and older (57%), did not accept Medicaid (62%), and indicated that they treated individuals with developmental disabilities (74%). Respondents who indicated that they currently do not treat these patients, identified fear of emergencies from medical problems (21%), inadequate training during dental school (15%) and having no interest in treating these patients (13%) as the top reasons for not providing care to individuals with developmental disabilities.

Conclusion: Dental providers in Michigan face several barriers to providing care to individuals with developmental disabilities. Addressing those barriers seems to be the key to encouraging general dental practitioners to provide care to individual with developmental disabilities.

Source of Funding: UDM School of Dentistry Faculty Research Grant

(8) Access to Oral Health Care Challenges for Children on the Texas-Mexico Border Participating in the Miles of Smiles-Laredo Program

Presenting Author: Magda de la Torre, RDH, MPH, Clinical Assistant Professor, The University of Texas Health Science Center at San Antonio, School of Dentistry

Objective: Miles of Smiles-Laredo Program (MOS) is a school-based oral health promotion program for at-risk children living in Webb County (Laredo), TX. Barriers encountered by the children in the MOS program include cultural and social processes that affect access to dental health care. This project examines factors that impact access to oral health care for children in South Texas.

Methods: Consent forms are provided to parents/guardians of students in kindergarten, first, second and third grades attending 48 elementary schools in Laredo and United Independent School District. Parents return the completed consent form. Forms include demographic information and questions about access to care and insurance. The information is entered into the SmilesMaker data entry system and analyzed using SPSS.

Results: In 2016-2017, 9,666 children were seen in the MOS program. The percentage of uninsured children participating in the MOS program was 18.1%. One in 5 children did not have public or private insurance. Approximately 10% of children were not able to see a dentist when they had a problem. The percentage of children needing sealants decreased from 68.6% in 2013-2014 to 30.9% in 2016-2017. Children seen by the MOS program has 22.8% untreated decay increasing from 17.6% from 2013-2014.

Conclusions: Early preventive dental visits improve oral health of children at high risk for dental caries. Parents face barriers to accessing care because of the lack of insurance and having a dental home. The MOS program may be seeing more children that do not access the oral health care system.

Source of Funding: This program is supported by a grant from HRSA (T12HP28886) Grants to States to Support Oral Health Workforce Activities at the University of Texas Health Science Center at San Antonio, School of Dentistry

(9) Hospital Emergency Department Visits For Non-Traumatic Oral Health Conditions

Presenting Author: Raj Khanna, MD, DMD, Chair, Marshall University Dentistry and Oral & Maxillofacial Surgery

Data shows that nationally for many low-income adults, emergency rooms are the first and last resort to obtain emergency care for preventable dental conditions. To date, the utilization and financial impact of dental-related trips to medical settings, such as emergency rooms and urgent care sites in the Huntington, West Virginia hospital systems catchment area has been undocumented. The purpose of this research was to provide a synopsis of dental visits to treat preventable dental conditions in a medical setting(s) within West Virginia. A study analysis was conducted in collaboration with Huntington area Emergency Room/Hospital Setting systems and the Marshall University School of Medicine, Department of Dentistry and Oral & Maxillofacial Surgery, Outpatient Dental Clinic. Marshall University (MU) School of Medicine's (SOM) Appalachian Clinical and Translational Sciences Institute (ACTSI) provided support for the research project by exploring the differences in dental care provided in the Emergency Room/Hospital Setting and the Outpatient Dental Clinic. ACTSI extracted and verified data for the project from the Marshall Health Data Warehouse.

The study found that a total of 7410 patients made 10,451 visits to the emergency room for non-traumatic dental condition and generated \$19,025,814 worth in hospital charges over a period of 7 years. Further, ER visits by uninsured patients were 4 times more likely and those by Medicaid insured 2 times more likely to be for dental problems than Medicare-insured patients.

Source of Funding: Claude Worthington Benedum Foundation

(10) Advocacy Training During Dental Education Positively Associated With Current Willingness to Advocate for Community Water Fluoridation Programs

Presenting Author: Vinodh Bhoopathi, BDS, MPH, DScD, Assistant Professor, Temple University Maurice H. Kornberg School of Dentistry

Background: Authors investigated if pediatric dentists' current willingness to advocate for Community Water Fluoridation (CWF) programs was associated with prior training in advocacy during dental education.

Methods: In 2016, a 22-item pilot tested online survey was sent to 5394 pediatric dentists members of the American Academy of Pediatric Dentistry. Descriptive analysis and a multiple adjusted logistic regression model was conducted.

Results: 3 in 4 respondents reported willingness to advocate for CWF programs. Dentists trained in public health advocacy during pediatric residency ($p=0.009$), or during both pre-doctoral education and pediatric residency ($p<0.0001$) were more likely to be willing to advocate for CWF compared to their counterparts. Additionally, dentists accepting new Medicaid-insured children ($p=0.02$), practicing primarily in rural ($p=0.001$) and urban inner city areas ($p=0.04$), were significantly more willing to advocate for CWF compared to their counterparts.

Conclusions: A majority of the responding pediatric dentists reported willingness to advocate for CWF. Prior advocacy training in advocacy was a strong indicator for pediatric dentists' current willingness to advocate for CWF.

Source of Funding: This project was funded by Temple University Maurice H. Kornberg School of Dentistry

(11) Focus Group Evaluation of Nutrition and Oral Health Knowledge and Attitudes in an HIV/AIDS-Affected Population

Presenting Author: Megan Cloidt, DDS-MPH Candidate, Student Dentist, Columbia University College of Dental Medicine

Objectives: This research aims to qualitatively evaluate the knowledge and attitudes regarding nutrition, oral health, and tooth loss in a population at a Homeless FQHC that primarily serves People Living With or at risk for HIV/AIDS (PLWHA). The initial evaluation shaped an educational intervention to augment the population's knowledge and improve their confidence in shaping the future of their oral health.

Methods: Two focus groups were conducted at the Harlem United Adult Day Health Care (HUADHC) program in New York City. Each focus group included 15 participants (total N = 30) who were regularly engaged in a Nutrition and Group Meals program at HUADHC. Focus group topics included foods/drinks that cause decay and tooth loss, behaviors that influence oral health, and issues with chewing with partial or complete edentulism. Focus group recordings were transcribed, coded, and analyzed.

Results: While focus group participants possessed general topical knowledge, their oral health and educational needs and interests mapped to several key themes: food/drinks that are beneficial versus harmful to oral health; causation of caries and periodontal disease; food modifications for chewing difficulty; types of dental prosthetics; and oral hygiene techniques. An educational intervention focused on these themes in the form of small group discussions with visual handouts was created and delivered to the participants.

Conclusions: The focus group participants were engaged, generally knowledgeable about oral health and nutrition, and strongly interested in improving their oral health status. Future research should involve expanded educational interventions for PLWHA and prevention of early edentulism.

Source of Funding: Columbia University, College of Dental Medicine, Section of Population Health. This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number D85HP20031 "Predoctoral Training in General, Pediatric, and Public Health Dentistry and Dental Hygiene" for the amount of \$1,695,472. None of this endeavor is financed by nongovernmental sources. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

(12) Evaluating Use of Text Messages on Parental Perceived Self-Efficacy and Knowledge of Early Childhood Caries Post-Mysmilebuddy Intervention and Assessing their Attitudes Towards Receiving Oral Health Messaging Via Text

Presenting Author: Francine Zhou, DDS-MPH Candidate, Student Dentist, Columbia University College of Dental Medicine

Objective: The goals are to (1) determine if parents felt more confident in caring for their children's teeth, (2) assess if parents gained more knowledge of early childhood caries and (3) gauge parental attitudes toward receiving oral health messages through text.

Methods: Personalized text messages were selected to serve as cues to action and to match self-defined goals and actions plans created by parents. A mixed-methods approach was used. Pre-surveys and post-surveys with Likert scale questions regarding knowledge and self-efficacy were administered to parents. Questionnaire responses were averaged and compiled into summative subscores. Parental attitudes toward text messages about oral health were obtained through an open-ended comment section in the post-survey questionnaire.

Results: Parental perceived self-efficacy and knowledge increased in preliminary post-survey analysis. Post-survey responses showed higher perceived self-efficacy regarding brushing child's teeth, changing diet and preventing decay. Increase in parental knowledge regarding ECC as a preventive disease, mother-child vertical transmission and role of diet in ECC were also observed. Over 60% of participants who completed the open-ended comment section of the post-survey questionnaire had a positive attitude towards receiving oral health messages via text.

Text messages served as reminders, a source of advice, and engaged spouses, children and friends. Information from text messages were described as helpful. Paired t-tests will be conducted for further comparative analysis.

Conclusion: Personalized text messages as cues to action had a positive effect on parental perceived self-efficacy and knowledge. Most parents had a positive attitude towards receiving oral health messages via text.

Source of Funding: Columbia University, College of Dental Medicine, Section of Population Health. This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number D85HP20031 "Predoctoral Training in General, Pediatric, and Public Health Dentistry and Dental Hygiene" for the amount of \$1,695,472. None of this endeavor is financed by nongovernmental sources. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

(14) 'Healthy Teeth. Healthy Baby': Minnesota's Legislative Commitment to Prevent Early Dental Disease

Presenting Author: Prasida Khanal, MPH BDS (foreign-trained dentist), State Oral Health Director, Minnesota Department of Health

The Minnesota's Early Dental Disease Prevention Initiative (EDDPI) became an official legislation in 2015. EDDPI is a community-centered initiative based on the notion that prevention of early dental disease starts prenatally and is most effective in the first three years of life. EDDPI educates pregnant women, along with parents and caregivers of infants and toddlers, on early dental disease prevention. EDDPI has developed appropriate educational materials to deliver its five key messages.

Oral hygiene kits are provided as an incentive to motivate caregivers. EDDPI encourages non-dental workforce to provide early and culturally competent anticipatory guidance based on a simple standard of pediatric oral health care; risk assessment, anticipatory guidance, fluoride varnish application and referral to a dental home. This approach is essential, especially for low-income children who most often have barriers in accessing dental care. A health care provider's well-baby visit can help fill the gap when there is no access to a dental home. The goal is connection of each infant or young child to a dental home that can provide continuous access to appropriate preventive, routine and restorative dental care. Professionals, both dental and non-dental, need to begin to understand the importance of achieving and maintaining good oral health as an integral part of total health in order to address the emerging oral health crisis. To prepare for these changes, dentists and the medical providers will need to know how to best serve their multi-ethnic patients using appropriate literacy tools and practice applying their knowledge in the community.

Source of Funding: State funding

(15) Educating Families about ECC Primary Prevention through Video Storytelling

Presenting Author: Tamarinda Barry Figueroa, DDS. MPH candidate 2018, Columbia University Mailman School of Public Health, Pediatric Primary Care MPH Fellow for Underserved Populations, Columbia University College of Dental Medicine

Community health workers (CHWs) trained to (1) raise Early Childhood Caries (ECC) awareness for at-risk families, (2) provide education and counseling, (3) assist families in goal setting and action planning, and (4) facilitate families' success adopting preventative strategies successfully convey critical oral health messages to the socially vulnerable, minority, and often-immigrant families they serve.

Peer storytelling by CHWs demonstrates creativity, collaboration, and cultural understanding useful in the translation of complex caries science to low-literacy parents. The dissemination of ECC initiation, risk, progression, and prevention education through peer storytelling via virtual video counseling may impact more families than can be met with individually.

Objectives: To evaluate educational videotape success in increasing parental awareness, knowledge, and skill as pertains to early childhood oral health and ECC primary prevention.

Methods: Two videos (English and Spanish) validated for effectiveness in raising awareness about early childhood oral health and ECC primary prevention were disseminated electronically to the parents of children presenting to Columbia University College of Dental Medicine Pediatric Dental Clinic for a routine dental hygiene visit. Parents completed pre- and post-video surveys to gauge changes in dental health literacy, including attitudes and awareness of caries risks and specific preventative actions.

Results: Overall, parents reported learning something new about ECC risk, eating habits and tooth brushing to prevent caries, and CHWs. Parents would recommend peer storytelling videos to other parents/caregivers.

Conclusions: This study suggests a potential benefit in using peer storytelling videos to facilitate ECC primary prevention awareness, knowledge, and skills by participating parents.

Source of Funding: Columbia University, College of Dental Medicine, Section of Population Health. This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number D88HP20109 "Postdoctoral Training in General, Pediatric, and Public Health Dentistry and Dental Hygiene" for the amount of \$3,742,998. None of this endeavor is financed by nongovernmental sources. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

(16) Collaboration + Relationship Building: Cornerstones of Dental Sealant Program Expansion

Presenting Author: Clare Larkin, RDH MEd, Prevention Coordinator, Minnesota Department of Health Oral Health Program

Objectives: Describe Relationship Building and Collaboration Describe Successful Expansion of Sealant Program Efforts Resulting from Relationship Building

Methods: To meet State Oral Health Plan goals, the Minnesota Department of Health Oral Health Program (MDH) used gap analysis to identify relationship-building opportunities to support development of a state-wide coordinated school sealant program.

School-readiness - A 'school-readiness toolkit' will be developed in partnership with an existing sealant program serving one high need, minority population school.

School-linked Program - A metropolitan community clinic serving predominantly Native Americans engages U of M School of Dentistry students who integrate dental education/clinical practice and training. Through trust-building, a plan is moving forward between MDH and the clinic to establish a school-linked sealant program.

Sealant Data - MDH built a strong relationship with an experienced school sealant program around data collection and reporting. The new collaboration will provide sealant data from a geographical area of interest to MDH, allowing for increased accuracy in identifying Minnesota's sealant rates.

Community Health Worker Oral Health Curriculum - MDH is building a relationship with Minnesota Community Health Worker programs' education leaders and oral health professionals to develop additional oral health topics to supplement the existing CHW certificate oral health curriculum.

Results: Four formal contracts focused on new oral health initiatives have been developed.

Conclusions: Incremental relationship building between the MDH Oral Health Program and its partners shows progress toward a state-wide coordinated school sealant program. The strong relationships formed underpin collaborative efforts and demonstrate movement of each program toward success.

Source of Funding: Centers for Disease Control and Prevention, State Oral Disease Prevention Program: DP13-1307. Health Resources and Services Administration, Grants to States to Support Oral Health Workforce Activities: T12HP30311. Delta Dental of Minnesota Foundation.

(17) Using CBPR Methods to Develop and Implement a Comprehensive Oral Health Intervention Targeting Korean Older Adults, their Family Caregivers and Social Service Providers

Presenting Author: Cathy Lee, DDS-MPH Student, Columbia College of Dental Medicine

Background: Findings from our previous work suggest that Korean older adults experience numerous barriers to seeking care and maintaining oral health, including oral health literacy, language, and family dynamics.

Objectives: To work with Korean older adults, a community advisory committee and the Korean Community Services of Metropolitan New York (KCS), to develop a comprehensive oral health educational intervention targeting Korean older adults, their families and their communities.

Methods: CBPR methods using qualitative data were used to inform development and content of oral health educational materials and training guides for Korean older adults, their family caregivers and KCS staff. Key-informant interviews (n=4) and focus groups (2 groups with 15 participants each) were used to guide content, modifications, and method of delivery. Pre- and post-surveys and informant interviews/focus groups were used to evaluate perceived utility, acceptability and effectiveness.

Results: Pre- and post-implementation data suggest an increase in oral health-related knowledge among KCS staff post training. Feedback from key-informants, the Community Advisory group, and focus groups suggested that the intervention was relevant, acceptable, and had utility, because “materials targeting the Korean community were not previously accessible or useful”.

Conclusion: KCS printed and distributed 1000 educational booklets to seniors and family caregivers through its various programs. Participatory methods that seek to engage community can result in the development of appropriate interventions that are acceptable and of utility to the target population. The potential for sustainability is high. Additional research is needed to assess long-term impact on oral health outcomes.

Source of Funding: Population Oral Health Department, Columbia College of Dental Medicine|FAP Global Health Program, Columbia College of Physicians and Surgeons

(18) The American Dental Association: Making Strides Toward Advancing the Use of Health Literacy Principles within the Association and by the Dental Profession

Presenting Author: Sharon Clough, RDH, MEd, Manager, Preventive Health Activities, American Dental Association

The American Dental Association (ADA) recognizes that limited health literacy is a potential barrier to effective prevention, diagnosis and treatment of oral disease. It results in lower dental knowledge, fewer dental visits, poorer oral health status, and reduced oral health-related quality of life. The ADA engages in activities to increase awareness about health literacy and its role in providing patient-centered, quality dental care. The ADA Health Literacy in Dentistry Plan 2016-2020 provides guidance with this endeavor.

Objectives include: 1) providing educational opportunities for dental professionals, students and ADA staff and 2) producing health literate patient educational materials.

Methods: To increase staff knowledge about health literacy and encourage collaboration between departments, ADA offers training opportunities for key staff and they meet quarterly to discuss progress in addressing health literacy goals. To keep dental professionals and students informed, ADA hosts CE courses on health literacy, sponsors an annual Health Literacy Essay Contest for Dental Students and maintains an ADA.org health literacy webpage.

Outcomes: ADA is in the process of testing usability of patient brochure content and making changes to brochures as needed. Other departments are assessing informational materials for readability. Health literacy CE courses are well attended. The website has approximately 6000 visits a year.

Conclusion: Increasing staff knowledge/awareness about health literacy through training and departmental collaboration boosted efforts by ADA to begin assessing and producing health literate patient brochures. Based on the well-attended CE courses and interest in the Health literacy website, ADA should continue to offer these educational opportunities.

Source of Funding: None

(19) Implementing Data-Driven Decision Making When Building Oral Health Resources for Seniors: An Overview of the Revision Process for the New Toothwisdom.org

Presenting Author: Jessica Meister, BA, MA, Web Coordinator, Oral Health America

Older adults (individuals above the age of 65) increasingly are using the internet and other modern technologies like tablet and mobile devices in their daily lives. One of the primary reasons seniors access the internet is to improve their own health literacy, which includes their knowledge of oral health and its relationship to aging. It is critical that oral health organizations interested in serving the older adult population are able to keep pace with the growing percentage of technologically savvy seniors by providing usable tools and educational resources that improve access to care and oral health literacy. In this session, attendees will learn about the evaluation and planning process undertaken by Oral Health America (OHA) throughout its revision process for the recently relaunched toothwisdom.org, a website serving both seniors and their caregivers by teaching about oral health in aging and connecting individuals with affordable dental clinics in their area. This session will not only summarize the best practices and standards when building health resources for seniors, but will also provide guidelines on how to conduct evaluations that prove the tools are meeting the needs of the population(s) you serve, not only on paper but in real life situations.

Source of Funding: GlaxoSmithKline (GSK) USA

(20) A Community-Based Interprofessional Approach to Access to Denture Care for Disadvantaged Populations

Presenting Author: Jill Mason, MPH RDH EPP, Associate Professor, Oregon Health & Science University

Objective: The primary objective of this project is to develop an interprofessional community partnership to create an ongoing, sustainable method for providing access to denture care for disadvantaged populations.

Methods: The Oregon Health & Science University School of Dentistry collaborated with the School of Nursing Interprofessional Care Access Network community program. The I-CAN receives referrals through community agencies, and provides client assessment by an interprofessional team, including dental, medicine, pharmacy, and nursing providers.

The assessment includes health evaluations and review of social determinants of health that may affect the ability to access health care. Referral from the assessment team to a local dental clinic is initiated, and the clinic collaborates with Kaiser Permanente Dental Lab, which donates denture fabrication. The I-CAN supports clients throughout the process, providing assistance with barriers to care including but not limited to transportation, appointment reminders, and liaison with the dental clinic.

Results: The study has enrolled 15 clients to establish a system and protocols for identification of clients critically in need of dentures, establish referral parameters for care, and develop guidelines, processes, and support systems for clients to successfully access and complete care. Established communication channels, protocols and evaluation methods have been demonstrated effective, and will be presented. Ten clients have completed care. Remaining care, and final analysis will be completed by January 2018.

Conclusions: Mid-study analysis indicates that an interprofessional process with identification, referral, clinical care, and support for barriers to care can successfully achieve the objective of improving health outcomes for disadvantaged populations.

Source of Funding: Kaiser Permanente Northwest Community Benefit Program Portland, OR

(21) Interprofessional Oral Health Education Improves Knowledge, Confidence, and Practice for Pediatric Healthcare Providers

Presenting Author: JungSoo Kim, BS, DDS Candidate 2019, UCSF School of Dentistry

Objectives: To increase the pipeline of healthcare providers in serving the oral health needs for children in vulnerable and underserved communities, the University of California, San Francisco established an interdisciplinary children's oral health educational and clinical program. Students' improvement in children's oral health knowledge, confidence, attitude and practice behavior is evaluated.

Method: Thirty-one nurse practitioner, osteopathic medical, and dental students participated in a 10-week course on children's oral health. The course was evaluated via 4 questionnaires that were completed before and after the course: (1) course content knowledge, (2) confidence, (3) attitudes, and (4) clinical practice. Students were followed one year after completion of the program to evaluate their employment, practice setting, and time spent in oral health assessment.

Results: There was statistically significant improvement in students' overall knowledge of children's oral health topics ($p=.005$), confidence in their ability to provide oral health services ($p<.001$), and clinical practice ($p=.005$). There was an increase in students' positive attitudes about oral health, although not statistically significant. Final results from the students' one-year follow-up questionnaire will be summarized by April 2018.

Conclusion: An interprofessional children's oral health education can improve nursing, osteopathic medical and dental students' knowledge, confidence, and practice toward children's oral health. All healthcare providers can play an important role in providing oral health care to children, and such education can help future healthcare providers to incorporate children's oral health care into their practice.

Source of Funding: U. S. Health Resources and Services Administration (HRSA) Grant No. D85HP28498

(22) Readiness for Interprofessional Education (IPE) Among Third-Year Dental Students at Columbia University College Of Dental Medicine (CDM)

Presenting Author: Christina Nunez, DDS-MPH Candidate, 2020, Columbia University College of Dental Medicine and Mailman School of Public Health

Objectives: Collaborative and patient-centered practices are recognized as foundational for comprehensive, quality care. Despite a call from the Surgeon General and Council on Dental Education to incorporate IPE into curricula, recent studies show little has changed in IPE for dental students. This study assesses student readiness and attitudes toward IPE at CDM.

Methods: Data from an institution-specific online survey contained the validated Readiness for Interprofessional Learning Scale (RIPLS), including subscales of teamwork and collaboration, as well as professional identity. The survey included additional questions on demographics, and attitudes and expectations regarding IPE.

Results: Survey data were obtained from sixty-two of eighty third-year dental students. Descriptive data will be presented for student demographics and RIPLS and its subscales. Item correlations and Cronbach's alphas will be examined within RIPLS, and associations will be tested between RIPLS measures and demographics. CDM RIPLS scores will be compared to RIPLS scores reported in the literature for other health profession's student populations. Additional analyses will report students' comparative readiness for collaboration with different health professions, including physicians, nurses, social workers and others. The findings and their implications for IPE in dental education will be discussed.

Conclusion: Given the goal of improving patient outcomes and preparing students to work in the collaborative healthcare environment of the twenty-first century, schools should consider integrating IPE across the curriculum to enhance reception. More research is needed to build evidence regarding IPE readiness and the impact of IPE. Readiness data should be used to inform the details of IPE curriculum design.

Source of Funding: Columbia University, College of Dental Medicine, Section of Population Health. This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number D88HP20109 "Faculty Development in General, Pediatric, and Public Health Dentistry and Dental Hygiene" for the amount of \$2,500,000. None of this endeavor is financed by nongovernmental sources. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

(23) Hands-on Experiences and the Impact on Pediatricians' Comfort in Providing Early Preventive Oral Health Care

Presenting Author: Amanda Phan, Dental Student, University Of Iowa College of Dentistry

Objectives: Lack of oral health knowledge is a significant barrier for medical professionals to provide oral health-related services. To increase future pediatricians' clinical oral health experiences, the University of Iowa Departments of Pediatric Dentistry and Pediatric Medicine established a rotation for first-year Pediatric Medicine Residents at the University of Iowa Infant Oral Health Program (IOHP) located at the Women, Infant, and Children (WIC) Clinic in Iowa City, IA. The purpose of this study is to assess the changes in knowledge, comfort, and behaviors before and after the IOHP rotation.

Methods: A 12-item questionnaire was sent to first-year pediatric medicine residents before and after rotating. This questionnaire will be distributed again at the end of each academic year throughout their residency, and once a year for two years after graduation. Following the collection of all surveys, changes in knowledge, comfort, and behaviors between before and after the IOHP rotations will be compared using Wilcoxon signed-rank test, McNemar's test, and Bowker's test ($\alpha=0.05$).

Results: Currently, four subjects (response rate=40%) have completed pre and post-rotation surveys. Subjects did not receive uniform instruction on oral/dental health in medical school, but had higher comfort levels in the following areas after rotating: knee-to knee position, inspecting teeth for cavities, providing oral hygiene instructions, performing caries risk assessments, identifying a child that is high risk for cavities, and applying fluoride varnish.

Conclusions: The first year review demonstrates there is an increase in residents' comfort levels in clinical oral health experience when comparing pre and immediate post-rotation surveys.

Source of Funding: None

(24) Maternal and Child Caries Risk Assessment: Results from an Interprofessional Oral Health Program in the Bronx

Presenting Author: Parth Shah, DDS, MPH, DENTAL PUBLIC HEALTH RESIDENT, JACOBI MEDICAL CENTER, BRONX, NY

Background: Oral health risk assessment in the pediatric primary care setting is a convenient and valuable way to gain information about a child's risk for caries, especially for underserved populations. The objectives of this study were to: (1) assess the prevalence of dental caries experience in a convenience sample of low-income children in the Bronx, NY, and (2) determine the existence of any association between maternal caries risk factors and child's caries experience.

Methods: We performed a retrospective review of oral health risk assessment data collected in the pediatric medicine clinic at Jacobi Medical Center from 01/2016 to 03/2017. The Oral Health Risk Assessment Tool developed by the American Academy of Pediatrics was used for caries risk assessment. SAS University edition was utilized for the statistical analysis.

Results: The study population was comprised of 645 children between the ages of three months and 17 years. Active decay in the past year was reported by 44.8% of children's mothers or primary caregivers. Prevalence of white spots, obvious decay, and presence of restorations in their children were 25.6%, 23.6%, and 15.9% respectively. Children of mothers or primary caregivers who did not have a regular source of dental care and/or who had active decay in the past 12 months had higher odds (OR 1.75, 95% CI: 1.19-2.54) of experiencing dental caries, $p=0.004$.

Conclusions: This study highlights the impact posed by mother's oral health on child's risk of experiencing caries. Incorporating oral health risk assessments in adult and pediatric primary care is strongly recommended.

Source of Funding: This project is supported by the Health Resources and Services Administration (HRSA) grant number D88HP28502.

(25) Interprofessional Education in Dental Schools: Results of a National Survey

Presenting Author: Tien Jiang, DMD, MEd, Instructor, Oral Health Policy and Epidemiology, Harvard School of Dental Medicine

Interprofessional education (IPE), although not a new concept, is currently one of the hottest topics in dental education. The momentum behind IPE has not only resulted in education standards but also innovative programs in health professional schools. This is because proper interprofessional care should optimize patient outcomes.

Objective: To investigate the current level of IPE in U.S. dental education

Method: An 18-question survey was sent to all U.S. dental schools (N=68). This study was part of a HRSA-funded grant with a focus on the integration of oral health in primary care training.

Results: Twenty-nine schools responded, for a response rate of 43%. Ninety-seven percent reported engaging in IPE. Medical (90%), pharmacy (76%), and nursing (62%) students were the most common learners to have participated. Seventy-nine percent of schools had faculty teaching in other health professional schools, while 93% had faculty from other health professions teaching in their curriculum. However, while the majority of dental leaders reported engagement in IPE, fewer strongly agreed that they were satisfied with the level of preparation (8%) and competence (0%) of students in IPE by graduation.

Conclusions: These results show that, while IPE is widely prevalent, involvement is not enough. Educators must be challenged to take the next step and ensure IPE translates into behavioral change because when students become practitioners, the true value of IPE lies in improved patient care.

Source of Funding: HRSA AU-PCTE Grant Number UH1HP29962

(26) Implementation of an Adolescent Risk Behavior Questionnaire in an Academic Dental Setting

Presenting Author: Scott Tomar, DMD, MPH, DrPH, Interim Department Chair, University of Florida, College of Dentistry

Introduction: Adolescents commonly engage in behaviors/activities that can have negative consequences for their oral and/or general health. In addition, some medicines used to treat oral conditions interact with alcohol or drugs (prescription, over-the-counter, or recreational). It is important for dental professionals to have information regarding the patient's substance use and other risk behaviors in order to provide the best care to adolescent patients.

Methods: The use of a medical questionnaire addressed towards adolescent patients has been implemented at the University of Florida Pediatric Dental Clinic. The questionnaire is based on the AAPD Guidelines and contains confidential information. The goal is to obtain accurate, comprehensive, and current medical and social information which are necessary for correct diagnosis and effective treatment planning.

Results: The adolescent questionnaire has been administered by the pediatric dental faculty as a trial period. Any matters related to the clinical practice of the patient's confidentiality, the use of motivational interviewing techniques and time management during the appointment will be addressed. The aim is to have the questionnaire implemented as a regular part of dental examinations in the pediatric dental clinic.

Conclusions: Completion of the risk behavior questionnaire has provided an opportunity for teenagers to become more comfortable speaking alone with a healthcare provider. The goal is to begin the transition from the pediatric to adult model, and assist patients in taking personal responsibility for their health. In addition, this will help the pediatric dentist in providing a thorough approach towards the adolescents in the clinical setting.

Source of Funding: None

(27) Qualitative Study Involving Providers To Improve Oral Health Of Pregnant Women

Presenting Author: Deepa Pishey, BDS, MPH, DPH, Graduate

Background: Many pregnant women may not receive dental services during this time because of barriers like providers' attitudes, misconceptions, lack of knowledge among both providers and pregnant women about the importance of oral health care during pregnancy which can result in serious consequences to both mother and the child. Therefore, a discussion between providers from different disciplines is essential for standard, improved guidelines and recommendations and would greatly benefit the providers to improve oral health care for pregnant women.

Objectives: A. To discuss the importance of oral health care for pregnant women with a group of health care providers. B. To obtain feedback about an oral health care toolkit/manual and also oral health education magnets developed by the Project Director and team.

Methods: A focus group was conducted with health care providers who provided care to pregnant women including those from Obstetrics /Gynecology, Pediatrics, Dental, Nursing, Midwifery and support staff (health educators, social workers). The discussion was audio/video recorded. After transcribing the discussion, qualitative data analysis was done using grounded theory.

Results: The participants identified major themes that impacted oral care from both the patients' as well as the providers' perspectives which included nervousness, misconceptions, and limited knowledge about oral health care.

Conclusions: The discussion helped to identify and find ways to overcome the barriers to oral health care for pregnant women. Feedback about the manual and magnets helped to develop educational materials that will be disseminated with a unified message for all providers providing care to pregnant women.

Source of Funding: Source of Funding: Healthy Baby Network, Rochester, NY

(28) Building Understanding of the Oral Health of Hospitalized Patients: Comparing University of Chicago Medicine (UCM) Survey Respondents and National Health and Nutrition Examination Survey (NHANES) Respondents

Presenting Author: Thomas Best, PhD, University of Chicago

Objectives: There is little research on the oral health of hospitalized patients. We compare responses to oral health questions from hospitalized patients at a major urban academic medical center to responses from participants in the nationally-representative NHANES.

Methods: Between July 2015 and June 2017, we interviewed 1,885 adult UCM inpatients about their oral health using questions from NHANES. We compare their responses to four groups of NHANES responses from 2009 to 2016: all (G1), all with a recent hospitalization (G2), and subsamples of recently-hospitalized (G3) and not-recently-hospitalized (G4) respondents matched to the UCM inpatients using data on self-reported general overall health, age, race/ethnicity, and health insurance coverage.

Results: UCM inpatients reported worse overall oral health than the full NHANES sample and all those recently hospitalized: 45% rate their overall oral health as "fair" or "poor" vs. 25% of G1 and 34% of G2 ($p < 0.001$). The matched NHANES subsamples reported similar overall oral health to UCM inpatients: 43% of G3 ($p = 0.164$) and 44% of G4 ($p = 0.342$). However, UCM inpatients reported significantly worse oral health than the matched subsamples in multiple specific dimensions of oral health, including gum disease prevalence, oral aching frequency, and frequency of embarrassment about their mouth.

Conclusion: "Fair" or "poor" overall oral health was more commonly reported among UCM inpatients and matched NHANES respondents than among broader NHANES samples. UCM inpatients reported worse specific dimensions of oral health than matched NHANES respondents. Further research is needed on the oral health of hospitalized patients represented by the UCM sample.

Source of Funding: George E. Richmond Foundation

(29) Survey Assessment of Attitudes, Beliefs, and Knowledge of Nutrition, Oral Health, and Edentulism Among Attendees of an Adult Day Care Program for Persons at Risk of/Living With HIV/AIDS

Presenting Author: Grace Zhou, DDS-MPH Candidate, Student Dentist, Columbia University College of Dental Medicine

Objective: To assess the attitudes, beliefs and knowledge of nutrition, oral health, and edentulism among attendees of a New York City adult day health care program, Harlem United, which serves persons at-risk of or living with HIV/AIDS to inform a focus group guide and future intervention.

Methods: A survey containing questions on demographics, and attitudes and knowledge regarding nutrition, oral health, and edentulism were administered to Harlem United clients. The resulting quantitative and qualitative data were analyzed using SPSS version 24.

Results: Survey findings revealed a need for education on factors affecting oral health, consequences of tooth loss, and healthful diets. In addition, a substantial proportion of those wearing partial or complete dentures expressed dissatisfaction with their appliances. Those with missing teeth tended to choose to chew on the side with remaining teeth rather than use food modification methods. These findings were used to develop a focus group guide to further investigate these themes, which in turn led to the development of an educational intervention program focused on nutrition, oral health, and edentulism for Harlem United clients.

Conclusions: A survey-based needs assessment was an effective first step in evaluating the educational needs of Harlem United adult day health care program clients and informing the development of a tailored focus group guide and educational intervention.

Source of Funding: Columbia University, College of Dental Medicine, Section of Population Health. This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number D85HP20031 “Predoctoral Training in General, Pediatric, and Public Health Dentistry and Dental Hygiene” for the amount of \$1,695,472. None of this endeavor is financed by nongovernmental sources. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

(30) Beyond ECC: Lessons from Dental Caries Management Collaborative for 6-20 Year Old Children

Presenting Author: Natalia Chalmers, DDS PhD, Director, Analytics and Publication, DentaQuest Institute

Objectives: Currently, dental care models for children rely on surgical interventions, but do not address underlying factors affecting disease etiology. Considering the chronicity of dental caries, a care model emphasizing chronic disease management is necessary. The Dental Caries Management (DCM) Collaborative developed and tested a chronic disease management protocol for children. The objective of this study was to identify specific factors of the quality improvement initiative associated with improved outcomes.

Methods: Over an 18-month period, practices participated in learning sessions and received expert feedback and coaching focused on testing the protocol. Thirteen practices contributed monthly data (2015-2016) for patients ages 6-20. Protocol engagement was evaluated and the primary outcomes measured were changes in patient risk status and incidence of new caries lesions. Quality improvement data were analyzed with Shewart charts.

Results: Participating practices varied in size (mean=1,852 patients), region and location. Practices included private practices, academic and health centers. Most practices at least partially met protocol expectations. Reductions were shown in new caries lesions in high-risk patients and increased proportions of patients with decreased risk, however, maintaining patients’ low-risk status remained challenging. Practices with full protocol engagement performed better on outcome measures than sites with only partial engagement.

Conclusions: The DCM Collaborative improved patient-centered outcomes (reductions in caries risk and new caries lesions) in a variety of clinical settings. Strong leadership support and systems integration assured protocol engagement and post-collaborative continuous improvement. Quality improvement initiatives present unique challenges and opportunities in different clinical environments.

Source of Funding: None

(31) Comparative Evaluation of Listerine Zero® and Chlorhexidine Mouthwash in Maintaining the Soft Tissue Health around Dental Implants: a Randomized Clinical Trial

Presenting Author: Bader AlZarea, Dean, College of Dentistry, Aljouf University, Saudi Arabia

Abstract Objective: To evaluate the efficacy of Listerine Zero® in comparison with chlorhexidine mouthwash in maintaining the soft tissue health around dental implants.

Material and Methods: In this randomized prospective clinical study, 62 participants (33 males, 29 females) with peri-implant mucositis were consecutively enrolled. After oral hygiene reinforcement and mechanical debridement, the subjects were randomly allocated to Listerine Zero® group (20 ml Listerine Zero® mouth wash to be rinsed used twice a day for half a minute) and chlorhexidine group (0.12% chlorhexidine digluconate to be rinsed twice for 1 min). The duration of this study was 12 weeks. Plaque index (PI), Probing pocket depth (PD), Bleeding on probing (BOP), Probing attachment level (PAL), teeth and tongue stains were assessed.

Results: At the end of 12 weeks, the Listerine Zero® group had statistically significant reductions in plaque index, and gingival bleeding compared to the chlorhexidine group. Chlorhexidine proved to be more effective than Listerine Zero® in terms of improving the probing depth and attachment level. No significant difference in the teeth stain and tongue stains between the groups was observed.

Conclusion: Routine oral hygiene supplemented with twice daily rinse of Listerine Zero® for 30 seconds is effective in minimising plaque formation and marginal peri-implant bleeding.

Source of Funding: None

(32) Parents' Perceptions and Acceptance of Silver Diamine Fluoride among Patients with Special Needs

Presenting Author: Neelam Jadeja, BDS, MPH, AEGD Resident, Nova Southeastern University College of Dental Medicine

Objectives: The study aims to assess perception and acceptance of parents of patients with special needs about using silver diamine fluoride (SDF) according to location of caries, patient's behavior, and demographic factors.

Methods: It is a cross-sectional study involving a convenient sample of 133 parents/legal guardians of patients with special needs at NSU Special Needs Clinic. Participants complete a self-administered questionnaire comprising of questions regarding parents' demographics, patient's past behavior when undergoing dental treatment, perceptions of photographs of SDF-treated carious teeth, and acceptability of treatment in different behavior management scenarios. Data analysis includes descriptive statistics including frequency distributions, means and standard deviations of demographic

parameters and survey responses as well as T tests and/or chi-squares and multivariate analyses to evaluate the statistical significance of all pair wise (gender, age group, race/ethnicity) comparisons.

Results: The study is ongoing and 32 participants have completed the survey to date. Preliminary results show that 55% of the parents find SDF to be acceptable in posterior teeth and 25% in anterior teeth. The parents' level of acceptance increases as the patient's behavioral barriers increase. In presence of behavioral barriers, more than 70% of the parents/guardians would choose SDF for posterior teeth and 35% for anterior teeth. Final results will be available at NOHC.

Conclusions: SDF is an inexpensive, easy to apply, minimally invasive, and effective device to prevent and arrest caries. Insights about the perception and acceptance of SDF therapy in this group of patients are important when considering this innovative approach to caries management.

Source of Funding: None

(33) The Impact of Dental Caries on the Oral Health-Related Quality of Life in Children

Presenting Author: Christa Hirleman, D.M.D. Temple University, Dental Public Health Resident / Army Dental Officer, Univeristy of Iowa College of Dentistry, Preventive Department

Objectives: The purpose of this study was to explore the level to which dental caries impacts the oral health-related quality of life (OHRQoL) in a sample of Amish children. A secondary objective was to determine the influence of socio-demographic factors on parental perceptions of children's oral health status and OHRQoL.

Methods: This cross-sectional study was embedded within a pilot study of medical management of caries in the primary dentition using silver nitrate. Parents were asked to complete a baseline questionnaire which included questions regarding socio-demographics and child behavior, as well as an OHRQoL questionnaire- a 16-item Parent Perception Questionnaire (PPQ). Parents were also asked to make a global rating of their child's oral health status and its impact on the child's overall wellbeing. Oral examinations were completed by two previously trained and calibrated pediatric dentists for the assessment of dental caries experience. Descriptive and bivariate analyses were performed including the Spearman Correlation and Wilcoxon rank sum test. Multiple linear regression was used to model covariate effects on the OHRQoL outcome measures.

Results: 77 children were analyzed. OHRQoL was negatively impacted by caries as per the Oral Domain of the PPQ ($p < .02$) and the global oral health status rating ($p < 0.0001$). There was no significant difference between males and females in the OHRQoL outcome measures ($p > 0.05$).

Conclusions: According to parents' perceptions, a higher caries experience was associated with a poorer oral health status rating and had a negative impact on oral symptoms as they related to the OHRQoL of the children.

Source of Funding: Delta Dental of Iowa Foundation. Research reported was supported by the National Center for Advancing Translational Sciences of the National Institutes of Health under Award Number U54TR001356.

(34) Success Rates of Stainless Steel Crowns vs. Class II Composite Restorations in Primary 1st Molars in High Caries Risk Children

Presenting Author: Hilary Habel, DDS, Pediatric Dental Resident, UIC Pediatric Dentistry

Objective: To determine the difference in success rates of class II composite restorations compared to stainless steel crowns in primary first molars over 3 years in a public health clinic.

Methods: The electronic charts of patients treated at the University of Illinois at Chicago pediatric dentistry residency program from 2013 to 2017 were analyzed. The inclusion criteria were: patients who were 3 to 6 years of age at the time of a comprehensive dental evaluation, who had initial and follow-up radiographs available, and who had class II composite or stainless steel crowns (SSC's) placed on primary first molars with caries up to 2mm into dentin. The restorations were evaluated using the provider's progress notes and radiographs when available at 12, 18, 24 and 36 months post-treatment. All treatment failures and time of failure were recorded. Chi-square analysis ($p \leq 0.05$) was performed to determine the difference in the success rates of the two materials.

Results: There were 1702 charts available for analysis, with 151 SSC's and 154 composite restorations. The mean decayed, missing, filled teeth score was 8.9 (± 2.9 SD). Success rates were not statistically significant at 12 months (SSC's 98% vs. composites 94.8%), 18 months (SSC's 93.3% vs. composites 88.3%), 24 months (SSC's 87% vs. composites 81.4%), 30 months (SSC's 81% and composites 76.8%) and 36 months (SSC's 72% and composites 58.7%).

Conclusion: SSC's and composites are both clinically acceptable restorative materials for primary 1st molars for a period of 36 months.

Source of Funding: None

(36) Might National or State Economic/Policy Status be Reflected in the Patient Populations Receiving Complete Denture Procedures at a Public Dental School?

Presenting Author: Linda Kaste, DDS, MS, PhD, Professor, University of Illinois at Chicago College of Dentistry

Objectives: To assess whether the national economic recession (2008-2009) and the Illinois SMART Act (2012-2014) that dropped comprehensive adult dental Medicaid impacted patient characteristics receiving treatment at a public dental school. This analysis appraises patient characteristics for reception of maxillary and mandibular complete denture procedures by Fiscal Year (FY) 2008 to FY2015 for further study hypotheses generation.

Methods: An ecological dataset was created for maxillary (D5110) and mandibular (D5120) complete denture procedures by FY2008-FY2015 (7/1/2007-6/30/2015). The dataset contains counts and percentage distributions for age groups, sex, race/ethnicity, Chicago residency, and "self-pay" payment. Poisson regressions examined differences in counts by FY for this analysis.

Results: With FY2015 as referent, for the “Total” population characteristics (n=4108), statistically significant differences ($p < .05$) from FY2015 found for counts included: males FY2008, FY2010, FY2014; females FY2008-FY2011, FY2013; African Americans in FY2010-FY2014; Caucasians FY2008; 21-44yo FY2011-FY2012; 45-64yo FY2008; 65+yo FY2008-FY2014; and Chicago residence FY2008, FY2010-FY2014. For “Self-pay” counts (n=2528) differences from FY2015 included: males FY2008-2012; females FY2008-2012, FY2014; African Americans FY2008-2012; Caucasians FY2011, FY2014; 21-44yo FY2012, 45-64yo FY2008-FY2012, FY2014; 65+yo FY2008-FY2012; Chicago residence FY2008-FY2012; and non-Chicago residence FY2008-FY2011, FY2013-FY2014.

Conclusions: Across FY2008-FY2015, variations exist in patient characteristics among those receiving complete dentures at a public dental school maintaining similar numbers of procedures per year. The patterns suggest hypotheses for further studies including whether these impacts are due to deliberate anticipation of limited resources, more access availability due to fewer patients seeking care during, and competition for space due to more patients seeking care following population-level fiscal situations.

Source of Funding: None

2016 AAPHD Small Grant Recipient

(37) Acceptability of Silver Diamine Fluoride by Children Aged 7-16 years and by their Caregivers in a Dental School Setting

Presenting Author: Mithila Patki, DDS MHA, Dentist, Temple University Kornberg School of Dentistry

Background: Silver Diamine Fluoride (SDF) is highly efficient in arresting and reversing dental caries. However, the black discoloration of the carious lesion after application of SDF might limit its acceptability. In this study we evaluated: 1) the proportion of caregivers who accept their children can receive SDF as a caries preventive measure, and 2) the demographic differences in the levels of acceptability of SDF, should their children be offered SDF as a treatment option.

Methods: A validated survey instrument was used in this cross-sectional study. The sample consisted of 50 caregivers and 51 children. Subjects were presented with an audio-video session on five dental caries preventive measures (tooth brushing techniques, fluoride varnish, fluoride gels, sealants and SDF). Acceptability was measured through 5-point scale ranging from 1 through 5, with 1 indicating a high acceptability. Means, standard deviations, frequencies, and percentages were run as part of descriptive statistics. Student t-test and Kruskal Wallis test was used to identify the demographic differences in acceptability levels of SDF. We utilized SAS 9.3 version to conduct all data analyses.

Results: Every 3 in 5 caregiver reported accepting SDF as a caries preventive measure for their child. The overall mean acceptability score was 2.2 ± 1.6 . The mean acceptability score did not differ by caregiver’s gender ($p=0.8$), relationship ($p=0.9$), education ($p=0.9$), and income ($p=0.4$).

Conclusions: A majority of the caregivers accept that their children can receive SDF as a caries preventive measure. No demographic differences in acceptability scores were observed.

Source of Funding: AAPHD Small Grant program funded project

(38) Analyzing the Basis for Streptococcus Sobrinus Prevalence in American Indian Children

Presenting Author: Flora Yen, Dental Student, University of Iowa College of Dentistry

Objectives: Severe-early childhood caries is a highly prevalent infectious disease in American Indian (AI) children. *Streptococcus mutans* (SM) and *Streptococcus sobrinus* (SS) are key etiological agents of dental caries. Studies suggest that SS are typically of low prevalence. However, when SS are present together with SM caries rates tend to be highest. We found SS to be of unusually high prevalence in a Northern Plains AI population. This study analyzed the acid tolerance and sensitivity to oxidative stress of SM and SS strains from this population to better understand the basis for this high prevalence.

Methods: Unique genotypes of SM (n=20) and SS (n=9) were selected to determine survival rates following exposure to low pH or hydrogen peroxide treatment. Post-treatment viable counts were determined on BHI agar. Spearman's rank correlation was used to assess the relationships between acid tolerance and oxidative stress to previously determined Prevalence, Susceptibility, and Inhibition profiles.

Results: Significant negative correlations were found between Acid Sensitivity and Prevalence Profile for SM ($r=-0.57$; $p=0.0081$), and between Oxidative Sensitivity and Susceptibility Profile for SM ($r=-0.49$; $p=0.0280$). A significant positive correlation existed between Acid Sensitivity and Inhibition Profile for SS ($r=0.71$; $p=0.0310$).

Conclusions: The strongest correlation revealed that more acid tolerant SS genotypes had higher inhibitory characteristics towards SM. This may be one mechanism whereby SS maintain a presence under conditions typically associated with high levels of SM. Finding a means to interfere with the colonization of SM and SS is imperative for reducing caries risk in this AI population.

Source of Funding: Iowa Dental Research Grant and NIH grant 1-R01 DE017736-01A5

(39) The First Comprehensive Dental Adverse Event Inventory

Presenting Author: Joo Hyun June Lee, B.A., Research Assistant, UCSF School of Dentistry

Objectives: Adverse events (AEs) are instances of harm caused to the patient during care. The purpose of this study was to develop a comprehensive inventory of dental AEs. Such an inventory can be used to classify AEs and determine methods to minimize such events, as well as standardize terms and conversations about dental AEs.

Methods: We defined and compiled an inventory of dental AE examples using sources that gave both "known" and "hypothetical" examples. Sources that give known AE examples include focused chart reviews, literature reviews, a risk management database, and the FDA MAUDE database; sources that hypothesize the presence of an AE include domain expert interviews and focus groups.

Results: 1096 total adverse event examples were classified. After removing duplicates, 111 unique Allergy/Toxicity/Foreign Body response, 69 Aspiration/Ingestion of Foreign Body, 73 Infection, 41 WSPP, 24 Bleeding, 50 Pain, 161 Hard Tissue Damage, 135 Soft Tissue Damage, 92 Nerve Injury, 149 Other Systemic Complication, 188 Other Orofacial Complication, and 3 Other Harm examples were found.

Both “known” and “hypothetical” sources were successful at picking up adverse event examples across all AE types. However, “known” sources most frequently picked up AE examples within “Allergy/Toxicity/Foreign Body response”, while “hypothetical” sources were more successful at picking up examples from “Other Orofacial Complication” AE types.

Conclusions: The first comprehensive dental AE inventory has been created for dental professionals to recognize adverse events that may occur in the dental office.

Source of Funding: National Institute of Health (NIH), National Institute of Dental & Craniofacial Research (NIDCR)Project #5R01DE022628-03Application #8774898

(40) Concomitant Use of Cigarettes, E-Cigarettes and Adolescents’ Oral Health: Findings from the 2013-2014 Wave of the Population Assessment of Tobacco and Health (PATH) Study

Presenting Author: Aderonke Akinkugbe, BDS, MPH, PhD, Assistant Professor, Virginia Commonwealth University, School of Dentistry

Objectives: Adolescents are a population group that actively use tobacco products but limited reports are available on its effects on their oral health. This study investigated associations between self-reported use of cigarettes and e-cigarettes on the oral health of a representative sample of U.S. adolescents.

Methods: Data came from 13,650 adolescents ages 12-17 years, who participated in the 2013-2014 wave of the Population Assessment of Tobacco and Health study. Participants self-reported current and ever use of cigarettes and e-cigarettes as well as provider diagnosis with a dental problem in the past year. Survey-adjusted logistic regression estimated odds ratios (OR) and 95% C.I. of the proposed association, adjusting for socio-demographics and outcome risk factors.

Results: The proportion who currently use only cigarettes and e-cigarettes were 3.16% and 1.73% respectively while 6.31% and 3.60% respectively, reported ever use. Similarly, 1.39% reported current use of both cigarettes and e-cigarettes while 7.08% reported ever use of both. About 22% self-reported a provider diagnosis of a dental problem within the past year. The adjusted association between current cigarette and e-cigarette use with diagnosed dental problems in the past year were respectively 1.50 (1.18, 1.90) and 1.11 (0.79, 1.55), while self-reported current use of both, was associated with OR (95% CI) =1.72 (1.24, 2.38).

Conclusions: Cigarette smoking and use of both e-cigarettes and cigarettes appears associated with poor oral health outcomes among adolescents, while use of e-cigarettes alone was not. More studies are needed on the effects of tobacco products on adolescents’ oral health.

Source of Funding: None

(41) Dental Flossing Pattern and Associated Factors Among U.S. Population

Presenting Author: Munder Ben-Omran, BDS, MS, GradC PH, Post-doctoral Trainee, Columbia University, College of Dental Medicine

Objectives: To (1) document dental flossing behavior in the U.S population; and (2) examine the association between flossing frequency and clinical and self-perceived periodontal status.

Methods: This cross-sectional study used NHANES data (2013/2014). Inclusion criteria: age 30 years and above, at least two adjacent teeth; response to flossing item. Bivariate and multivariate analyses were conducted controlling for sociodemographic, medical conditions (arthritis/diabetes/depression), physical and cognitive function, health-related behaviors (alcohol, tobacco use), and utilization of dental services. Outcomes included objective and subjective measures of oral periodontitis.

Results: 64.4 % of adult Americans floss their teeth at least once a week, and 31.8 % floss daily. Flossing was significantly positively associated ($P < 0.005$) with being female (OR = 1.79), married (OR = 1.6), income (OR = 1.79), education (OR = 1.9), dental utilization (OR = 2.60), and negatively associated with arthritis (OR = 0.83), cognitive function (OR = 0.65) and physical function (OR = 0.61). Flossing was positively associated with both subjective and objective measures of periodontitis ($P < 0.005$).

Conclusion: This research has identified enabling and predisposing factors associated with flossing among US adults, which may be taken into account when designing oral health promotion/disease prevention programs. While there was a positive and significant association between flossing and periodontitis, future studies are needed to assess the longitudinal impact of flossing on adults' periodontal health.

Source of Funding: Columbia University, College of Dental Medicine, Section of Population Health. This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number D88HP20109 "Postdoctoral Training in General, Pediatric, and Public Health Dentistry and Dental Hygiene" for the amount of \$3,742,998. None of this endeavor is financed by nongovernmental sources. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

(42) Data Visualization of the Relationship between Smoking and Periodontal Site-Specific Effects Across the Lifespan in the US Adult Population

Presenting Author: Monisha Billings, DDS, MPH, PhD, DPH Resident, NIDCR/NIH

Objectives: To use data visualization techniques to ascertain periodontal site-specific effects of smoking in the US.

Methods: Data from 10,713 dentate participants in NHANES 2009-2014 aged ≥ 30 y were used. Pocket depth (PD) and attachment loss (CAL) for 6 sites/tooth (maximum of 168 sites) were ascertained by smoking status and plotted using contour maps to elicit the identification of new patterns. The relationship of these parameters with age was also mapped.

Results: In the overall sample, 19% were current smokers and 56% were never-smokers. Contour maps of overall showed teeth/sites most affected with mean $PD > 2.1$ mm were molars (2,3,15,18,19,30,31) in mesio-lingual (ML) and disto-lingual (DL) sites. Most affected sites for current smokers were interproximal sites of most posterior teeth. Among never-smokers, fewer teeth/sites were affected with $PD > 2.1$ mm which remained relatively stable across age groups, while smokers' teeth/sites affected increased with age. Overall, teeth/sites most affected with mean $CAL \geq 2.1$ mm were noted in 2,3(ML), 3(DL), 14(DF,DL), 15(MF,ML), 18(ML), 19(DL,ML), and 30-31(ML,DL) with upper anterior teeth least affected. Among current smokers, several teeth/sites were affected ($CAL \geq 2.1$ mm): 2,3(all 6 sites), 4(ML,DL), 9(ML), 11-21(DL), 13-18(DF, ML, MIL, DL), 19-20(DF,ML,MIL), 14-18(MIF), 21(MIF, ML, DL), 22(MF), 23-27(MIL), 24-26(MIL, MF, DF in 26 only), 27(MF), 28(MF,ML,DL), 29-31(all 6 sites with the exception of MIF in 30,31). As age increased, more teeth/sites were affected among smokers and by the 5th decade nearly all teeth/sites had $CAL \geq 2.0$ mm.

Conclusions: Contour mapping identifies patterns and dramatically visualizes the substantial periodontal site-specific differences in PD and CAL between smokers and never-smokers across the lifespan.

Source of Funding: Work as part of DPH Fellow's training. Acknowledgement will state "This research was supported by the National Institute of Dental and Craniofacial Research (NIDCR). The views expressed in this article are that of the authors and do not necessarily represent the views of the National Institutes of Health or the US Government."

(43) Oral Health Status Among Adults With and Without Prior Active Duty Service in the U.S. Armed Forces, NHANES 2011-2014

Presenting Author: David Schindler, DDS, MPH, FAGD, Dental Public Health Resident, NIDCR and USAF

Objective: Many veterans qualify for health benefits but generally not dental care. This study examines differences in oral health status between veterans and non-veterans in the US to determine how various factors, including socio-economic, general health, and tobacco use, impact former service members' oral health.

Methods: Data from 11,539 dentate adults participating in the NHANES (2011-2014) were used. Outcome variables included untreated caries (DT), missing teeth (MT), filled teeth (FT), caries experience (DMFT) and periodontal disease (PD). Covariates included: demographic, socioeconomic, deployment, smoking, depression, hypertension, hyperlipidemia, and diabetes. Logistic regression modeling was used to assess associations between these factors and oral health outcomes.

Results: Veterans represent about 9% of the US population. More PD and DMFT was observed in veterans compared to non-veterans. Veterans were more likely to have PD (OR=1.8; 95% CI:1.3-2.5) and higher DMFT (OR=2.9; 95% CI:2.4-3.4); however, after controlling for other covariates, military service was only associated with FT (OR=1.3; 95% CI:1.1-1.6) and higher DMFT (OR=1.6; 95% CI:1.2-1.9). Previous deployments were not associated with an increased risk of poor oral health for veterans.

Conclusion: Because veterans are more likely to come from higher risk groups (smokers, elderly, males, diabetics), the prevalence of adverse oral health is higher among veterans. Overall, military service is not associated with having PD or untreated dental caries but is associated with indicators suggesting veterans have had more dental treatment. Improved understanding of factors that influence oral health among veterans is important for health policy considerations within the veterans health administration system.

Source of Funding: None

(44) Patient Satisfaction in Military Dental Clinics, findings from the Department of Defense Dental Patient Satisfaction Survey

Presenting Author: Kathleen Buss, DDS, MPH, DPH resident, NIDCR and U.S. Navy

Objectives: High patient satisfaction results in improved health outcomes and patient compliance, facilitating Service members' oral health and dental readiness. Patient satisfaction in military dental clinics was last published in 2007. The purpose of this study is to identify indicators of high and low patient satisfaction within a military setting to increase awareness of issues potentially affecting military readiness.

Methods: De-identified data from 248,135 responses to the Department of Defense Dental Patient Satisfaction Survey conducted from October 2014-March 2016 was used. Overall satisfaction and other related outcomes were analyzed by age, sex, beneficiary-status, current-rank, current-Service, type of dental treatment, and clinic size. Unpaired t-tests and logistic regression modeling were used to ascertain relationships between various aspects of patient satisfaction and variables of interest.

Results: Overall, 96.3% of patients attending military dental clinics were satisfied. Army, Navy and Marine Corps patients were less satisfied than their Air Force counterparts. Patients younger than 30 and between 30-39 years were less likely to report satisfaction than patients over 40 (OR=0.40, 95%CI: 0.38-0.43 and OR=0.64, 95%CI: 0.60-0.68 respectively). Patients were less likely to report satisfaction when attending clinics with 5-12 dentists (OR=0.64 95%CI: 0.59-0.70) or 13+ dentists (OR=0.57 95%CI: 0.53-0.62) compared to clinics with 4 or fewer dentists.

Conclusions: There were important differences in patient satisfaction by key characteristics suggesting that improvement in satisfaction may need to be Service specific. Addressing availability of appointments and access to care is paramount since this was the lowest scoring question throughout the survey.

Source of Funding: None

(45) The Association between Marijuana Use and Oral Health in the United States

Presenting Author: Justin Vos, DDS, MPH, DPH Resident, NIDCR

Objective: Recent surveys report that nearly half of the adult US population have used marijuana in their lifetime. Marijuana decriminalization is a growing trend across the US, but marijuana can increase appetite and dry mouth, which can increase the risk for dental caries. Here, we examine the association of poor oral health and marijuana use.

Methods: Data from 5,562 dentate adults age 30-59 years participating in NHANES 2011-2014 were used. Poor oral health (OH) indicators assessed were untreated caries (DT), missing teeth (MT), and periodontal disease (PD). Demographic characteristics, smoking, alcohol use, and marijuana use history (never used, no use in the past 30 days, and used in the past 30 days) were investigated. Descriptive analyses and logistic regression models were used to assess associations of marijuana use with OH.

Results: In bivariate analyses, there were no differences between prior marijuana users and current users in any OH outcome; but current marijuana users were more likely to have untreated dental caries (OR=2.08; 95%CI:1.64-2.64), missing teeth (OR=1.64; 95%CI:1.05-2.57), and periodontitis (OR=1.99; 95%CI:1.48-2.67) than people who never used marijuana. However, after adjusting for confounders, there was no association between poor OH and marijuana use, but cigarette smoking and low educational attainment remained significant indicators for poor OH.

Conclusion: Although unadjusted models showed a significant association between poor OH and current marijuana use, this relationship was mitigated when other indicators for poor OH were controlled for suggesting that current marijuana use is more common among subgroups already at risk for poor oral health.

Source of Funding: None

(46) Adverse Childhood Experiences and Tooth Extractions Due to Caries or Periodontitis in Young and Middle Aged U.S. Adults.

Presenting Author: Saurabh Mankotia, BDS, MBA, Student, Boston University School of Dental Medicine

Objective: To examine the influence of adverse childhood experiences (ACE) on teeth extracted due to dental diseases among young and middle aged US adults.

Methods: We analyzed data of 10,510 respondents, aged 18-55, who completed the 2010 Behavioral Risk Factor Surveillance System (BRFSS) survey. Outcome was any self-reported tooth extraction due to caries or periodontitis. Primary predictor was the ACE level before 18 years of age (self-reported 11-item questions categorized into four groups; none, 1, 2, and 3+). Covariates included socio-demographic variables, current smoking, daily alcohol consumption, diabetes and health insurance status. All analysis was weighted and odds ratios were computed from unadjusted and adjusted logistic regression models using SAS V 9.4.

Results: Overall, 68.5% reported at least one ACE. Adults who reported experiencing 2 or 3+ ACEs had higher tooth loss prevalence compared to those who reported no ACE. (OR - 1.60, 1.76 respectively) ($p < 0.05$). In the multivariate model, after adjusting for selected covariates, adults reporting experiencing 2 or 3+ ACEs were more likely to have tooth loss compared to those who reported no ACE. (OR - 1.76, 1.48 respectively) ($p < 0.05$).

Conclusions: This study suggests potential long-lasting impact of early adverse life events on oral health in young and middle adulthood. Young and middle aged adults experiencing multiple ACEs had significantly more extractions compared to adults who reported not experiencing any ACE. Multidisciplinary efforts between dentists, physicians and social therapists are needed to raise awareness about ACE as a means of identifying and reducing dental health inequities.

Source of Funding: None

(47) Bisphenol A Exposure Effects on Dental Health: NHANES 2013-2014

Presenting Author: Thayer Scott, MPH, Instructor, Henry M Goldman School of Dental Medicine

Objective: Bisphenol A (BPA), a component of polycarbonate plastics and epoxy resins, is an endocrine disruptor with suggested links to health effects including obesity, cancer, and asthma. Prior rat studies suggest an increased risk of enamel defects following peri-natal exposure. This study aims to explore potential BPA effects on human oral disease.

Methods: NHANES 2013-2014 data was used for participants aged 30 years and older, with laboratory specimens and a dental/periodontal exam. HPLC-measured Urinary BPA, the primary independent variable, was categorized by quartiles for descriptive/bivariate analyses, and dichotomized by the mean for regressions. Primary dental outcome variables included DMFT, number of teeth, and periodontal disease (none, mild, moderate, severe based on Eke criteria). Bivariate comparisons of BPA quartiles included dental outcomes, demographics (age, race/ethnicity, education, poverty index ratio), diabetes, obesity, smoking status, sugar intake, and yearly dental visits. Multivariable regression analyses included linear regression (DMFT, number of teeth), and logistic regression (moderate/severe periodontitis). SAS Survey methodology was utilized to control for NHANES complex sampling design.

Results: BPA levels were higher for older adults, females, Mexican Americans and non-Hispanic Blacks, of lower income and educational attainment, with tendencies towards obesity. Mean BPA levels demonstrated non-significant bivariate relationships with dental diseases. Multivariate results show non-significant increases in DMFT and moderate/severe periodontal disease. Higher BPA levels produced a statistically significant, approximately 1 fewer teeth, after controlling for potential confounders ($\beta=-0.84;p=0.02$).

Conclusion: This analysis suggests that BPA exposure may be related to tooth loss. Further longitudinal exploration is needed to examine this relationship prospectively.

Source of Funding: None

(48) The Riddle of the Relationship Between Obesity Status and Dental Caries Experience in Permanent Teeth of Children Aged 5-18 Years

Presenting Author: Pradeep Bhagavatula BDS, MPH, MS, Associate Professor, Marquette University School of Dentistry

Objectives: Childhood obesity is a serious public health problem in the United States and globally, and dental caries continues to be a serious health concern among children from low-income families. Prior work has examined the relationship between obesity and dental caries in children and most of these studies have not demonstrated a strong relationship. In this current study we assess the association between obesity and DMFT scores using a recent nationally representative population-based sample in the US.

Methods: Using 2013-2014 NHANES data, we performed descriptive, and multivariable analysis using negative binomial regression to examine the relationship between DMFT scores and body-weight for 3,686 children, age 5-18 years, after controlling for selected demographic variables. We used STATA (StataCorp, College Station, TX, USA) for data analyses.

Results: The average DMFT scores for underweight, normal weight, overweight/obese children were 1.28, 1.37, and 1.50 teeth, respectively ($p=0.63$). Regression model results indicated that age and income level were the only significant variables. DMFT levels was higher for children of higher age groups and lower for children from families with a higher income level compared to children from families with a lower income level.

Conclusion: The NHANES data showed that DMFT levels were not significantly different in obese/overweight children compared to normal weight children. Further studies are needed to examine subgroups of children and the role of dietary risk factors and prevention.

Source of Funding: None

(49) Receipt of Federal Nutrition Benefits and Oral Health Status for Preschool Children in the U.S., NHANES 2011-2014

Presenting Author: Aachal Devi, BDS, MPH, Dental Public Health Resident, National Institute of Dental Craniofacial Research

Objective: Good nutrition is important for overall health and a poor diet can affect oral health (OH). Although much is known about socio-economic determinants for dental caries in children, little is known about the OH of low-income children receiving federal nutrition assistance.

Methods: Data from 1,638 children age 2-5 participating in the National Health and Nutrition Examination Survey (NHANES) 2011-2014 were used. Dependent variables investigated were caries experience (dft) and untreated caries (dt). Federal nutritional benefits (FNB) examined were Supplemental Nutrition Assistance Program (SNAP), Nutrition Program for Women, Infants, and Children (WIC), and School Nutrition Benefits (SNB). Logistic regression modelling was used to evaluate association between oral health status and receipt of FNB.

Results: All models were adjusted for caregiver's education and dental visits and the reference group were children not eligible for FNB benefits. Children aged 4-5 receiving SNB and eligible-not receiving SNB benefits were more likely to have higher dft (OR=2.35; CI:1.36-4.08 and OR=1.83; CI:1.20-2.79, respectively). Children aged 2-4 receiving WIC and eligible-not receiving WIC were less likely to have dft (OR=0.63; CI:0.40-0.98 and OR=0.58; CI:0.37-0.89, respectively). Receipt of SNAP benefits were associated with dt (OR=1.59; CI: 1.09-2.23), but not with dft.

Conclusion: Pre-school children's dental caries status differs across receipt of all three FNB programs after controlling for key risk indicators including care-giver education and annual dental visits. This suggests that some FNB programs are more likely to have higher at-risk children enrolled compared to other programs; thus, identifying areas for enhanced OH promotion activities.

Source of Funding: Work as part of DPH Fellow's training. Acknowledgement will state "This research was supported by the National Institute of Dental and Craniofacial Research (NIDCR). The views expressed in this article are that of the authors and do not necessarily represent the views of the National Institutes of Health or the US Government."

(50) Minnesota's Older Adult Basic Screening Survey

Presenting Author: Prasida Khanal, MPH, BDS (foreign-trained dentist), State Oral Health Director, Minnesota Department of Health

Minnesota older adults are in great need of better oral health care, especially those with limited income, chronic disease and disability. Funded in part by Delta Dental of Minnesota Foundation, the Minnesota Department of Health's Oral Health Program conducted Minnesota's first Basic Screening Survey (BSS) for Older Adults in 2016 to assess the oral health status of adults aged 65 years and older in a statewide sample of Medicare or Medicaid eligible nursing homes. To increase precision estimates and reduce selection bias, the ASTDD recommended implicit stratified sampling methodology was applied to a list of 373 skilled nursing facilities using Area Agency on Aging (AAA) and Rural Urban Commuting Areas (designated as rural or urban area based on RUCA-zipcode) as stratifying variables. Licensed dental hygienists trained and calibrated in the BSS for Older Adults screened 1,032 older adults in 31 skilled nursing facilities with 30 or more beds resulting in 944 analyzable surveys. Data were weighted to account for the proportion of nursing home beds and residents screened within AAA and RUCA.

Results show that 42 percent of older adults in Minnesota nursing homes have a dental care need. Two in 5 dentate older adults had tooth decay, 32 percent had root fragments, 66 percent had partial tooth loss and 25 percent had complete tooth loss. While we expect more dental disease in nursing home populations, these data reveal a significant issue that needs to be addressed.

Source of Funding: Funded in part by Delta Dental of Minnesota Foundation Minnesota Department of Health

(51) Perinatal Oral Health Practices among Native American Women: A Look at Michigan PRAMS Data

Presenting Author: Beth Anderson, MPH, Oral Health Epidemiologist, Michigan Department of Health and Human Services

Objective: A healthy mouth is a crucial component of a healthy pregnancy. Research shows women are less likely to receive dental care during pregnancy, despite insurance coverage and research linking poor oral health with poor birth outcomes. Limited perinatal oral health data has been available in Michigan, this is the first time data has been available on dental care during pregnancy among Native Americans.

Methods: Eight oral health questions were included within the 2012-2013 Michigan Native American Pregnancy Risk Assessment Monitoring System (NA PRAMS) questionnaire. NA PRAMS is a multi-mode survey (mail and phone) collecting self-reported maternal behaviors occurring before, during, and after pregnancy among women who deliver live-born infants. NA PRAMS was reweighted and combined with data from Michigan PRAMS.

Results: Native American women consistently reported a lower prevalence of teeth cleaning than Michigan women overall; the prevalences of teeth cleaning prior to pregnancy (55.1% vs 59.2%) and teeth cleaning during pregnancy (48.1% vs. 51.7%) were significantly lower among Native American women than white women. Three-quarters of Native American women reported having dental insurance during their pregnancy, significantly lower than black women (74.0% vs. 78.8%).

Conclusions: Proper oral health care remains a challenge among pregnant women across Michigan including the Native American community. Challenges persist in education regarding safety and importance of oral health during pregnancy. Michigan is working to address these disparities through trainings with various partners throughout the state. Further educational efforts targeted specifically at the Native American community are needed to continue to address these disparities.

Source of Funding: WK Kellogg Foundation

(52) Oral Health Status of Adults in North Carolina Assisted Living Facilities

Presenting Author: Rhonda Stephens, DDS, MPH, NC Department of Health and Human Services

Objective: The specific aims of this study were to describe the baseline oral health status of persons residing in North Carolina assisted living facilities and determine how identified oral health problems vary according to resident and facility demographic variables.

Methods: This cross-sectional descriptive epidemiologic study used a statewide random sample of 40 assisted living facilities and a convenience sample of 854 assisted living residents. Dental hygienists and dentists conducted oral screenings on residents using the Association of State and Territorial Dental Director's Basic Screening Survey for Older Adults tool.

Results: Nearly one-third of participants were under age 65. Overall poorer oral health was noted for non-Hispanic black residents, Medicaid recipients, residents of small facilities (20-60 beds) and residents of facilities located in the Coastal Plains region of the state. Oral health also worsened with increasing length of residence, yet seemed to improve with age. The overall rate of edentulism was 29%, half of whom did not have complete dentures. Nearly half (48.6%) of residents had untreated decay.

Conclusion: There is a need for policy and public health programming that addresses the broad racial and socioeconomic factors that contribute to disparities among the institutionalized. Furthermore, the oral health disparities between institutionalized and community-dwelling older adults reflect the need for policy that requires and ensures access to a minimum level of oral health care throughout the duration of a resident's stay. Programming to support such policy should include development of an oral health workforce that is competent in geriatric oral health care.

Source of Funding: NC Department of Health and Human Services, Division of Public Health

(53) Opioid Prescriptions for Dental Diagnoses Varies by Provider Type and Patient Characteristics in Medicaid Populations.

Presenting Author: Chandrashekar Janakiram, MDS PhD, Oral Health Informatics fellow, NICDR / National Library of Medicine NIH

Objective: To explore differences in opioid prescriptions for dental diagnoses by health care providers for Medicaid-enrolled children and adults in the US.

Methods: Medicaid medical and pharmacy claims data for 2013-2015 from 13 US states were used. Information from all persons receiving healthcare for any dental/oral related conditions (ICD-9-CM codes 520.0-529.9) and prescribed any opioid analgesics within 14 days of diagnosis was extracted using querying tools. Descriptive analyses and multivariable modelling were conducted in SAS 9.4.

Results: Among 896,378 Medicaid patients with a primary dental diagnosis, 23% received an opioid prescription within 14 days of a dental diagnosis. Two-thirds of all opioid prescriptions were for women (66%). Approximately one-third of opioid prescriptions for dental diagnoses were prescribed by emergency department (ED) providers whereas 11% were prescribed by dentists. Non-Hispanic whites and African-Americans were twice as likely to receive an opioid than Hispanics (OR=2.15; 95% CI:2.09-2.21 and OR=1.93; 95% CI:1.87-1.98 respectively). Patients were nearly five times more likely and 2.5 times more likely to receive an opioid when seen by ED providers (OR=2.63; 95% CI:2.56-2.70) or nurse practitioners (OR=4.68; 95% CI:4.60-4.76) than when seen by a dentist. ED providers were less likely to prescribe an opioid for diseases of the hard tissue, teeth, and jaws and more for pulp and periapical conditions compared to dentists.

Conclusions: In this Medicaid population, dentists are substantially providing less opioid prescriptions compared to their medical colleagues for pain treatment following a dental diagnosis; receipt of an opioid varies by patient race/ethnicity, gender, and dental diagnosis.

Source of Funding: None

(54) Oral Health Surveillance System for Pennsylvania

Presenting Author: Jan Miller, Oral Health Program Administrator, Pennsylvania Department of Health

Objective: Public health surveillance is a continuous, systematic collection, analysis and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice. HP2020 oral health objective-16 encourages all the States to have an oral health surveillance system (OHSS). State of Pennsylvania (PA), however, currently does not have OHSS. Therefore, the objective of this project was to identify core oral health indicators (OHI) for OHSS in state of PA.

Methods: A thorough literature search was performed to identify different documents and guidelines related to conducting OHSS. Association of State Territorial Dental Director's (ASTDD) Best Practices Approach and Center for Disease Control and Prevention's (CDC) guidelines for developing OHIs were reviewed. Documents pertaining to Behavioral Risk Factor Surveillance System (BRFSS), Behavioral Surveillance System (BSS), PA cancer registry and Water Fluoridation Reporting System (WFRS) were included in the final report. A dental officer from the CDC was also consulted.

Results: A total of nine OHIs including four adult indicators (Dental visits, teeth cleaning, complete tooth loss, loss of six or more teeth), three child indicators (Caries experience, untreated decay, sealants), one water fluoridation indicator and one Oral Cancer Incidence and Mortality indicator were identified as per CDC recommendation and were prioritized for PA state. This document included all the references that would assist PADOH for developing OHSS in future.

Conclusion: A comprehensive set of nine OHIs were identified and recommended for PA OHSS.

Source of Funding: None

(55) Trends in the Development of the Dental Service Organization (DSO) Model: Implications for the Oral Health Workforce and Access to Services

Presenting Author: Margaret Langelier, MSHSA, Deputy Director, Oral Health Workforce Research Center

Objectives: The configurations of dental service organizations (DSOs) vary; some consist of employees and others comprise independently owned dental practices sharing management services. One objective was to identify and analyze data about DSOs to understand qualitative differences in organizational structures and engagement with clinical providers.

Methods: This study included a survey of the 47 DSO members of the Association of Dental Support Organizations (ADSO) in the US. Data were analyzed using IBM SPSS v.24.

Results: The survey response rate was 68.1%. Most respondents were for-profit organizations (96.8%), operating in 48 states and DC. All (100.0%) provided business management services but fewer than 46% provided clinical care protocols to affiliates. DSOs varied in size from 6,000 to 1,600,000 patients. Dentists mainly affiliated with DSOs as associates (66.7%), owners (66.7%), and employees (53.7%). The mean number of full-time dentists was 213 (range 6 to 1,500). Ninety percent indicated that more than 60% of affiliated dentists were general dentists. More than 70% of DSOs served Medicaid or CHIP insured patients in at least one state; 43.5% of DSOs indicated that all affiliated dentists treated some publicly insured patients.

Conclusions: DSOs described a focus on management services with only limited involvement in any aspect of clinical dentistry. DSOs provided general dentistry, specialty services, or both. Most dentists recruited to DSOs were experienced dentists, coincidental to a strategy of affiliating with private practice dentists. DSOs are leveraging size and market penetration to serve Medicaid or CHIP eligible patients to an appreciable degree.

Source of Funding: US Health Resources and Services Administration, National Bureau for Health Workforce Analysis

(56) The Curriculum, Coaching and Mentoring Used to Support the Evolving Identity of the Dental Hygienist Practicing in Community Settings while Using Teledentistry

Presenting Author: Maureen Harrington, EdD (c), MPH, Director of Grant Operations and Community Education, University of the Pacific School of Dentistry

The University of the Pacific, Arthur A. Dugoni School of Dentistry implemented Virtual Dental Homes in various community settings throughout California. The Virtual Dental Home system of care provides community-based dental care at sites like schools, long term care facilities, community centers, WIC centers and the like and utilizes technology such as cloud-based dental records, digital radiographs, and high quality intraoral photos. Teledentistry provides a mechanism for the onsite dental team to communicate with a dentist at a different location. This distributed team approach requires changes of many sorts.

Changes are based in the self-identity of the dental hygienist, practice approaches which are different from traditional dental practices and redistributed power and authority within the dental team. In this system the dental hygienist is the primary care provider and the dentist is the diagnostician and surgical specialist. Disruption to traditional dentistry can be a challenge but recognizing significant unmet dental needs among large numbers of the US population can be a motivator to persevere and push through the discomfort associated with change. Pacific's curriculum included the following: timely coaching and mentoring based on developmental phases and achievements, facilitated peer learning by pairing seasoned clinicians with newer clinicians to the system of care, and guided discussion to influence improved team dynamics and effective practice approaches.

Source of Funding: HRSA Predoc Grant

(57) Pilot Data Exploring the Impact of a Leadership, Advocacy, and Public Health Grant in a Pediatric Dentistry Residency

Presenting Author: David Avenetti, DDS, MSD, MPH, Clinical Assistant Professor & Residency Program Director, University of Illinois at Chicago, College of Dentistry, Department of Pediatric Dentistry

Objective: to describe the preliminary impact of a leadership, advocacy, and public health grant in the Pediatric Dentistry residency at the University of Illinois at Chicago.

Methods: Project aims were to 1) implement an advocacy and leadership curriculum, 2) enhance interprofessional education with Pediatric Medicine, 3) expose residents to alternative models of care through community clinic rotations, and 4) offer formal public health education through a dual-degree Pediatric Dentistry/Master of Public Health and certificate programs. Qualitative and quantitative pilot data were collected during the planning and preliminary years to allow for rapid-cycle improvement strategies.

Results: 1) We implemented a leadership curriculum and advocacy curriculum for first- and second-year residents respectively. Each consisted of 10 didactic sessions. 2) Second-year residents rotated through two community partner clinics, provided care to >400 children, and delivered 9 oral health presentations to dental and non-dental providers. 3) Second-year residents rotated in Pediatric Medicine to teach oral health screenings during well-child visits, and each taught an oral health lecture. Eight Pediatric Medicine residents rotated through Pediatric Dentistry to observe preventive and restorative dental care. 4) Three residents enrolled in the MPH/Pediatric Dentistry dual-degree program, and one additional resident enrolled in the Certificate program. Presentation evaluations show an increased knowledge for all lecture participants about topics presented.

Conclusions: This grant has been effective in meeting each of its specific aims. Resident feedback suggests increased knowledge and interest in public health dentistry. Preliminary qualitative and quantitative data will guide improvements for the remaining years of the funding period.

Source of Funding: Department of Health and Human Services, Health Resources and Services Administration, Grant D88HP285060100

(58) Benefits and Challenges of Community-Based Service Learning in Dentistry from the Perspectives of Partner Sites

Presenting Author: Patrick Smith, DMD, MPH, Clinical Assistant Professor, University of Illinois Chicago College of Dentistry

Objectives: This qualitative study examines the perspectives of key staff and administrators at extramural partner sites for community learning experiences aimed at introducing dental students to working with children and community-based dentistry.

Methods: Fourteen semi-structured interviews were conducted with individuals from nine extramural sites. Interviewees had a range of roles from clinicians to CEOs, with 6 also reporting as student preceptors. Three coders developed an initial coding scheme focused on the primary benefits and challenges. After the initial coding scheme was established, all coders reviewed interview transcripts independently before final discussions and re-coding to agreement.

Results: Main themes related to benefits were: staying current with clinical developments, using student rotations for workforce recruitment, sites indirectly improving their missions by exposing students to broader roles of oral health providers and raising awareness to the need for dentistry in community settings, and nurturing a positive workplace environment and connection to the university. The main themes related to challenges were: balancing education and training for students with functioning of the clinic, communication with the university, and managing unique clinical and professional characteristics of students.

Conclusions: Requiring community-based service learning experiences is one strategy for broadening clinical skills and awareness of social determinants of oral health among new dentists. Understanding benefits and easing challenges to partnering sites may enhance their partnership experience, the students' experience, and further the objective of addressing access to oral healthcare among children and lower-income individuals.

Source of Funding: Illinois Children's Healthcare Foundation

(59) Teledentistry: Increasing Access to Oral Health Services for Children in Rural Populations

Presenting Author: Simona Surdu, MD, PhD, Senior Research Associate, Oral Health Workforce Research Center, Center for Health Workforce Studies, School of Public Health, University at Albany, SUNY

Objectives: The objective of this study was to evaluate factors influencing access to oral health services in primary dental clinics among children living in rural upstate New York following a teledentistry consultation.

Methods: The study was based on dental information collected for 144 children with serious dental decay who had a specialty teledentistry consultation at one of the Finger Lakes Community Health clinics in 2015-2016. Associations between access to oral health services in primary dental clinics and children's sociodemographic characteristics as well as teledentistry consult and clinical outcome covariates were evaluated using Fisher Exact and Mann-Whitney U tests in SAS v9.4.

Results: The majority of study subjects were white children (70%), non-Hispanic (75%), under 6 years of age (75%) at the time of the teledentistry consultation. The study results indicate that most children completed a recommended treatment plan (97%) and subsequently accessed follow-up oral health services at one of the local primary dental clinics (77%). The findings suggest that children's access to oral health services in primary dental clinics was positively and significantly associated with a dental treatment recommendation using nitrous oxide ($P=0.028$), fewer case management interventions ($P=0.003$), and shorter time to treatment initiation ($P=0.012$) or completion ($P=0.020$). Children's demographics and travel distance to the dental clinic were not associated with their access to oral health services in the community.

Conclusions: The study findings show that that teledentistry consultation promoted access and utilization of specialty oral health care as well as follow-up services at local dental clinics for rural children.

Source of Funding: US Health Resources and Services Administration, National Bureau for Health Workforce Analysis

(60) The Opioid Epidemic: Role of Dental Specialists

Presenting Author: Rochisha Marwaha, BDS, MPH, Post-doctoral Resident in Dental Public Health, Columbia University, College of Dental Medicine

Background: The United States is in the midst of an opioid epidemic predicated on both illegal and prescription drug abuse. Although 12% of the immediate release opioids in the U.S. are prescribed by dentists, their role in the opioid epidemic has not been clarified, and the prescribing knowledge, opinions and practices of dental specialties are not documented.

Objective: To evaluate prescription opioid related knowledge, opinions and practices of oral surgeons and endodontists at Columbia University, College of Dental Medicine.

Methods: Qualitative methods using semi-structured interview guides were used to assess prescription opioid related knowledge, opinions and practices of oral surgery and endodontics faculty and trainees at Columbia University. Key-informant interviews were conducted with faculty ($n=10$) and focus groups ($n = 8-12$ each) were conducted with post-doctoral trainees. Interviews and focus groups were recorded, transcribed and coded for thematic content.

Results: Endodontics faculty report rarely prescribing opioids; they use Prescription Drug Monitoring Programs (PDMP's) to track patients' potential for addiction, but oral surgeons prescribe opioids frequently and don't routinely use PDMP's. Although trainees seldom prescribe opioids in dental school, they would consider prescribing more opioids in practice.

Conclusions: Oral surgeons are more likely to prescribe opioids because they believe that surgical procedures require opioids for acute pain management, and they do not use PDMP's due to time constraints. Preliminary analyses suggest that there is disparity in perception of acute pain and its management by specialty. Training for postdoctoral students that seeks to standardize management of dental/oral pain should be considered.

Source of Funding: None

(62) The Virtual Dental Home's Role in the California Dental Transformation Initiative

Presenting Author: Rolande Tellier, MBA, PMP, Sr. Program Director, University of the Pacific - Pacific Center for Special Care

Objective: To present the University's role in the implementation of the Virtual Dental Home (VDH) in 8 counties in California as part of the Dental Transformation Initiative (DTI).

Methods: Presentation of protocols and processes developed to standardize the training of clinical and operational clinic staff in providing preventive and minimally invasive oral health care using tele-connected teams. These tele-connected teams consist of a dental hygienist and dental assistant working in a community setting with portable dental equipment using store-and-forward technology to submit records, x-rays and images to a dentist working in the clinic or dental office. The dentist is then able to render a decision and develop a treatment plan that includes where appropriate follow-up care is provided.

Results: The VDH is implemented in 8 of 15 Local Dental Pilot Projects funded by the California Department of Health Care Services to explore innovative solutions to the access to care problem for Medicaid dental beneficiaries. Unlike traditional screening programs, the VDH offers a continuous presence in the community site and provides follow up care based on treatment plans and periodicity schedules.

Conclusions: By the end of the 4-year project, it is expected that along with an increase in access, a majority of the patients enrolled in the VDH will be kept healthy in their community settings and reduce the need to be seen in a traditional dental office or clinic.

Source of Funding: CMS / California Department of Health Care Services

(62) Understanding Innovative Oral Health Professions in Minnesota

Presenting Author: Laura McLain, MA, Senior Research Analyst, Minnesota Department of Health

Minnesota is working on using a variety of providers to increase access to oral health care, especially with the underserved. Minnesota is one of few states that licenses dental therapists, and is also working on better using collaborative practice dental hygienists in community settings. The Minnesota Department of Health conducts research studies to better understand the impact these providers are making in Minnesota. For collaborative practice dental hygienists, highlights include team work, services provided, populations served and organizational structure. For dental therapists, highlights will include facilities and locations they work, work status, and job satisfaction.

The objective of the poster is to highlight important information we learn from these projects, such as changes over time for dental therapist and common factors for success with collaborative practice dental hygienists. Methods used include annual workforce survey of dental therapists and a federally funded qualitative study on the facilitators and barriers for collaborative practice dental therapists to work in non-traditional settings. While both professions are small, understanding of conclusions from the studies around how these providers are currently working can be a foundation for successfully meeting oral health needs in innovative and successful ways. The information can be used by other regions of the United States wanting to use diverse providers to better meet oral health care needs.

Source of Funding: U.S. Health Resources and Services Administration, State of Minnesota

(63) Knowledge, Attitudes and Willingness of Dentists to Treat Deaf Patients: A Pilot Study

Presenting Author: Abdullah Al Madani, BDS, MPH, DPH Resident, Eastman Institute for Oral Health

Background: Approximately 15% of American adults (37.5 million) aged 18 and over reported some trouble hearing. Deaf people have reported difficulties accessing health care. Oral health is a vital component of overall health, which impacts each individual's wellbeing and quality of life. Previous studies have reported poor oral health and low dental care utilization by deaf and hard of hearing patients.

Objectives: The objective of this study was to assess the background, knowledge, and perceived barriers and facilitators faced by dentists about treating Deaf patients.

Methods: Surveys were administered to practicing dentists/dental residents in Monroe and surrounding counties in New York State. Surveys were administered in two modes; paper and web-based. Data analyses included descriptive statistics, T-tests and multiple regressions.

Results: Results showed that there was a substantial lack of knowledge among the dentists regarding the deaf culture with a mean score of correct answers of 3.2 out of 9 (SD=2.04). There was a statistically significant difference between the groups who received and those who did not receive training with regards to barriers faced ($p < 0.05$) and there was no statistically significant difference with regards to facilitators faced. The most common barriers were communication difficulties, treatment time, inadequately trained personnel and poor reimbursements.

Conclusion: This study provided insight on the knowledge, attitudes and willingness of dentists to treat deaf patients. It is evident that dentists lack knowledge about the deaf population and that there is a need for improvement in the education and training to provide dental care to this population.

Source of Funding: None

(64) Using Teledentistry to Deliver Oral Health Services to Underserved Populations in the Phoenix Metro Area

Presenting Author: Scott Howell, DMD, MPH, Assistant Professor, A. T. Still University, Arizona School of Dentistry & Oral Health

Background: The Arizona School of Dentistry & Oral Health (ASDOH) received a \$1.7 million HRSA grant to develop new interprofessional education curriculum, including an interprofessional teledentistry-connected teams program. This poster will discuss this program and how teledentistry has been used to provide care to unique underserved populations.

Methods: This project partnered with medical and social services teams at several community organizations in the Phoenix, AZ metro area including an FQHC, a juvenile detention center (JDC), and a medical clinic for children with complex medical conditions. Since November 2016, affiliated practice registered dental hygienists and dental students have provided assessments, radiographs, and preventive services 1-2 days per week. Cases were reviewed at the dental school by a dentist and dental students.

Results: Data collection is still ongoing. As of October 2017, the teledentistry program had seen 124 patients. All children were insured through Medicaid. 66% of the youth in the JDC and 100% of adults were uninsured. Over 50% of the youth and adults had a mental or behavioral health condition. 76 dental students received training in teledentistry.

Conclusions: Through teledentistry, ASDOH has been able to reach communities that lack access to traditional dental services. Each member of the dental team works at the top of their scope of practice. Dental students are introduced to alternative models of healthcare delivery that they can carry into their future practices.

Source of Funding: Health Resources and Services Administration, grant #D85HP20045

(65) Comparison of Iowa Dentist Participation in a Medicaid State Plan Versus a Private Carve-out Plan for the Medicaid Expansion Population

Presenting Author: Julie Reynolds, DDS, MS, Visiting Assistant Professor, University of Iowa

Background: In May 2014, Iowa's Dental Wellness Plan (DWP) began providing dental benefits to its ACA-related Medicaid expansion population. The DWP was administered by a private dental benefits carrier, had a higher reimbursement rate, and a more complex benefit structure compared to traditional Medicaid. The aims of this study were to 1) examine the extent of dentist participation in the DWP and traditional Medicaid, and 2) identify predictors of dentist participation in DWP and in traditional Medicaid.

Methods: A survey was mailed to all licensed Iowa dentists in private practice (n=1301) in October 2016, two years after the DWP was implemented. Analyses compared dentists accepting new DWP patients to those who were not, as well as those accepting new Medicaid patients to those who were not.

Results: The response rate was 47% (n=557). Forty-two percent of dentists participated in DWP, and 45% participated in Medicaid, with 28% of dentists participating in both programs. Among DWP participants, 40% placed limits on acceptance; whereas among Medicaid participants, 76% placed limits on acceptance. The most common limits on patient acceptance were: accepting only dentists' own patients who transitioned to DWP/Medicaid, a set number of new DWP/Medicaid patients, and pediatric Medicaid patients only.

Conclusions: While dentist participation rates in DWP and in Medicaid were each over 40%, considerable proportions of dentists limited their acceptance of new patients in each plan. Additionally, practice busyness was a significant predictor for participation in DWP but not in Medicaid.

Source of Funding: Iowa Department of Human Services

(66) Can Kids Find Dental Care? A Comprehensive Study of the Future of Oral Health Services for Children, 2018-2030?

Presenting Author: Paul Casamassimo, DDS, MS, Chief Policy Officer, American Academy of Pediatric Dentistry

Objectives: This comprehensive study commissioned by the American Academy of Pediatric Dentistry (AAPD) examined the ideal number and distribution of pediatric dental professionals to address the demand for children's dental services.

Methods: The study included a review of pertinent literature, qualified informant interviews, and a 2017 Survey of Pediatric Dental Practice distributed to 6,500 U.S. pediatric dentists via email and mail. A population database was constructed from data from the U.S. Census Bureau, CDC, and other sources.

Results: The number of pediatric dentists has increased over the past two decades and is projected to increase by 62 percent by 2030. Children in low-income families have a higher utilization rate of dental services, and 70 percent of pediatric dentists see Medicaid patients, comprising 34 percent of their practices. Virtually every pediatric dentist provides services to the increasing number of patients with special health care needs. The majority of pediatric dentists provide care to children in operating room/surgical facilities, treating one-third more patients than in 2011.

Conclusions: While projections suggest that the supply of pediatric dentists is growing more rapidly than demand for services based solely on changing demographics, other crucial factors could influence the demand for services, such as the removal of policy and insurance coverage barriers to children receiving dental care, as well as the number and proportion of children seeking care from pediatric dentists.

Source of Funding: American Academy of Pediatric Dentistry

(67) Educating Dental Students to Work in Telehealth-Connected Teams

Presenting Author: Carsen Bentley, DDS, MPH, University of the Pacific Arthur A. Dugoni School of Dentistry

Objective: To prepare the graduating dental professional in the science, methods, and structure of the Virtual Dental Home (VDH) systems, and for their roles in the telehealth-connected team. VDH is a community-based oral healthcare system that delivers preventive and therapeutic services, utilizing the latest technology to link practitioners in the community with dentists at remote office sites.

Methods and Results: The VDH seminars includes the following activities: online modules prepare the students for initial discussion regarding workforce policy, scope of practice, social determinants of oral health, evidence based dentistry, Interim Therapeutic Restorations (ITR), and advances in preventive dentistry. A worksheet then guides the case-based learning and introduces the process of reviewing the electronic dental record, creating and sequencing a comprehensive treatment plan, and making recommendations for the telehealth-connected team. “Real” cases (from the instructor’s faculty teledentistry practice) are then reviewed and the students’ product (progress notes, treatment plan and recommendations) are the outcomes of the telehealth-connected team workflow. Hands-on instruction with intraoral cameras and a site visit to a VDH community site to observe the full telehealth-connected team workflow completes the experience.

Conclusion: The curriculum of the Virtual Dental Home seminar includes special emphasis on improving the oral health of underserved populations in community sites using behavioral and social tools adapted for the cultural and linguistic environment at the sites. It also includes an emphasis on oral health care for individuals with developmental disabilities, cognitive impairment, complex medical problems, significant physical limitations, vulnerable elderly, homeless individuals and other vulnerable populations.

Source of Funding: HRSA

(68) Community Dental Health Coordinators in South Florida – A Case Management Approach to Improve Access to Dental Care

Presenting Author: Claudia Serna, PhD, MPH, BDS, Consultant, American Dental Association

Members of minority groups and those of lower socioeconomic status experience the greatest disease burden. Poor health status is often the result of cumulative factors such as language, cultural barriers, lack of insurance, high cost, lack of understanding about how to navigate the health care system, limited knowledge on nutrition, the importance of preventive care, and transportation difficulties. To affect oral health outcomes a case management approach was used to address all these factors. From October 2016 to June 2017, six Community Dental Health Coordinators (CDHCs) (1 dentist, 2 hygienists and 3 expanded functions dental assistants) worked on community oral health needs assessments, planning and facilitation of dental care in South Florida (Miami Dade and Broward). Approximately 7,000 patients, ages 18 to 80, Whites (21%), Hispanics (55%), African American (15%), others (9%) as well as (40%) LGTB & HIV positive from community health centers, private practices and a HIV dental clinic were educated about the use of dental services and how to keep appointments, received assistance navigating the health care system, support for enrollment, eligibility, verification and explanation of health benefits; were linked with health providers, received Medicaid information, health resources, and translation services. CDHCs are the bridge between the diverse populations they serve and the health care system. They are the liaisons between their community, health professionals, and social service organizations, helping to improve oral health outcomes.

Source of Funding: American Dental Association

AAPHD Student Merit Award Winner Posters

(69) Group Visits - A Model to Improve Access to Care and Reduce Treatment Period for Dentures

Presenting Author: Siddardha Chandrupatla, BDS, MMSc, Adjunct Faculty, Harvard School of Dental Medicine

Objective: To evaluate the efficiency of denture group visits program by delivering dentures in shorter number of days when compared to individual appointments.

Methods: Group denture visits model was developed and implemented at Cambridge Health Alliance (CHA) dental center. We evaluated the efficiency, i.e., reduced number of days for the overall treatment period, utilizing a retrospective chart review of the patients who received dentures over a three-year period. Descriptive statistics, the Mann-Whitney U test, and GLM regression were performed to analyze the results.

Results: Most of the patients had public insurance (79%), 55% were women, and the mean age of the sample was 63 years. The average number of days taken to deliver a denture was 32% less in the group visits compared to individual visits ($p < 0.0001$). Number of patients who dropped off in the middle of the treatment was reduced from 17% in individual visits to 8% in group visits. The type of visit and type of denture were significant contributing factors relative to the number of days required for treatment.

Conclusion: Group visits are less utilized in dentistry; we have demonstrated their feasibility in dentistry. Denture group visits model was used to decrease the number of days required to treat patients with edentulism by 32% compared to individual visits; thereby, freeing appointment schedules, reduce waiting period for future patients and increase number of patients that can be treated. We demonstrated an innovative way to use group visits in clinical dentistry as an approach to increase access to care.

Source of Funding: None

(70) Dental Utilization Patterns of Children Age 2-3 Years Covered by Medicaid and Residing in Wayne County, Michigan

Presenting Author: Elizabeth Pitts, RDH, MS, University of Michigan School of Dentistry

Background: Untreated oral disease is prevalent among underserved and vulnerable populations in the United States. These populations include children, specifically those from lower socioeconomic backgrounds.

Objectives: To examine dental utilization patterns of Medicaid-enrolled children age 2 residing in Detroit, Michigan compared to their counterparts living in Outer Wayne County, Michigan. A secondary aim was to identify those who had an emergency dental visit during age 2 and determine the type of follow-up through age 3.

Methods: This study was a secondary analysis of Medicaid dental administrative claims data for eligible children in Wayne County, Michigan who turned 2 years of age during calendar year 2013. Child-level enrollment and dental utilization data were extracted from the Michigan Department of Health and Human Services Data Warehouse.

Results: Children meeting inclusion criteria numbered 7,359. Only 3,671 (50%) had at least one dental visit between age 24 and 47 months. A total of 7,481 visits occurred during this time. Four-hundred (5%) visits were categorized as an emergency compared to 5,425 (73%) categorized as preventive. Seventy (69%) children from Detroit had an emergency visit during age two compared to 31 (31%) from Outer Wayne County. Fifty-seven (81%) in Detroit received follow-up care post an emergency, compared to 21 (68%) in Outer Wayne County. Equal proportions (23%) of repeat emergency visits were observed in Detroit and Outer Wayne County.

Conclusions: Earlier preventive dental care may help reduce emergency visits, be more cost effective, and decrease the need for extensive treatment.

Source of Funding: University of Michigan Rackham Block Grant Award

(71) Psychosocial Stressors and Dental Care Utilization Among Low-income African-American Women

Presenting Author: Doaa Alsaggaf, BDS, DScD, King Abdulaziz University, Boston University Henry M. Goldman School of Dental Medicine

Objectives: To investigate the association between psychosocial stressors and dental care utilization among low-income African-American women.

Methods: Data from a representative sample of low-income African-American women (n=969), obtained from the Detroit Dental Health Project (2002-2003) were analyzed. The main outcomes were having a dental visit within the past year and the reason for the last dental visit. The main predictors were depression, perceived discrimination, and food insufficiency, assessed both individually and in combination. Statistical analyses were done using SAS 9.4. Binary and multinomial logistic regression analyses, accommodating for the complex survey design, were used to predict having a dental visit within the past year, and the reason for the last dental visit, respectively.

Results: Depression, perceived discrimination, and food insufficiency were associated with lower odds of having a dental visit (OR= 0.71, 95%CI=0.53-0.94, OR=0.65, 95%CI=0.44-0.95, and OR= 0.64, 95%CI=0.44-0.93, respectively). Depression and perceived discrimination were also significantly associated with the reason for the last dental visit. Experiencing concurrent psychosocial stressors was associated with lower odds of having dental visits as well as lower odds of having preventive or treatment visits, compared to no visits.

Conclusions: Psychosocial stressors are negatively associated with dental care utilization among low-income African-American women. Programs designed to improve dental care use among these women should consider allocating resources to alleviate the adverse impact of psychosocial stressors on their utilization of dental care services.

Source of Funding: None

(72) Influence of Community-level Factors on Non-traumatic Dental Visit Rates to Emergency Departments in Rhode Island

Presenting Author: Eman AlSagob, BDS, MS, DScD, Assistant Professor, Princess Nourah Bent

Objectives: To identify community-level factors influencing rates of non-traumatic dental visits (NTDV) to hospital-based emergency departments (ED) in Rhode Island.

Methods: ED visit data for 2010 were obtained from hospital discharge data. Data on community water fluoridation and other community-level factors were obtained from the Rhode Island Department of Health and other sources. Data regarding dental care providers and dental health professional shortage areas (DHPSA) were obtained from the Rhode Island Department of Health and US Department of Health and Human Services Health Resources & Services Administration. Analysis of variance and the chi-square test were used in univariate and bivariate analyses to identify any statistical association of NTDV rates and community water fluoridation status with other independent variables. For the primary outcome of interest (NTDV rate per 10,000 individuals), a negative binomial regression model with log link was performed. The analysis was conducted at the zip code level (n=75).

Results: ED NTDV rates were 1.35 times lower in fluoridated communities than in non-fluoridated communities. Communities with higher poverty levels and a younger population had significantly higher ED NTDV rates (relative risk 1.04 [P=0.01] and relative risk 1.05 [P=0.03], respectively). Numbers of dental health care providers and DHPSA status were not significantly associated with ED visits.

Conclusion: A high poverty level and a large young population are significantly associated with higher rates of ED NTDV. Targeted interventions in areas with high poverty levels and a high proportion of young adults might reduce NTDV rates.

Source of Funding: None

(73) Effect and Acceptance of Silver Diamine Fluoride Treatment on Dental Caries in Primary Teeth

Presenting Author: Jennifer Clemens, DMD, MPH, A.T. Still University

Objectives. Silver Diamine Fluoride (SDF) has been identified as a possible solution to the issues of untreated dental caries and insufficient access to dental care. This study evaluated the effectiveness of 38% SDF as a dental caries arrest agent in Oregon children aged 5 and younger, the incidence of pain and infection in SDF-treated teeth, and parental acceptance.

Methods. This clinical pilot study enrolled 32 children with 118 caries lesions in primary teeth. Caries lesions were treated with 38% SDF. Subjects were reevaluated 2-3 weeks after baseline SDF application to assess color and consistency changes of carious lesions that indicated whether the decay was active or arrested. Parents were interviewed at recall regarding symptoms of pain or infection and surveyed regarding subjective feelings about SDF.

Results. Of 102 lesions included for analysis, 100 were found to be arrested at recall. The duration of SDF application was not found to be associated with arrest. No incidence of pain or infection of an SDF-treated tooth was recorded. Parental impression of ease of application, taste, and esthetics was favorable.

Conclusions. SDF is effective at arresting clinically detectable active caries lesions in primary teeth. Proper selection of teeth for SDF application is associated with favorable outcomes. SDF is a good alternative treatment or adjunct to traditional restorative dental treatment in young children.

Source of Funding: None

(74) PERIODONTAL TREATMENT NEEDS IN A MEDICAID EXPANSION POPULATION

Presenting Author: Jennifer Sukalski, RDH, MS, University of Iowa

Objective: Investigate and determine periodontal treatment needs with use of the Community Periodontal Index of Treatment Needs (CPITN) of a Medicaid expansion population in Iowa (DWP) in comparison with patients insured by the traditional Medicaid State Plan, patients with private dental insurance, and self-pay patients, while evaluating systemic health conditions and socio-behavioral factors.

Methods: A retrospective analysis of electronic health records (EHRs) of new patients at the UI COD between 2014-2016 was performed. The primary outcome of interest was CPITN score indicating need for scaling and root planing (SRP). Logistic regression models analyzed associations between selected predictors and treatment need by source of financing.

Results: EHR data for 1876 patients were reviewed. SRP was indicated for 59% of DWP members. After controlling for systemic health and socio-behavioral factors, there was no significant difference in periodontal treatment need based on source of financing. Significant predictors of need for SRP in the full model included: age, gender, diabetes, smoking status, and not receiving regular dental exams.

Discussion: Associations between periodontitis and predictors are consistent with previous studies. Interestingly, source of financing was not significantly associated with treatment needs. However, high need for SRP among all payment sources was noted.

Conclusions: Previous studies found that DWP members had lower oral health than Medicaid adults. DWP's earned benefits structure delays periodontal treatment, potentially leading to deteriorating periodontal health for nearly 60% of the population. Further assessment of periodontal burden at different stages of treatment within DWP should be conducted for a potential program modification.

Source of Funding: This project was not funded.

(75) The Oral Health Needs of Women Inmates in Phoenix, Arizona

Presenting Author: Katie Takach, MPH, MS, Student Dentist, Arizona School of Dentistry and Oral Health

Background: Current and former inmates are more likely to experience chronic diseases. Approximately 53% of inmates self-report dental needs as a health concern upon admission to jail. Untreated oral disease can lead to pain, infection, reduced quality of life, and decreased psychosocial well-being. Women inmates are at particular risk for adverse health outcomes.

Objectives: The purpose of this project was to better understand the oral health needs of women jail inmates in Phoenix, Arizona.

Methods: Seventy-six women answered an oral health needs survey designed to gain information on access to dental care, self-perception of oral health, and past emergency department use for dental pain. SPSS was used for data management, descriptive, and bivariate analyses.

Results: Women inmates experienced significant barriers to dental care including cost (53%), lack of insurance (61%), fear (24%), and transportation (24%). Twenty-six percent reported past emergency department use for oral pain and 63.2% reported experiencing oral pain within the last 12 months. Eighty-four percent of women inmates were dissatisfied with their teeth. Use of tobacco, methamphetamine, and heroin were correlated with a more negative self-perception of oral health ($p = 0.011, 0.013, 0.005$, respectively). Increased barriers to access to dental care was also found to negatively impact self-perception of oral health ($p = 0.004$).

Conclusions: Women with a history of incarceration have significant barriers to accessing routine dental care. Lack of utilization of dental services, drug habits, and limited oral health knowledge place women with a history of incarceration at a higher risk for oral diseases.

Source of Funding: None

(76) Providing One Visit Dentures to Edentulous Homeless Individuals in San Francisco, California: A Program Evaluation

Presenting Author: JungSoo Kim, BS, DDS Candidate 2019, UCSF School of Dentistry

Objectives: City Smiles Connect (CSC), a program co-organized by the San Francisco Dental Society (SFDS) and Project Homeless Connect (PHC), provides one-visit dentures to homeless people. This project conducted a systematic mixed-methods program evaluation.

Methods: Elements evaluated were: (i) structural (e.g., staffing utilized); (ii) process (e.g., patient treatment); and (iii) outcomes (e.g., patients' experiences). Structural and process elements were observed at two CSC clinics. Outcomes were evaluated by semi-structured interviews of patients, providers, and administrator. Additionally, demographic questionnaires and the Oral Health Impact Profile-Edentulous Version (OHIP-Edent) were completed for each patient. Investigators used Atlas TI software to analyze transcribed interviews. Donated costs and volunteer hours per service provided were calculated.

Results: Eight homeless patients, five providers and one administrator completed interviews. Thirteen main concepts emerged during qualitative analysis of patient interviews. Common concepts discussed by patients were: patient satisfaction, length of care, program dissemination, community need, prior dental care and quality of life. All patients' OHIP-Edent scores indicated oral health had a negative impact on quality of life prior to receiving dentures. Most commonly affected dimensions of oral health-related quality of life were functional limitation and physical disability. Each denture's donated value was \$482.50, requiring 18 hours of combined provider, laboratory technician and administrator time.

Conclusion: Key strengths of the program were fulfilling a community need, short length of time to complete care, and improving quality of life for edentulous homeless individuals. Areas needing improvement included improved continuity of care, adequacy of record keeping, and efficient use of volunteers.

Source of Funding: University of California San Francisco School of Dentistry, Global Oral Health Community Partnership Fellowship

(77) Seeking Refuge From Plaque

Presenting Author: Adeena Arain, BS, Dental Student, University of Texas School of Dentistry at Houston

Refugee Oral Health - you may be wondering, "why is this important?" It appears that dentistry and systemic health go hand-in-hand. Recent studies have found a major link between the oral microbiome and hypertension. This is just one example of how oral health plays an important role in systemic health. By providing oral hygiene instruction and nutrition counseling, our aim has been to improve the overall systemic health of Houston's refugee population. Our project addresses oral health disparities amongst the Houston refugee population by hosting various dental education classes in the local refugee community. In addition to providing oral hygiene instruction, the project will be molded by the responses from needs based assessments completed directly by the population of interest. Dental treatment is both costly and time consuming. The objective of this project is to minimize dental complications in the Houston refugee population by encouraging preventative dentistry and raising oral health awareness while simultaneously establishing relationships, support, and empowerment among the participating refugee population. This project will be funded entirely by the Albert Schweitzer Foundation and supported by Amaanah Refugee Services.

Source of Funding: Albert Schweitzer Foundation

(78) Creating a Climate of Oral Public Health Connections in a Transitional Housing Community: Dental Hygiene Students Promoting Oral and Systemic Link

Presenting Author: PranayanChakma, DH student, Dental Hygiene Student, West Coast University

Aim: The aim of this project was to provide education, awareness, and promotion of a healthy oral hygiene regimen to the residents of the Chapman House community in Long Beach, California.

Target Population: The Chapman House community consisted of female adults who were on parole that have struggled with substance abuse, behavioral/mental disabilities, low socioeconomic status, lack of higher education, traumatic experiences, having no knowledge of dental hygiene, and lack of dental care.

Results: It was found that the female parolees were able to retain information from the presented PowerPoint based on their answers from the spinning wheel game. The group was able to understand the relationship between oral and systemic health. There was an acceptance of fluoride varnish application from the population group after given education on its use.

Conclusion: The visit to the Chapman House served as a beneficial opportunity to educate an unrepresented audience, implement the planned dental hygiene educational program, accomplish the goals and objectives based on the lesson plan, and motivate change.

Source of Funding: school