Poster Number 1

IMPROVING ORAL HEALTH RELATED KNOWLEDGE OF HEALTHCARE WORKERS IN KORARO MILLENNIUM VILLAGE CLUSTER IN ETHIOPIA

Objectives: The purpose of this study was to determine whether an innovative approach which focuses on capacity building and community empowerment would improve the oral health related knowledge and skills of the healthcare workers in Ethiopia. Methods: A pilot study was conducted among health extension workers (HEW), nurses (NO), midwives (MW), and health-officers (HO) residing in Koraro Millennium Village Cluster in Ethiopia. Participants attended a 2-day interactive workshop that focused on the diagnosis of oral diseases prevalent in Ethiopia and addressed oral hygiene and unhealthy traditional practices. Participants were interviewed by trained research team members and evaluated via structured questionnaires. Summary statistics were calculated and McNemar’s tests statistics were employed to examine the change in the participants’ oral health-related knowledge and skills. Results: McNemar’s tests were used to compare proportion of HEW oral health related knowledge on specific items. For example, the proportion of HEW who believed that worms and consuming staple crops caused dental decay was 66.7% and 42.9% respectively before attending the educational intervention, following attending the workshop a 100% and 81% of the HEW respectively understood that dental decay is not caused by worms and crops. An exact McNemar’s test determined a statistically significant difference in the proportion of HEW who believed that worms causes dental decay pre and post intervention, p = .000 and p=.021 respectively. Conclusions: Participation in the workshop resulted in improved oral health related knowledge and skills of healthcare workers enabling them to educate Koraro village community members on oral health.

Source of Funding: GlaxoSmithKline. The MPH candidacy is supported by 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. Student project support provided by the Columbia University IFAP Global Health Program.

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Poster Number 2

DENTAL STUDENTS’ PERCEPTIONS OF A COMMUNITY SCHOOL SEALANT PROGRAM – A RETROSPECTIVE STUDY

Objectives: The objective of this study was to analyze reflection assignments from a cohort of dental students (112 dental students) who were required to have a three day rotation with a school sealant program. Methods: Quantitative and qualitative data were collected during reflection periods before and after the student’s required rotational experience with the school sealant program. Quantitative data was compared between the students’ pre- and post-survey responses. Key themes were extracted from open-ended reflection questions that dental students completed, including how the rotation impacted their understanding of oral health disparities and how this experience would impact their attitudes and actions as a dentist in the future. Results: The majority of dental students reported higher positive responses to the program during their post-rotation surveys as compared to their pre-rotation surveys. In addition, many students reported "significant learning experiences" while serving on this required
community-based educational rotation. Conclusions: Involving dental students in school sealant programs enables students to see a broader variety of patients with varying levels of oral health. Community-based dental education can have a positive impact on dental students and may increase the dental student’s awareness of underserved populations and access to care issues as well as their sense of responsibility to treat these patients once they graduate. This particular school sealant program encouraged dental students to consider how they can address childhood dental decay and access to dental care issues in the communities they intend to practice upon graduation.

Source of Funding: NONE

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Poster Number 3
EFFECTIVENESS OF A SCHOOL-BASED DENTAL WORKFORCE MODEL ON ORAL HEALTH

Objectives: This program evaluation evaluated the effectiveness of an alternative school-based dental workforce model by examining the effects of encounter intensity on changes in decay, restorations, and treatment urgency. Methods: A repeated measures design was used to longitudinally examine secondary data from electronic medical records of student participants (n=293) from 2012-2015. Encounter intensity, calculated by dividing the number of encounters by the months of participation and multiplying by 100, was developed to normalize data. Linear regression tests evaluated encounter intensity in relation to changes in decay, restorations, and treatment urgency. Pearson correlations measured the strength of association between encounter intensity, change in decay, change in restorations and change in treatment urgency.

Results: As encounter intensity increased there was a significant decrease in decay (-4.29), increase in restorations (5.70), and reduction in treatment urgency. Pearson correlations revealed as encounter intensity increased there was a significant decrease in decay (-0.167), increase in restorations (0.221), and reduction in referral urgency (0.188). The strength of the associations was relatively small but did support the regression outcomes. Conclusions: The alternative school-based dental workforce model was able to clinically improve oral health in an underserved population of children while overcoming barriers which typically restrict access for at risk populations. This outcome is clinically meaningful when considering the impact of poor oral health in relation to overall health, self-esteem, quality of life, school performance and school attendance in children. For further improvement, a referral case manager and an increase in the number of participants should be implemented.

Source of Funding: Supported by the University of Missouri Kansas City School of Dentistry Summer Scholars Program.

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Poster Number 4
APPALACHIAN RURAL DENTAL EDUCATION PARTNERSHIP (ARDEP)

Background: Oral health disparities with adverse economic outcomes across the lifespan are well documented in Kentucky’s rural Appalachian counties. Children, adults and seniors have very poor oral health and oral health literacy, with indicators near or at the lowest in the nation. A comprehensive, long-term development strategy is needed to improve health, education and economic outcomes for the region. Objectives: Develop a strategic partnership between Morehead State University and the University Of Kentucky College of Dentistry under the
auspices of the Kentucky Oral Health Network, which leverages the strengths of each university and also public health, community health and other non-profit organizations in this region of Appalachia. Methods: The Appalachian Rural Dental Education Partnership (ARDEP) was established in 2013 to increase opportunities for Kentuckians from Appalachian counties to pursue dental education and practice as a career choice, improve the numbers and distribution of dentists practicing in Kentucky’s Appalachian counties, improve oral health literacy and demand for care, and develop financially sound oral health models to benefit the economic base and societal improvements in Appalachia. Results: By 2015 the innovative ARDEP has established a variety of sustainable projects. These consist of a strong in-region K-12 early dental pipeline program, an MSU Campus Dental Pipeline Program including for credit online oral health courses, and a regional oral health literacy and dental services program with university and community partners. Conclusion: The MSU/UK ARDEP partnership is providing important new models to guide infrastructure development that helps improve oral health and workforce capacity in Appalachia.

**Source of Funding:** Appalachian Regional Commission

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**Poster Number 5**

**INTEGRATION OF ORAL HEALTH WITH PRIMARY CARE IN PATIENT CENTERED MEDICAL HOMES: MASSACHUSETTS COMMUNITY HEALTH CENTERS AND THE QUALIS FRAMEWORK**

Objective We seek to build capacity within community health centers (CHCs) to deliver oral health services in primary care. This project leverages our expertise in quality improvement and Patient-Centered Medical Home (PCMH) practice transformation, and builds on our commitment to help CHCs deliver whole-person care to vulnerable patients. As a leading Primary Care Association (PCA), we believe our success in this project will serve as a model and catalyst for others. Methods The League used the “Oral Health Delivery Framework,” developed by Qualis Health and the National Interprofessional Initiative on Oral Health (NIIOH). This framework aligns with HRSA’s Core Clinical Competencies for Oral Health in Primary Care and The Change Concepts for Practice Transformation. The framework is supported by implementation resources and tools, which were field-tested among the selected 5 centers. Lessons from our experience will be captured and shared with NIIOH to help improve the resources for others. Results In summary, this project has resulted in: • Improved access to primary care oral health services in 5 CHCs; • Increased access to dental care through improved collaboration and communication with community-based dentists; • Increased awareness among primary care teams and leaders of the importance of oral health care; • Enhanced PCMH implementation, resulting in improved quality, efficiency, and patient experience Conclusions: Although this project is in the early stages of development and testing; preliminary data shows the value and effectiveness of integrating oral health into primary care workflows. We will discuss the successes, challenges, and data associated with implementation.

**Source of Funding:** Funding for this initiative has been provided by the DentaQuest Foundation.

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Poster Number 6
ORAL HEALTH WORKFORCE DEVELOPMENT IN THE FEDERATED STATES OF MICRONESIA

Presenter: Marcelle Gallen
Co-Authors: Ohnmar Tut, Peter Milgrom

Objectives: This report describes a full-time 3-month in-residence, training and re-certification of 15 indigenous Dental Assistants from Federated States of Micronesia. Most were on-the-job trained and few had access to CDE. The goal was to train core staff from each island to support quality improvement. Methods: Lectures and clinical training included assisting skills and expanded duties and evidence-based methods for prevention of dental caries. An additional goal was to support implementation of a surveillance program using the ASTDD Basic Screening Survey. Trainers included external experts and local public health and medical staff. Trainees were formally evaluated and gave evaluations of the instruction. Results: The 15 DAs had an average of 6 years of experience (range 0 to 18 years). All completed training and re-certification. Trainee evaluations were positive (3.0-4.0 on a 4-point scale). As part of the clinical practicum, topical PVP Iodine and Fluoride Varnish were applied on 866 of 1025 (84%) children aged 5 in 34 enrolled Early Childhood Education Centers and sealants were placed on 158 of 304 (52%) children in eleven 1st grade classrooms during the first quarter of 2015-16 school year in Pohnpei State. Follow-up is underway. Supervised tooth brushing program with fluoridated toothpaste was introduced. Data collection for establishing a surveillance system using BSS was initiated. Conclusions: Comprehensive training for indigenous staff was accomplished. Ongoing work addresses the need for dentist continuing education, public health and education staff. Consistent dental caries surveillance will allow monitoring of progress.

Source of Funding: HRSA Grants to States to Support Oral Health Workforce Activities grant number T12HP27538 and Department of Health and Social Affairs, FSM

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Poster Number 7
PREPARING THE FUTURE DENTAL WORKFORCE FOR UNDERSERVED CHILDREN

Limited access to oral health care is a significant problem for vulnerable pediatric populations nationwide. Dental training institutions are challenged to prepare a workforce capable of addressing the needs of these underserved populations, as students often graduate without adequate instruction in core dental public health concepts. "Preparing the Future Dental Workforce for Underserved Young Child and Adolescent Populations", a five-year initiative, addresses this issue using a multi-faceted approach. Objectives: This initiative has three main objectives: I: Develop and deliver pre-doctoral dental and dental hygiene curriculum that focuses on community public health using a blended approach of group lectures and online modules. II: Enrich community-based clinical experiences utilizing technology in tele-dentistry and inter-professional training with nurse practitioner and dietetic students. III: Establish leadership activities including a guided mentorship program, community-based services, and a public health certificate. Methods: This initiative began July 1, 2015 with a twelve month planning period. Program impact will be determined by measuring the following outcomes: 1) student self-reflections, 2) student surveys on attitudes and behavioral intent, and 3) alumni surveys on career activities. Results: During the planning year, the following was accomplished: 1. Developed curriculum, including inter-professional modules on behavior guidance and pediatric oral health. 2. Enhanced dietetic and nurse practitioner student rotations. 3. Developed mentored leadership program. 4. Recruited students for combined DDS/Certificate in Public Health program. Conclusions: It is anticipated that after completing the training developed by
this initiative, dental and dental hygiene graduates will be more likely to provide care for underserved pediatric populations.

**Source of Funding:** 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 D85HP28495, Predoctoral Training in General, Pediatric, and Public Health Dentistry and Dental Hygiene. 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.

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**Poster Number 8**

INTEGRATION OF ORAL HEALTH WITH PRIMARY CARE: LEVERAGING THE DENTAL HYGIENE WORKFORCE TO EXPAND THE PRIMARY CARE TEAM

Objectives: Collaborative multidisciplinary healthcare teams working in various settings across the health system are imperative to effectively address oral health disparities in America. An innovative workforce model integrating dental hygienists on a physician-led primary care team has been developed. The primary purpose of this study was to understand the perspectives and acceptance of this model among providers and patients. Methods: Multidisciplinary teams, including family medicine residents, dental hygiene students, and faculty preceptors tested the model at a family practice center. Teams performed and documented risk assessment, oral health evaluation, preventive intervention, communication and education, and dental care coordination for patients reporting not having received dental care within the last 12 months or not having a dental home. Field notes and focus groups were used to collect team/patient/guardian perspectives/experiences. Results: Oral healthcare services were provided to ten pediatric patients. Eight presented with active dental caries. Abscesses were observed in two, one presented with early childhood caries. Patients/guardians reported satisfaction with accessibility and quality of care. Residents reported enhanced oral health knowledge/competency, intention to incorporate oral health skills into practice, and desire to practice with dental hygienists. Dental hygiene students reported participation enhanced their knowledge of primary care and reported a desire to explore future opportunities in primary care. Conclusions: Findings from this study suggest a primary care team which includes dental hygienists benefits patients and is likely to be embraced by care teams and patients. Additional research is needed to determine the long term effectiveness and sustainability of this innovative model.

**Source of Funding:** None

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**Poster Number 9**

CASE STUDIES OF 8 FEDERALLY QUALIFIED HEALTH CENTERS: STRATEGIES TO INTEGRATE ORAL HEALTH WITH PRIMARY CARE

Objectives: This study examined federally qualified health centers’ (FQHC) efforts to integrate primary care and oral health care services and to identify alternative workforce models that increased their capacity to serve patients. Methods: The study was qualitative and used a series of 8 case studies of FQHCs providing services in 9 states, with different oral health workforce regulatory frameworks. Results: FQHCs varied in the strategies used to integrate oral health and primary care services. Some of the variation was attributed to differences in local need. FQHCs often used electronic record systems to facilitate integration. An integrated electronic
medical and dental record system was the bridge to integrated service delivery, contributing to better communication between medical and dental providers, to the quality of care provided, and to improved patient outcomes. Innovative workforce models were effective in case finding, improving population oral health literacy and in extending clinical capacity in FQHCs. Employing oral health workforce in primary health clinics, especially during pediatric visits, was effective in helping parents to understand the value of preventive oral health services for their children. In some instances, FQHCs engaged primary care clinicians to provide oral health screening and referral services. When used effectively, workforce innovation is an important tool to increase access to oral health services. Conclusions: FQHCs have the potential to provide both medical and dental homes for their patients. FQHCs can further understanding of how oral health and medical health services can be effectively integrated in care delivery systems.

Source of Funding: This project was funded through a cooperative agreement for a Regional Center for Health Workforce Studies, the Oral Health Workforce Research Center, with the Health Resources and Services Administration of the U.S. Department of Health and Human Services

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Poster Number 10
MAPPING OF NORTH DAKOTA COUNTY-LEVEL DATA TO EXAMINE DENTAL WORKFORCE DISTRIBUTION, ORAL HEALTH RISK FACTORS AND OUTCOMES USING 2014 ND DENTAL LICENSING BOARD AND 2012-2014 BEHAVIORAL RISK FACTOR SURVEILLANCE DATA

Objectives Shortages and maldistribution in the dental workforce are concerning in rural states such as ND, which as of 2014, had only 403 dentists. We purposed to map and examine correlations between ND county-level dental workforce distribution and age-adjusted oral health risk factors and outcomes. Methods Dental workforce data acquired from the ND Board of Dental Examiners and risk factor data from the ND BRFSS were analyzed in SAS 9.3 and mapped in ArcGIS 10.2. Dentists per capita, and age-adjusted estimates were generated and mapped for the prevalence of >=6 permanent tooth extractions and proportion of adults >=18 who had not had a dental visit in >1year. Quintiles were used to classify -and map by county- dental workforce per capita, dental visits per year, and tooth extraction prevalence. Results ND had approximately 55 dentists per 100,000 residents with 56% of the dentists concentrated in 3 counties. Sixteen counties had no dentists. Eighteen to 36% of the populations in the 10 bottom (5th quintile) counties had >= 6 permanent teeth extracted and 47 to 65% of the populations in the 10 bottom (5th quintile) counties had not visited a dentist in more than 1 year. In comparing dentists per capita with dental visits and tooth extractions, the Spearman correlation coefficients of 0.10 and -0.23, respectively, indicated no correlations. Conclusions While these results indicate no strong correlations between dental workforce availability and statewide oral health risk factors and outcomes, future studies will attempt to investigate confounding factors that may influence this relationship

Source of Funding: State Oral Disease Prevention Program
CDC-RFA-DP13-1307
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Poster Number 11

ORAL HEALTH TRAINING FOR PROFESSIONAL CAREGIVERS IN ASSISTED LIVING COMMUNITIES IN OREGON - ORAL HEALTH FOR SENIORS PROJECT

Objectives: The objectives of this study were to explore the oral health assistance activities performed by the professional caregivers and to train them with preventive oral health practices for the residents.

Methods: A curriculum was developed by the Oregon Oral Health Coalition’s Adult/Geriatric Action Committee, comprised of dentists, dental hygienists, and administrators. Topics included general oral health for seniors, disease prevention and identification, oral-systemic connection, and implementation of daily oral hygiene. The caregivers completed pre-training questionnaires, and feedback forms upon completion of the training. Numeric values were calculated, and qualitative responses were coded into subcategories.

Results: There were 10 of 33 Assisted Living Communities which participated in the study, and 265 care providers received training. Of the pre-training surveys, 53.6% noted poor attention to oral health among residents and 50% indicated providing oral health assistance, including prompting and setup (23.8%), brushing assistance (12.9%), denture cleaning (4.8%), and comprehensive oral health care including flossing (21.4%). Although 83.3% of the caregivers felt sufficient in meeting the oral health needs of residents, feedback forms indicated that 95.8% of the attendees learned new information and skills. All Assisted Living Communities reported an improved capacity to provide oral health care to residents.

Conclusion: There is a critical need to better equip the caregivers with appropriate oral health training. The Oral Health for Seniors Project was successful in training caregivers in Assisted Living Communities. Similar interdisciplinary initiatives are needed to reduce oral disease among seniors by integrating preventive oral health practices into daily care.

Source of Funding: Oregon Department of Human Services

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Poster Number 12

EVOLVING DELIVERY MODELS FOR PROVIDING DENTAL CARE SERVICES IN LONG-TERM CARE SETTINGS: PRACTICE AND POLICY

Objectives. The purpose of this study is to advance understanding of current practice models utilized in providing dental services in Long-Term Care (LTC) facilities and to examine policy variables that impact the availability of oral health services in LTC settings and their range of variation across the country.

Methods. Four state-based case studies were conducted in California, Florida, Minnesota, and North Carolina and entailed in-depth, qualitative interviews with both dental and LTC providers. Secondary data and literature were assessed to identify regulatory, workforce, and reimbursement policy that impacted care delivery. Further state by state examination of the policy variables identified the range of variation across the country.

Results. A continuum of LTC dental models extend capacity beyond the traditional dental office and involve complex inter professional collaboration. Few models are fully self-sufficient, rather they conform to state Medicaid policy, scope of practice laws (particularly for dental hygienists), available training resources, and other regulations governing mobile and/or tele-dentistry. Standards for dental care for the LTC population from which to design appropriate policy are lacking, and States exhibit wide variation in providing a supportive environment for the complexity of LTC dental practice.

Conclusions. Despite significant challenges to arranging oral health service delivery in LTC facilities, strategies continue to evolve to address the need for these services among people living in nursing homes and other LTC settings. Best practices have been identified at the micro level but are rarely supported or codified at the organizational, professional, and policy levels.
Source of Funding: Funding: Health Resources and Services Administration, Cooperative Agreement U81HP27843 and he UCSF Student Summer Research Fellowship via Dr. Brian Bast in the Department of Oral and Maxillofacial Surgery. This information or content and conclusions are those of the authors 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. Authors: Presenting Author Elizabeth Mertz, PhD, Center for the Health Professions, Department of Preventive and Restorative Dental Sciences, University of California, San Francisco; Author Cynthia Wides, MA, UCSF School of Dentistry; Author Keely Walgama, LMSW, UCSF School of Dentistry

Poster Number 13
DOES STATE LEVEL DENTAL HYGIENE SCOPE OF PRACTICE AFFECT INDIVIDUAL ORAL HEALTH OUTCOMES?: A MULTILEVEL MODELING ANALYSIS ACROSS TIME

Objective. This research examines the relationship between the professional scope of practice for dental hygienists at the state level and the oral health of individual adults nested within those states at two points in time, 2001 and 2014. Methods. In order to establish validity, each state-level scope of practice (SOP) index score (2001 and 2014) and its four component scores for regulation, supervision, tasks, and reimbursement were subjected to factor analysis. Both exploratory and confirmatory factor analysis indicated a one factor model. Multilevel logistic modeling was conducted to analyze the effect of state scope of practice on population oral health outcomes, after controlling for relevant state and individual level factors. BRFSS surveillance data at the state level was used to measure population oral health outcomes. Results. A comparison between the SOP scores for 2001 versus 2014 indicated that high scoring states in 2001 continued to be high scoring in 2014, while some lower scoring states experienced a significant increase. A total of 10 multilevel models were run; the composite scope of practice score and each of four constituent parts in each time period were run separately. The Scope of Practice composite indices were statistically significant in both 2001 and 2014. Conclusions. Professional dental hygienist SOP exerts a significant effect on population oral health outcomes, with notable differences between the two years.

Source of Funding: This research study was supported by the Health Resources and Services Administration of the U.S. Department of Health and Human Services under a cooperative agreement with the New York Center for Health Workforce Studies.

Authors: Author Tracey Continelli, PhD, The Sage Colleges; Author Margaret Langelier, MSHSA, Center for Health Workforce Studies, School of Public Health, University at Albany; Presenting Author Jean Moore, DrPH, Center for Health Workforce Studies

Poster Number 14
EXPERIENCE WITH DENTAL EMERGENCY DEPARTMENT VISITS

Background: Visits to the emergency department (ED) for dental problems are on the rise. Often times these visits offer no definitive treatment, are costly, and would be better treated in a dental office. Objective: The purpose of the study was to evaluate dental ED visit data from a local hospital and examine the experience with dental ED visits of patients at a new dental school. Methods: This two part study consisted of an analysis of ED records and a questionnaire dispensed at the new dental school. Results: There were 6,114 dental ED visits, accounting for 1.90% of ED visits from 2011 to 2015. The percent of dental ED visits compared to all ED visits decreased from 1.96% in 2011 to 1.71% in 2015. Three diagnostic codes accounted for 91.2% of dental ED visits. Self reported ED use showed that 12.5% of patients surveyed had a prior dental ED visit. The majority of patients reported they did not have a dentist, had a chief complaint of a toothache and/or broken/chipped tooth, and reported treatment with pain pills and/or antibiotics. Conclusion: Since opening clinics in 2013, visits to the dental school have
continued to increase. During the same period, dental-related ED visits at the local hospital decreased. Patients surveyed with a dental-related ED visit reported that the primary reason for dental ED use was related to not having a dentist. Further research will be conducted to evaluate the impact of the new dental school on dental ED visits at the local hospital.

**Source of Funding:** Departmental funding at ECU School of Dental Medicine

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**Poster Number 15
REVIEW OF TWO SCHOOL-BASED ORAL HEALTH PROGRAM MODELS: PRIVATE PROVIDER VS. DIRECT SERVICE**

Objectives: To explore the benefits and limitations of a private provider-based School-Based Oral Health Program (SBOHP) compared to a direct service model. Methods: The research team compared the aggregated number of schools and students served from the two models, as well as their cost. Qualitative data from partner agencies were also collected and analyzed. Results: Academic Year 2011-2012 (Sep- May 2015, last year of Direct Service Model) # of schools that received Oral Health services: 6 # of students that received Oral Health services: 1,205 # of DOH Oral Health staff: 3 Allocated spending: $200,000 Academic Year 2015-2016 (Sep- Dec 2015, Private Provider Model) # of schools that have received Oral Health services: 62 # of students that have received Oral Health services: 1,620 # of DOH Oral Health staff: 4 Allocated spending: $125,000 Conclusion: After years of providing direct services, the District of Columbia Department of Health (DOH) moved to a formal partnership with private providers in implementing an SBOHP in all DC public schools and public charter schools. The Direct Service Model allowed DOH to have more control over the quality of the dental service provided to schools. DOH was also able to provide dental services to schools in areas with a shortage of dental providers accepting Medicaid. Through the provider-based SBOHP model, providers receive administrative, logistical and representational backing from DOH. Since the launch of the provider-based SBOHP model, there has been an increase in the scope and reach of the DC DOH Oral Health Program.

**Source of Funding:** None

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**Poster Number 16
THE PROXIMITY OF IOWA DENTISTS WITH RETAIL INDUSTRIES**

Objective: Since retail businesses and health professional offices are not evenly distributed geographically, this study explores proximal relationships between dental offices and retail merchants and service industries. We test the hypothesis that dentists congregate near each other and specific retail merchants, especially in more highly urbanized communities. Methods: Data included the National Establishment Time Series about dental practice and retail locations in Iowa and Standard Identification Classification codes (52 through 59) to differentiate types of retail sector businesses. Dental office clusters (N=54) were identified based on a version of the Delauney triangulation process and then tested to determine if any type of retail industry was disproportionately represented within clusters. Results: The highest percentages of retail industries within dental clusters were apparel and accessory stores (74%); home furniture,
furnishings and equipment stores (66%); and eating and drinking places (60%). Optical goods (86%) led the refined classification list of primarily dry or non-perishable goods or services to appear within dental clusters. The least frequent associations among retail firms and dental offices included lumber and other building materials (48%), florists and service stations (each at 47%), and recreational vehicle dealers (42%). Conclusion: Within established dental clusters, specific types of retail goods and services appear to disproportionately co-exist in close proximity. Similarly, there is avoidance with retailers that provide construction, transportation services, and some perishable good producers. Health planners should take into account proximity patterns as they develop strategies for improving geographic dispersion of dental practices.

Source of Funding: Health Resources and Services Administration, DHHS (T12HP14992)

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Poster Number 17
DENTAL SERVICES UTILIZATION AMONG A HARD-TO-REACH HIV POSITIVE AND AT-RISK FOR HIV POPULATION AT DOMINICAN SISTERS FAMILY HEALTH SERVICES (DSFHS) IN SOUTH BRONX, NEW YORK CITY

Background: Despite public financing through the Ryan White Care Act, utilization of dental services among people living with HIV/AIDS (PLWHA) remains low due to barriers associated with stigma, language and access to care. The dental utilization behaviors of hard-to-reach and disadvantaged PLWHA and populations at risk for HIV have not been documented. Objective: To describe the dental services utilization behaviors of hard-to-reach populations of PLWHA and at risk for HIV, served by DSFHS, a social services agency, in South Bronx. To improve access and utilization of dental services in this vulnerable population, Columbia University College of Dental Medicine partnered with DSFHS to provide oral health outreach, dental screenings and linkages to dental services. Methods: A retrospective chart review of a convenience sample of 87 DSFHS’ adult clients who received outreach and dental screening was conducted. SPSS v 23 was used for data management, descriptive and bivariate analyses. Results: 44 (50.5%) participants were HIV-negative and 43 (49.5%) were HIV-positive. Preliminary data indicate that higher proportion of HIV-positive clients have dental insurance (83.7%) vs HIV-negative (54.5%); and higher proportion of HIV-positive clients (30.2%) visited the dentist in past six months vs HIV-negative clients (9.1%), and a larger proportion of HIV-positive clients reported emergency dental visits (25.6%) vs HIV-negative (11.4%). Conclusion: Although a larger proportion of disadvantaged PLWHA reported visiting dentist than individuals at risk for HIV/AIDS, a small proportion reported regular dental visits suggesting that improving access and utilization of dental services in this vulnerable population is vital.

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Poster Number 18
STATE-LEVEL RELATIONSHIP BETWEEN DENTISTS’ CHIP PARTICIPATION AND REIMBURSEMENT RATES

Background Numerous studies have documented that low reimbursement rates are related to dentist satisfaction with their participation in Medicaid. Objective To describe the state-level relationship between reimbursement rates and patient-to-dentist participation rates in the Children’s Health Insurance Program (CHIP). We hypothesize that states with higher reimbursement rates will have lower patient-to-dentist ratios. Methods CHIP enrollment data for 2012 was obtained from the Center for Medicare and Medicaid Services. Practitioner participation data was obtained from the Medicaid-CHIP State Dental Association’s National Profile Survey. Patient-to-dentist ratios were calculated by state. A reimbursement rate index for pediatric dental care was obtained from the ADA’s Health Policy Institute. Patient-to-dentist ratios were plotted against reimbursement rates to generate an R-squared value to describe the state-level reimbursement-participation relationship. Results In 2012, the average patient-to-dentist ratio across all states was 77:1; median 69:1. Lowest ratio was in New Mexico 11:1; highest in Tennessee 176:1. Pediatric dental Medicaid reimbursement rate index as percentage of usual, customary, and reasonable charges ranged from 26.7% (MN) to 81.1% (DE). There was no statistically significant relationship between reimbursement and patient-to-dentist ratio with an R-squared value of 0.0319. Conclusions While low reimbursement rates are often reported as a primary determining factor on whether or not to participate in dental Medicaid, at the state level, there seem to be other factors affecting participation rates, as well as potential differences in how states report these data that might affect these results.

Source of Funding: Financial support through a University of Iowa College of Dentistry and Dental Clinics’ Dows Research Fellowship. Data provided by Mary Foley and the Medicaid-CHIP State Dental Association. Data also obtained from the ADA Health Policy Institute.

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Poster Number 19
THE EFFECTIVENESS OF LAY HEALTH ADVISORS (LHAS) OUTREACH PROGRAM ON IMMIGRANT CHILDREN’S CARIES IN TAIWAN: COMMUNITY RANDOMIZED TRIAL

Objectives: Prior to this study, no oral health promotion program for immigrant children was conducted using Lay Health Advisor (LHA) intervention approach. The aim is to evaluate effects of LHA outreach program on immigrant children’s caries experience. Methods: A community-randomized experimental design was used. Vietnamese and Indonesian women who have 2-6 years old children were recruited and randomized into the LHA intervention or brochure only group. Overall, 31 and 26 mothers were assigned into experimental and control group. Each LHA taught assigned mother about oral hygiene knowledge and techniques four times at 4-week period. Each immigrant’s child had an oral examination by well-trained oral hygienist from pre-test to follow-up. We used the caries index: dmft decayed (d), missing (m), or filled (f) tooth (t) to present the child teeth health status. Questionnaire was used to collect the data in oral health care behaviors from baseline to follow-up. Primary results: After intervention, the dmft in LHA group had significantly decreased at 3 and 9 months follow–up (P=0.007 and 0.006, respectively), however there was no significantly difference between LHA and control group. A higher proportion of immigrant mothers in LHA group than control group assisted in their child brushing three times a day (22.58% compared with 0.00%, p=0.017), and reported brushing...
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child’s teeth for 3 minutes (54.84% compared with 15.38%, p=0.004) at post-test Conclusion: The LHA intervention was effective on improving immigrant children’s caries in LHA group.

Source of Funding: None

Authors: Presenting Author Yi-Ching Lin, Kaohsiung Medical University, Taiwan; Author HSIAO-LING HUANG, Kaohsiung Medical University

Poster Number 20
COMMUNITY-BASED DENTAL PARTNERSHIP PROGRAM: IMPROVING ACCESS TO DENTAL CARE FOR YOUTHS LIVING WITH HIV/AIDS

Introduction: HRSA’s Community Based Dental Partnership Program (CBDPP) seeks to increase care for people living with HIV/AIDS while also training dentists in their care. Minority adolescents and young adults with, or at high risk for, HIV/AIDS constitutes a particularly marginalized and vulnerable population that is difficult to access and engage in routine dental care. Columbia University College of Dental Medicine (CDM) partners with the Columbia University Medical Center Department of Infectious Disease’s “Services to At-risk Youth Program (Project STAY)” to address this population. Aim: To describe the design and impact of CBDPP on increasing oral health knowledge and dental care for Project STAY clients. Methods: Through CBDPP, CDM arranges weekly visits with Project STAY clients by two Dental Public Health postdoctoral trainees who deliver education, screening, referral, and care coordination services. Project STAY provides the public health trainees with access to its clients, holistic case management, and escorting clients to dental clinics for care by AEGD residents. Impact: At baseline in 2013, STAY’s ~100 clients reportedly sought only emergency dental care. The percentage engaged by Dental Public Health trainees increased from zero in 65% in 2015. Of the engaged clients, the percentage obtaining primary dental treatment from a total of 42 AEGD trainees over two years increased from zero in 2013 to 47% in 2015. Conclusion: In partnership with a Department of Infectious Disease, CDM’s CBDPP has established a positive trajectory educating and caring for at-risk adolescents and young adults.

Source of Funding: None

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Poster Number 21
RESOURCES FOR DENTAL COMMUNITY OUTREACH PROGRAMS

Objectives: The objective of this poster is to create an awareness of resources for dental community outreach programs recently developed by the University of Iowa’s Department of Pediatric Dentistry. Methods: Faculty members from the Department of Pediatric Dentistry have developed new resources and complied useful existing resources for health professionals to help implement dental outreach programs such as Boy Scout dental merit badge preparation, dental health presentations, and dental screening and fluoride programs. Results: CDs containing the oral health resources will be available to conference participants. Information presented in the CDs include Powerpoint presentations appropriate for Boy Scout dental merit badge preparation, grade school oral health education, narrative scripts for presentations and appropriate forms for dental screening and fluoride programs available in English and Spanish. Conclusions: Having the resources available on a CD makes them readily accessible for use by health professionals, teachers, and oral health program leaders.

Source of Funding: National Children's Oral Health Foundation: America's Toothfairy Youth Engagement Grant

Authors: Presenting Author Cathy Skotowski, RDH, MS, University of Iowa
Poster Number 22
SELF-RATED ORAL HEALTH AND DENTAL VISITS AMONG OLDER ADULTS RECEIVING SERVICES FROM THE ADMINISTRATION ON AGING

Objective: To analyze data from newly introduced oral health questions among recipients of the Administration on Aging (AoA) Community-Based Services (C-BS) survey. Methods: Responses were analyzed from 3,995 individuals, age 60 and older, from the 2014 National Survey of Older Americans Act Participants (NSOAAP) covering five C-BS groups: home-delivered meals (HDM), congregate-meals (CM), case-management (CS), homemaker services (HM), and transportation (TR). Self-rated oral health (OH), having a dental visit within past 12 months, and reasons for not seeking dental care were assessed by C-BS group. Results: The majority of participants were non-Hispanic white (71%), female (73%), and lived alone (57%). The mean age was 79 years. About 67% of participants reported annual income below $20,000. Most participants were satisfied with their OH (9% excellent, 21% very good, 35% good) and 35% were unsatisfied (19% fair, 16% poor). Overall, 43% of participants reported having a dental visit within past 12 months. The reason most frequently reported for not seeking dental care was financially-related. CM individuals reported higher OH satisfaction (73%) and higher likelihood of a dental visit within past 12 months (56%); while HM individuals reported the lowest OH satisfaction (61%) and the lowest rate of dental visits within past 12 months (38%). Conclusion: Dental visit frequency and OH perception were included for the first time in the 2014 NSOAAP survey of community-based services. Understanding OH issues among recipients of these services could inform future program planning and allocation of resources to help improve the OH of older adults receiving C-BS.

Source of Funding: NIH Intramural Research Training Award to Steffany Chamut

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Poster Number 23
RHODE ISLAND (RI) PREGNANT WOMEN’S RECEIPT OF ORAL HEALTH CARE AND REPORTED BARRIERS: 2012-2013 PREGNANCY RISK ASSESSMENT MONITORING SYSTEM (PRAMS)

Objectives: Report RI women’s receipt of oral health care during pregnancy, identify experienced and perceived barriers to care, and support the development and implementation of perinatal oral health programs in RI. Methods: Using 2012-2013 RI PRAMS data, responses from 2,413 women were analyzed (weighted response: 63%). Women’s oral health care during pregnancy was assessed with reported barriers, using SAS® 9.4 survey procedures to account for complex survey design and adjusted response rate. Results: During pregnancy, 58% of RI women (95% CI:56-60%) had a dental cleaning and 55% (95% CI:53-57%) received oral health education from a dental or other health care provider. Receipt of a dental cleaning was significantly lower among WIC participants, compared to non-WIC participants. Over one-third of RI women (35%, 95% CI:33-37%) and almost half of WIC participants (46%, 95% CI:43-50%) indicated at least one barrier to care (lack of dental coverage, belief that dental care during pregnancy was unsafe, inability to afford care, considering oral care during pregnancy unimportant, or difficulty finding dental providers accepting Medicaid and/or pregnant women). Encountering a barrier was significantly associated with a lower likelihood of preventive oral health care and education during pregnancy. Conclusion: Disparities exist regarding oral health care among RI pregnant women. Directing resources to target vulnerable populations with
significant dental need, such as WIC participants, is suggested to improve prenatal oral health. Incorporating oral health information and referral resources into WIC programs, which enroll over a quarter of RI pregnant women, may increase access and utilization of dental services. **Source of Funding:** Funding Sources: Cooperative agreement DP13-1307 between the Rhode Island Department of Health Oral Health Program and the Centers for Disease Control and Prevention and cooperative agreement HRSA-15-070 between the Rhode Island Department of Health Oral Health Program and the Health Resources and Services Administration. **Authors:** Presenting Author Rachel King, DDS, MPH, NYU Lutheran Dental Public Health Residency Program; Author Junhie Oh, BDS, MPH, Rhode Island Department of Health Oral Health Program; Author Laurie Leonard, MS, Rhode Island Department of Health Oral Health Program

**Poster Number 24**

**SYNTHETIC ESTIMATION OF DENTAL CARE UTILIZATION AND EXPENDITURE FOR NEW YORK STATE USING DATA FROM MEPS**

Objectives: To calculate state-level synthetic estimates of dental care utilization and expenditure for New York State (NYS) using Medical Expenditure Panel Survey (MEPS) data. Methods: Data from MEPS (2012) for national and NorthEast region were used including demographic factors (age, gender, race, ethnicity, federal poverty level, and educational attainment), dental care utilization and expenditure. Synthetic estimation, a method for calculating prevalence estimates of local area health conditions combining local area descriptive/demographic data with national data, was used in this study. The measures for dental utilization and expenditure were the proportion of population with at least one dental visit and the average dental expenditure in the past year respectively. Descriptive and regression data analyses were performed. Demographic distribution for NYS was determined from Census 2012 data and synthetic estimates of utilization and expenditure for New York City and rest of NYS were calculated. Results: About 33.8% of U.S. population and 35.6% of the NorthEast population had at least one dental visit in the last year. NYS synthetic estimates for dental utilization were: by age, (21.4%), gender (35.6%), race (32.6%), ethnicity (36.2%), poverty level (14.9%), and education (35.5%). The average dental expenditure was $595.62 in the U.S. and $583.08 in the NorthEast region. NYS synthetic estimates for dental expenditure varied by different demographic factors ranging from $492.70 to $622.16. Conclusions: Nationally representative synthetic estimates of dental utilization and expenditure for NYS are quite similar to the national data but vary slightly relative to the demographic distribution within the state. **Source of Funding:** None **Authors:** Presenting Author Neelam Jadeja, BDS, MPH, Eastman Institution for Oral Health, University of Rochester; Author Changyong Feng, PhD, University of Rochester; Author Sangeeta Gajendra, DDS, MPH, MS, Eastman Institution for Oral Health, University of Rochester

**Poster Number 25**

**ROCHESTER ORAL HEALTH CARE FOR KIDS (ROCK) PROJECT**

Objective: i) To describe a community-based oral health project for children in Rochester, NY. ii) To assess the current access to dental care needs of the children. Method: Children (1-7 yrs) and their parents/caregivers at the selected day care centers (WIC, HeadStart, YMCA, IBERO, and Pines of Perinton) are recruited in this project (July 2015-June 2016). The project involves dental screenings of children enrolled and referrals for comprehensive dental care to provide a dental home and oral health education for parents/caregivers. A self-administered survey was given to the parents for information on their children’s access to dental care. Descriptive data analyses were performed. Results: The project is underway and data collection has started at all selected daycare centers. The response rate ranged from 9% to 60%. Access to care survey
findings (n=328) revealed that 53.4% of children visited a dentist regularly every 6 months, 13.6% occasionally, 3.1% visited only ‘if trouble with teeth’ and 29.3% had never visited a dentist. While 65.7% had visited a dentist in the last 12 months, about 34.3% had not visited one in the last 12 months. The most common reasons for not visiting a dentist were “didn’t know where to go” (5.5%), transportation (2.1%), and no time (1.5%). While 78.2% had Medicaid/CHP and 16.2% had other types of insurances, only 2.1% did not have any dental insurance.

Conclusion: This community-based project may help in improving the oral health of children in the inner city of Rochester and thus reduce the burden of oral diseases.

**Source of Funding:** American Academy of Pediatric Dentistry Foundation Healthy Smiles Healthy Children Access to Care grant

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**Poster Number 26**

**AN EXPLANATORY MODEL FOR DENTAL COVERAGE FOR THE MEDICAID EXPANSION POPULATION: HOW DO LEGISLATORS DECIDE?**

**OBJECTIVE:** To integrate socio-behavioral and political models to explain the legislative decision making process regarding dental benefits for the Medicaid expansion population, a previously uninsured population.

**METHODS:** Established political, social, and behavioral theories were identified and key components were utilized to develop a novel explanatory model. A range of attitudes, beliefs, and knowledge about oral health and dental care were considered to explain legislative decision making. The model will be tested through thematic analyses of interviews with key legislators in three states representing a spectrum of dental benefit decisions: North Dakota, with no dental benefits provided to the Medicaid expansion population, Massachusetts with full dental benefits provided and Iowa with limited dental benefits provided.

**RESULTS:** The explanatory model supplements the “Integrative Model of Voting Decisions”, created by John Kingdom, with social and behavioral constructs applied to dental-specific considerations. Incorporated are attitudes, beliefs, and knowledge regarding oral health valuation, dental care as an essential health service, public health considerations, and health care delivery aspirations.

**CONCLUSION:** The explanatory model, once tested, holds the potential to inform and refine the understanding of legislators’ approaches to oral health and dental care issues.

**Source of Funding:** U.S. Department of Health and Human Services Health Resources and Services Administration (HRSA) Post-doctoral Training in General, Pediatric and Public Health Dentistry grant to Columbia University College of Dental Medicine

**Authors:** Presenting Author Jaskaren Randhawa, DMD, Columbia University School of Dental Medicine; Author Burton Edelstein, DDS, MPH, Columbia University

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**Poster Number 27**

**ESTIMATING COSTS ASSOCIATED WITH THE STEPWISE EXCAVATION PROCEDURE: A PILOT STUDY**

Objectives: Public dental programs are at the forefront of trying to identify more cost-effective treatment options for their patients who often have limited resources or insurance coverage. One such treatment is the stepwise excavation procedure (SWP) that, when successful, may prevent the need for expensive endodontic procedures in the treatment of caries lesions. However, a drawback of SWP is that patients must return for a second appointment. Methods: A study performed at The University of Iowa College of Dentistry (UICD) showed that within 18
months after the SWP was performed in 1,326 patients, only 518 patients returned to reevaluation. The costs associated with SWP were then determined for patients; age 18 to 65 years, who had SWP in any of their teeth between 2004-2012 at the UICD. Specifically, a comparison was made between costs of SWP performed by different providers (faculty, resident and dental student) and between those who returned for a second SWP visit and those who did not. Results: Preliminary analyses show that compliance with the SWP resulted in higher costs compared to non-compliance within a period of 18 months, and costs were higher for faculty providers. More complete results will be presented along with a discussion of the progress of the study. Conclusions: Initial results showed that patients that did not return to their second appointment at the UICD (2004-2012) spent less money to those who did. However, those patients may have longer-term complications than those with completed treatments, so continued evaluation of costs are needed.

Source of Funding: Conicyt National Commission for Scientific and Technological Research (Chile).

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Poster Number 28
FEDERALLY QUALIFIED HEALTH CENTERS AND UNDERSERVED AREAS: ARE WE SERVING THE UNDERSERVED?
This study looks at the relationship between the location of Federally Qualified Health Care Centers (FQHC) and federally designated Health Professions Shortage Areas (HPSA) to see the extent to which FQHCs are found in HPSAs and how their characteristics differ by location. Geographic linkages and access to demographic data were derived from employing a Geographical Information System (ArcGIS). All data were converted to their census tract location; therefore, the number of characteristics of FQHCs in HPSAs could be analyzed as well as characteristic of FQHCs not located in an HPSA. One–Way ANOVA with a student Newman Keuls multiple range test was employed to look for differences in characteristics of HPSAs with an FQHC compared to non-HPSA areas with a FQHC. A total of 8,640 FQHCs were identified; 2,167 of the FQHCs (25.1%) were within an HPSA. Overall, 6, 491 census tracks (8.9%) had at least one FQHC. Compared to areas without a FQHC, FQHC areas had similar age structures, a higher percentage of underrepresented minorities, lower educational attainment levels, lower income levels, and a much lower population density. Among FQHCs, HPSAs had a slightly higher percentage of the population that was very young and elderly, a lower population density, lower socio- economic status levels, and a higher underrepresented minority population. Since HPSAs are defined by their lack of health care availability, the location of FQHCs in these geographic areas should be strongly encouraged.

Source of Funding: None

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Poster Number 29
ASSOCIATION OF BARRIERS TO ACCESSING CARE WITH DENTAL PAIN IN SAUDI CHILDREN
Objectives: To assess the association between barriers limiting access to dental care and dental pain in the last 6 months among Saudi children. Methods: A cross sectional survey was conducted among 6-12 years old children in September- December 2015 in 9 cities in the Eastern Province, Saudi Arabia. Families visiting local welfare organizations were invited and
those consenting were included. Parents responded to a questionnaire based on the Basic Screening Survey by the Association for State and Territorial Dental Directors (2008). Logistic regression was used to assess the association between barriers to accessing care and dental pain in children. Results: The response rate was 94.1% (670 of 712 children) and mean (SD) age was 8.5 (1.7). Of all children, 38.7% reported having dental pain in the last 6 months, 17.9% visited the dentist for regular checkup, 41.3% visited the dentist when there was pain and 83.3% brushed regularly. The most frequently reported barriers to accessing care among all children were difficulty of getting a dental appointment (4.9%), long waiting time (4.6%) and having no insurance (4%). Regular dental checkups were associated with lower odds of pain (odds ratio=0.43) whereas unsuitability of dentist working hours was associated with higher odds of pain (odds ratio=4.09). Conclusions: Regular checkups were associated with lower odds of dental pain among Saudi children whereas accessibility problem due to unsuitability of dentist working hours was associated with higher odds of pain. Absence of insurance was not significantly associated with pain when other factors were considered.

Source of Funding: None

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Poster Number 30
THE DENTAL PUBLIC HEALTH VIRTUAL RESOURCE CENTER: A PILOT TEST OF APPLICATION

Objective: The Dental Public Health Virtual Resource Center (DPH-VRC) was created to electronically archive educational resources for dental public health students, educators, and researchers. To date, no such resource exists despite the need for an electronic collection of dental public health resources and tools. Public-access journal articles, organizational reports, and other dental public health materials were grouped by topic and keyword in an electronic database to be searched, viewed, and downloaded. Links to non-public access resources were provided for access through journal membership or institutional affiliation. Method: A pilot test group of dental public health educators and researchers, dental public health residents, and undergraduate dental students were surveyed for reactions and impressions after using the DPH-VRC. Participants were given a virtual tour and given time to use the resource center for real-world application. Participants were then surveyed on user experience, general design and functionality, amount and type of materials available, and how frequently they would use this resource center in the future when released. Results: Participants in the pilot study found the DPH-VRC to be useful and planned on using it frequently. The design was easy to understand and was functional. Feedback was positive and many showed excitement in this resource being developed. Conclusions: Results from the pilot test will be used to further enhance the design and functionality of the DPH-VRC. The full site will be launched in late 2016 for national use. Supported by HRSA D85HP20041.

Source of Funding: Supported by HRSA D85HP20041

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Poster Number 31
UTILIZATION OF DENTAL SERVICES AMONG MEDICAID-ENROLLED ADULTS IN OKLAHOMA

Objective: Many state Medicaid programs, including Oklahoma, either offer no adult dental benefit or limit coverage to emergency dental care. The objective of this study is to understand the impact of a limited Medicaid dental benefit on the utilization of dental services among adults in Oklahoma. Methods: This study analyzed Medicaid enrollment and claims data for adults ages 21 and older in Oklahoma to assess rates of dental service utilization by geography, setting, and provider type between January 2012 and December 2013. Results: Only 16% of Oklahoma adults with Medicaid received any dental service during the study period; 43% had only 1 dental visit and 11% received at least 1 dental service in an emergency department (ED). Although the participation of dentists in the Oklahoma Medicaid program was relatively high, about 60% treated less than 50 adults in the 2-year study period. The majority of dentists treated Medicaid patients in urban counties, in dental offices or clinics. The geographical maldistribution of dentists was also apparent in the higher volume of Medicaid patients per provider and longer commuting distance to obtain care in rural counties. Conclusions: Study findings suggest that utilization of dental services among Medicaid adults in Oklahoma is compromised not only by the limited dental benefits but also by the limited number of dentists providing services to adult Medicaid enrollees. Regional differences in access to care and the use of EDs for dental problems may reflect limited community dental resources.

Source of Funding: This project was funded through a cooperative agreement for a Regional Center for Health Workforce Studies, the Oral Health Workforce Research Center, with the Health Resources and Services Administration of the U.S. Department of Health and Human Services.

Authors: Presenting Author Simona Surdu, MD, PhD, ScD, MS, Center for Health Workforce Studies, School of Public Health, University at Albany; Author Margaret Langelier, MSHSA, Center for Health Workforce Studies, School of Public Health, University at Albany; Author Jean Moore, DrPH, Center for Health Workforce Studies

Poster Number 32
PATIENT ENCOUNTER RATES AND REIMBURSEMENT SOURCE FOR SERVICES PROVIDED BY LOAN-REIMBURSED DENTISTS BASED ON PRACTICE SETTING

Objective(s): To compare the number of patient encounters and reimbursement source for dental services provided by dentists who received loan reimbursement while practicing in private clinics to those who received loan reimbursement while practicing in federally-qualified health centers. Loan reimbursement was made available through the Health Resources and Services Administration “Grants to States to Support Oral Health Workforce Activities” grant in West Virginia from September 2012 to August 2015. Practice settings were in West Virginia dental health professional shortage areas and all dentists accepted Medicaid and Children’s Health Insurance Program (CHIP) as a source of payment for dental services provided. Methods: Dentists were split into two groups based on the type of practice setting: private clinics and federally-qualified health centers. T-test and descriptive statistics were used to compare the difference between the two groups in the number of patient encounters and reimbursement source, including Medicaid, Children’s Health Insurance Program, sliding fee scales, and services provided at no charge. Results: Dentists practicing in private clinics had more patient encounters than those dentists who practiced in federally-qualified health centers in the period of 2012-2015. Conclusions: The practice setting is an indicator for the number of patient encounters. Dentists practicing in private clinics tend to have a higher number of patient encounters than those in practicing federally-qualified health centers.
Source of Funding: Health Resources and Services Administration “Grants to States to Support Oral Health Workforce Activities” grant in West Virginia
Authors: Presenting Author Rami Saadeh, DHHR, BPH, OMCFH, OHP

Poster Number 33
CHARACTERISTICS OF INFANTS AND TODDLERS SEEKING CARE AT A HOSPITAL-BASED DENTAL CLINIC

Purpose: The aim of this study was to analyze characteristics of patients seen at Nationwide Children's Hospital Baby Dental clinic. Methods: This was a retrospective chart review conducted using data obtained from patients’ electronic dental records. The patients were first seen in the clinic between the ages of 0-3 ½ from 2011 to 2014, and a total of 6,286 patients were included. Results: Fifty-three percent of the patients were male. Distribution by ethnicity was 46% White, 37% African American, 7% Bi-Racial and 2% Asian. Distribution by number of legal guardians showed that 54% had 2 guardians and 45% had a single guardian. Majority (79%) of first visits was for a hygiene/initial exam appointment; 28% were dental emergencies; 3% consisted of sedation evaluations; 4% were restorative visits and 1% consisted of dental trauma. High caries risk at initial visit was recorded for 32% with 26% at medium risk and 42% at low risk. Conclusions: Majority of children seen in this clinic did not have their first dental visit by the recommended age of 1.

Source of Funding: None
Authors: Presenting Author Homa Amini, DDS, MPH, MS, Nationwide Children's Hospital; Author Beth Noel, RDH, BS, Nationwide Children's Hospital

Poster Number 34
MEDICAID UTILIZATION BY CONNECTICUT GENERAL AND PEDIATRIC DENTISTS

AUTHORS: Joseph McManus, DMD, MS, MHA, MBA, MS ,Columbia University College of Dental Medicine, Ketevan Kiguradze, DDS, Mailman School of Public Health Executive MPH Program TITLE: MEDICAID UTILIZATION BY CONNECTICUT GENERAL AND PEDIATRIC DENTISTS OBJECTIVE: To evaluate the attitudes of general and pediatric dentists in the state of Connecticut towards their participation in the Medicaid program. METHODS: A 17 question survey was developed that addressed various aspects of the current Connecticut dental Medicaid program. This survey was then electronically distributed to general and pediatric dentists in the state. ANTICIPATED RESULTS: Based on the preliminary results of the survey, currently, less than half of the respondents participated in the Medicaid program. Of those who participated, approximately 22% do not accept new Medicaid patients. Low reimbursement rates and broken/canceled appointments were given as primary reasons for lack of participation and limitation in the acceptance of new patients. ANTICIPATED CONCLUSIONS: Dental Medicaid program in the state of Connecticut is currently underutilized by the providers. The reluctance to participate is associated with the low reimbursement rates, canceled appointments and the administrative complexity of being a Medicaid provider. The present system of the dental Medicaid providers may not be equipped to accommodate the growing number of Medicaid beneficiaries.

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.

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**Poster Number 35**

**UTILIZING A POVERTY SIMULATION EXERCISE PRECEDING COMMUNITY BASED SERVICE LEARNING EXPERIENCES TO ENHANCE DENTAL STUDENT UNDERSTANDING OF THE CHALLENGES FACED BY LOW INCOME FAMILIES**

Objectives: The University of North Carolina’s “Dentistry in Service to Communities” (DISC) requires all rising 4th year dental students to spend eight weeks practicing in community-based healthcare settings in underserved communities. The purpose of this study was to evaluate the impact of an experiential Poverty Simulation on students’ understanding of the daily challenges faced by low-income families within the context of the social services available in the community.

Methods: IRB approval was obtained. Eighty students were assigned roles to play as family members living in poverty. Students assessed their level of understanding before and then after the simulation to each of the following domains: (1) the financial pressures experienced by low-income families, (2) the difficult choices people with low resources must make monthly, (3) the difficulties in improving one’s situation and becoming more self-sufficient, (4) the emotional stressors and frustrations created by having limited resources, and (5) the positive and negative impact of community social services. Participants rated their level of understanding on a 5-point Likert scale (1 = no understanding; 5 = almost complete understanding). Descriptive statistics were calculated. Results and Conclusions: The survey response rate was 86%. An increase by at least one unit in understanding was reported by 64% of respondents regarding financial pressures; 68% for difficult choices; 60% regarding the difficulty in improving one’s situation; 58% of emotional stressors and frustrations; and 61% of the positive and negative impact of community social services. Seventy-five percent of the respondents indicated the poverty simulation was a valuable experience.

**Source of Funding:** None

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**Poster Number 36**

**RACIAL AND GENDER DISPARITIES IN NON-TRAUMATIC DENTAL CONDITION VISITS TO EMERGENCY DEPARTMENTS IN MARYLAND**

Objectives: The goal of this study was to evaluate the utilization of Maryland emergency departments (ED) for dental/oral health related conditions (DOHRC). The objectives were to identify specific factors (patient age, race, gender, and co-morbidities), which are significantly associated with a visit to the ED. Methods: Patients receiving care in the ED for DOHRC were identified using ICD-9-CM diagnosis codes 520.XX-529.XX associated with the visit. Maryland State Emergency Department Databases for 2011 and 2012 served as the source of data for this report. The rate per 1000 persons was calculated based on 2010 National Census Data. Independent variables include race/ethnicity, age, gender and comorbidities. Results: 113,087 visits were made to the ED for DOHRC, accounting for 2.5 percent of all ED visits. $34,242,421 was spent providing palliative, non-definitive care for DOHRC. The most frequent chronic conditions co-diagnosed with DOHRC were tobacco use disorder, hypertension, asthma, diabetes mellitus, and mental disorders. Males and females age 25-44 years had the highest visit rates compared to all other age groups. Asian males (45-64) and White males (75+) had
significantly higher rates when compared to females. In contrast, African-American females (15-24) had a significantly higher rate than African-American males. African-Americans had a significantly higher rate across all age groups compared to all other race/ethnicities, with the exception of the 75+ age group. Conclusions: African-Americans are at increased risk of ED visits for DOHRC across age groups. Future research will focus on developing a multifactorial predictive model to identify the patients at highest risk.

**Source of Funding:** None

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**Poster Number 37**

**THE VIRTUAL DENTAL HOME, POLK COUNTY, OR**

The virtual dental home is a community-based oral health delivery system in which people receive dental diagnostic, preventive, and early intervention services in community settings. It uses telehealth technology to link dental hygienist in the community with dentists in dental offices, facilitating access to the full dental team and comprehensive dental care. Objectives: By June 2016 provide services through the Virtual Dental Home for 70% of children enrolled in K-2nd grade in the Central School district and two Head Start programs in Polk County. Methods: Utilizing portable equipment and an electronic dental record, provide services in school settings. Through "store and forward" delivery, oral health information allows the dentist to develop diagnosis and treatment plan comparable to a face to face evaluation done in a "bricks and mortar" dental office. Results: Early results from first site include; 64% positive consent return rate, 86% with positive consent rate received prevention services in the school setting, 43% ONLY needed care in the school setting (no referral to an office needed). Conclusions: Preliminary data suggests the Virtual Dental home is a feasible, effective, and valuable means of delivering onsite dental services supported by tele-dentistry on underserved children in a school setting.

**Source of Funding:** This project is funded through the Oregon Health Authority's federal State Innovation Model (SIM) grant as well as the Oregon, Office of Rural Health.

**Authors:** Presenting Author Linda Mann, RDH, EPP, Capitol Dental Care; Author Eli Schwarz, DDS, MPH, PhD, FHKAM, FCDSHK, FADCD, FRACDS, Oregon Health Sciences University; Author Paul Glassman, DDS ,MA, MBA, University of the Pacific, Arthur A. Dugoni School of Dentistry

**Poster Number 38**

**ORAL HEALTH EXPERIENCE AND DENTAL CARE UTILIZATION OF PREGNANT WOMEN- A FOCUS ON DENTISTS' ROLE**

Objectives: to measure 1) prevalence of self-reported periodontal symptoms during pregnancy, 2) contribution of dental and maternal care providers to oral health education (OHE) of pregnant women. Methods: A comprehensive medical and dental health survey was distributed to pregnant women at various prenatal clinics in Riyadh, Saudi Arabia over July 2014. Informed consent was obtained. Results: The average age of participants (n=347) was 31.8±6 years and most had college education (58%). About one-third (36.3%) had at least one diagnosed medical/mental health disorder prior to pregnancy, and (47.8%) self-reported a new dental/periodontal symptom during pregnancy. Most frequent symptoms were loose/sensitive teeth (15.6%) and redness/bleeding or swelling of gingiva (14.1%). Only (19.3%) visited the dentist during pregnancy seeking treatment for the new symptoms. The perception that “dental treatment is not advised during pregnancy” was frequently cited as reason for not seeking dental care (40.1%). A minority of the participants received OHE from dental (28.3%) and maternal (2.3%) care providers. The OHE mostly related to oral hygiene (43.4%) or diet
(13.3%), but rarely on association of oral and general health or condition (2.3%). Presence of a medical condition (OR=3.2, p=0.02) and receiving OHE from a maternal care provider (OR=11.4, p=0.01) predicts visiting the dental clinic for non-emergency dental care during pregnancy. Conclusion: We propose a model of delivering OHE utilizing prenatal clinics as platform to reach the population of interest. Scope and impact of OHE can be enhanced by inter-professional collaboration between maternal & dental care providers, ultimately delivering effective advice and decreasing avoidable suffering.

**Source of Funding:** none

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**Poster Number 39**

**TOBACCO-RELATED LITERATURE IN SAUDI ARABIA: A DENTAL PERSPECTIVE**

Objectives: i) review the published scientific literature on tobacco use/cessation in Saudi Arabia (SA), ii) explore the contribution of oral health professionals (OHP) to this field. Methods: An electronic search in Scopus database was conducted using the following keywords: tobaccoORcigaretteOR smok* ORwaterpipeORshishaORhookahORshamma*; limited by the word (Saudi) in affiliations of the author(s). Data extraction was limited to abstracts, and included: study design, focus of tobacco research, specialty of author(s) and main findings. Results: A total of 247 abstracts were assessed; majority was either on effects (42.2%) or consumption (34%) of tobacco. The prevalence of consumption was 4%-58%, depending on the population sampled. OHP constituted the largest health specialty featured in tobacco-related publications, producing almost one-fifth (19%) of the abstracts, followed by pharmacological researchers (15.8%). 64% of abstracts focused on cigarette smoking but only 10.5% addressed cessation; of these, 15.4% were contributed by OHP. OHP produced the highest proportion of abstracts on smokeless tobacco (66.6%), clinical trials (33%) and reviews/meta-analyses (27.3%). Moreover, they contributed 29.4% of articles describing the effects of tobacco on health outcomes specifically; associations with periodontal diseases, oral lesions/infections and cancer. Six studies focused on dentists’ knowledge, practices and perceived self-efficacy of tobacco cessation counseling. Conclusions: Tobacco cessation was addressed in about 10% of publications, with only 4 (15.4%) being published by OHPs. OHPs published more frequently on smokeless tobacco than other health professionals/researchers. OHP are at vantage point to identify tobacco users of all ages, hence, greater emphasis on OHP’s role in cessation in SA is warranted.

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Poster Number 40
PREDICTORS OF RECEIPT OF DENTAL PROCEDURES BY SENIOR ADULTS CONTINUOUSLY ENROLLED IN MEDICAID DURING THEIR TRANSITION FROM COMMUNITY-DWELLING TO NURSING FACILITY RESIDENCE

Objective: To evaluate preventive dental care utilization as senior adults transition from community-dwelling to nursing facilities. Methods: This study used Iowa Medicaid enrollment and claims data provided to the University of Iowa Public Policy Center. The inclusion criterion was Medicaid enrollees who were 68 years or older upon entry into an Iowa nursing facility who had been continuously enrolled (eligible 58 out of 60 months) in Medicaid for three years prior and at least two years after admission. For this analysis, dental procedures usually provided by dental hygienists, plus dental exams, were considered as preventive procedures. Results: Results are awaiting full thesis committee review. Conclusions: To be determined pending results of analyses.

Source of Funding: None
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Poster Number 41
MEDICAID EXPANSION IN IOWA: MEMBER EXPERIENCES WITH NEW DENTAL BENEFITS

Objectives: Iowa’s new Dental Wellness Plan (DWP) provides dental benefits for low-income adults through the state’s ACA-related Medicaid expansion. DWP uses a unique earned benefits structure whereby members become eligible for additional covered services by returning for routine checkups. This study evaluates DWP members’ experiences in the first year, compared with adults newly enrolled in traditional fee-for-service Medicaid. Methods: A mail survey was administered to a random sample of newly enrolled DWP (n=4800) and Medicaid members (n=1350). Univariate and bivariate analyses were conducted to compare DWP and Medicaid members. Results: Surveys were returned by 30% of DWP members (n=1260) and 16% of Medicaid members (n=191). DWP members reported significantly lower oral health status compared to Medicaid members. Both groups reported their oral health status as lower than their physical and mental health status. Significantly more DWP members reported having an unmet need for dental care before joining their plan (71% DWP vs. 56% Medicaid). However, there was no significant difference in unmet need for dental care after joining (38% DWP vs. 35% Medicaid). Approximately 60% of DWP and Medicaid members reported utilizing dental care since gaining coverage. Ratings of plan satisfaction were similar among both groups; 38% rated the plans poorly. Conclusion: An earned benefits model program can improve unmet need and improve access for members, most of whom were previously dentally uninsured. Improvement over a traditional fee for service model, however is mixed, with similar rates of dental utilization and unmet need within 10 months of new enrollment.

Source of Funding: Iowa Department of Human Services
Authors: Presenting Author Julie Reynolds, DDS, MS, University of Iowa; Author Peter Damiano, DDS, MPH, University of Iowa; Author Susan McKernan, DMD, MS, PhD, University of Iowa
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Poster Abstracts

Poster Number 42
TRANSPORTATION BARRIERS TO DENTAL CARE IN IOWA'S MEDICAID EXPANSIONS POPULATION

Objectives: This study explores how transportation and geographic barriers are associated with dental utilization in the Iowa Dental Wellness Plan (DWP). The DWP provides comprehensive dental benefits for low-income adults ages 18-64 through ACA-related Medicaid expansion. We examined transportation and spatial characteristics as enabling factors within the framework of Andersen’s Behavioral Model. Methods: In March 2015, we surveyed a random sample of DWP members (n=4800) who had been enrolled 7-10 months. The questionnaire was based on the CAHPS Dental Plan Survey and included: need for care, use of services, transportation to visits, oral health status, and attitudes about oral health. We used provider addresses to calculate distance to nearest general dentist. A logistic model predicting utilization of non-emergency dental care was developed using variables representing each domain of the Behavioral Model. Results: Adjusted survey response rate was 30% (n=1258). 57% reported a non-emergency dental visit since enrolling; 38% reported current unmet need for dental care. Median distance to the nearest general dentist was 1.5 miles. In the final model, concern about transportation cost(p=.001) and driver/passenger status(p=.04) were significantly associated with utilization. Other significant factors included: sex(p=.002), education(p=.02), presence of a chronic physical condition(p=.01), and tooth-brushing(p=.004). Distance to the nearest dentist, unmet transportation need, and rural residence were not significantly associated with dental utilization. Conclusions: Overall travel distance to nearest general dentist in the Iowa Medicaid expansion program was relatively short, although many may bypass the closest provider. Transportation cost and driver/passenger status were the most common transportation barriers.

Source of Funding: Iowa Department of Human Services

Authors: Presenting Author Susan McKernan, DMD, MS, PhD, University of Iowa; Author Aparna Ingleshwar, BDS, University of Iowa; Author Julie Reynolds, DDS, MS, University of Iowa; Author Mark Pooley, MS, University of Iowa; Author Raymond Kuthy, DDS, MPH, University of Iowa College of Dentistry and Public Policy Center; Author Peter Damiano, DDS, MPH, University of Iowa

Poster Number 43
GENDER AND INCOME INEQUALITIES IN NATIONAL EMERGENCY DEPARTMENTS VISITS FOR DENTAL/ORAL HEALTH CONDITIONS

Objectives: Our goals were to evaluate the utilization of emergency departments nationwide (ED) for dental/oral health-related conditions (DOHRC). The objectives were to identify specific factors that are significantly associated with a visit to the ED. Methods: Patients receiving care in the ED for DOHRC were identified using ICD-9-CM diagnosis codes 520.XX-529.XX. Nationwide Emergency Department (NEDS) databases for 2011 served as the source of data. The rate per 100,000 persons was calculated using 2011 Census Population Estimates. Independent variables include age, gender, insurance, location of residence, the region of hospital and comorbidities. Results: 2,548,423 visits were made to the ED for DOHRC, accounting for 2.3 percent of all ED visits. $1.87 Billion was spent providing non-definitive care for DOHRC. The most frequent chronic conditions co-diagnosed with DOHRC were tobacco use disorder, hypertension, diabetes mellitus, and asthma. Males and females age 25-45 years had the highest rates compared to all other age groups. Rates for the rural populations are twice as high as those for metropolitan areas or suburbs. 32% of DOHRC visits occur on the weekend, compared to 29.9% of all ED visits (p < .0001). Two-thirds of DOHRC charges were billed to Medicaid or directly to uninsured individuals vs. Private Insurance or Medicare. Conclusions: Females 24-45 years of age, living in rural residences with income less than $39,000, uninsured or utilizing Medicaid, in the Midwest and South Regions have a higher probability to utilize the
Poster Number 44
RHODE ISLAND (RI) WOMEN’S PRENATAL DENTAL CARE REPORTS FROM MEDICAID CLAIM DATA
Objective: To report dental visit prevalence and trend among pregnant women, using RI Medicaid claim data. Methods: 2009-13 birth cohorts were created using the Medicaid Managed Care childbirth payment records, and annual births were verified with RI vital records. Childbirth payment records were merged with claims for any type of dental service delivered during the prenatal period (retrospectively tracking for 39 weeks before delivery date). Women’s dental utilization was analyzed by birth cohorts and eligibility status, and the trend was tested using regression modeling with a linear trend test at 5% significance level. Results: Birth cohorts obtained from Medicaid childbirth payment data (n=23,975) account for 92% of Medicaid-covered births. The percentage of women who received any dental services during pregnancy ranged from 23%-29%. No significant increase in dental visits was found in the study period (p=0.2974). The eligibility period for prenatal coverage among women who received dental services was longer than those who did not receive dental services (204 vs. 172 days, p < .0001). Conclusion: Although 40%-47% of RI pregnant women self-reportedly visited a dentist (PRAMS 2009-13), Medicaid data showed much lower prevalence. Rhode Island cannot directly link PRAMS and Medicaid claims to validate survey responses. Although gaps between PRAMS and dental claims could not be fully explained, claims data provided additional evidence that dental benefits available during the prenatal period were not effectively utilized. Additionally, the Medicaid eligibility period for pregnant women was identified as a barrier because it does not sufficiently cover the entire prenatal care period.

Source of Funding: Rhode Island Department of Health Oral Health Program’s cooperative agreements with the Health Resources and Services Administration (HRSA-15-070) and the Centers for Disease Control and Prevention (DP13-1307)

Authors: Presenting Author Junhie Oh, BDS, MPH, Rhode Island Department of Health Oral Health Program; Author Laurie Leonard, MS, Rhode Island Department of Health Oral Health Program

Poster Number 45
PREVALENCE OF ORAL LESIONS AND THEIR ASSOCIATION WITH CD4 + CELL COUNT AND VIRAL LOAD IN HIV+
Oral manifestations in HIV+ patients are of significant importance in the diagnosis of the disease and the immune status of the patient. The objective of this cross-sectional study will be to determine the prevalence of oral lesions in a HIV+ patients, related to CD4+ cell count, CD4/CD8 ratio and viral load in a group of patients attending the Borinquen Medical Center in Miami, FL. In the present study, the population will include HIV+ consenting adult patients, attending the Borinquen Medical Center in Miami, FL from January 2015 to April 2015. Each patient will be given an informed consent form explaining all the procedures to be done. After the patient has consented, he/she will be clinically examined by one calibrated examiner for detection of oral lesions based on the EC Clearinghouse Classification (1993). In addition, CD4+ cell count, CD4/CD8 ratio and Viral Load will be obtained from the patient’s clinical chart. Based on the literature the expected results will be that the manifestations of oral lesions will be strongly associated with a high viral load and a low CD4+ cell count.
Poster Number 46
STATE DENTAL DIRECTORS' ASSESSMENTS OF DENTAL PUBLIC HEALTH ISSUES

Objectives: In an era of healthcare reform, State Dental Directors play an essential role in coordinating efforts to reduce population oral diseases burden and address costs associated with preventable dental services. The objectives are to assess (1) issues Directors are facing and (2) characteristics they believe essential for successful future Directors. We seek to determine challenges Directors are facing, qualifications needed in their role, and how to better achieve the ASTDD domains and competencies. Methods: Prospective data collection through key informant interviews of seven past Directors/informants was completed to identify themes of a planned survey of current Directors. The key informants came from various regions of the country and had different levels of educational backgrounds. Results: Interviews revealed several themes. Challenges in reliable and sufficient funding to maintain programs and staff emerged as a prominent theme followed by workforce shortages, water fluoridation resistance, politics, lack of power to make change, and the importance and challenges of school based programs. Key informants generally felt that directors should have an oral and public health background, and be able to work well with others, express the importance of oral health, secure funding, and understand the political process. Many felt it was important to get others in the community involved such as teachers. Conclusions: Information from key informants revealed similar themes across former state Directors which undermine attainment of ASTDD goals. Surveys will determine consensus among current state dental directors regarding challenges and approaches to overcoming them.

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.

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Poster Number 47
ORAL LITERACY DEMAND IN THE DENTAL CLINIC. A PILOT STUDY

Objectives: The parent’s ability to obtain, process, and understand important oral health (i.e. their oral health literacy) is directly related to their child’s oral health status. We aimed to assess the relationship between oral literacy demands placed on parents by dentists and parents’ understanding of dental information given to them. Methods: Consenting primary care givers of children attending their first dental visit completed a demographic survey, a REALD-30 test, and a final survey to test understanding. Dental appointments were audio-recorded and transcribed for qualitative analysis and descriptive statistics. Results: Factors associated to language complexity, such as total number of words and words per sentence were significantly higher in dental residents than participants. Dialogue structure factors such did not differ between resident and parent. Even though participants’ OHL level was limited they understood more than 80% of the information provided by the dentist. Conclusions: The dialogue between the dentist
and the parents was highly unequal. Future studies in larger groups are needed to identify factors associated with gaps in the educational process of parents in the dental setting.  

**Source of Funding:** ADA Foundation. Samuel D. Harris Fund for Children’s Dental Health Grants Program.  

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**Poster Number 48**  
**EXAMINATION OF FIVE YEAR RELATIVE SURVIVAL TRENDS FOR ORAL CAVITY AND OROPHARYNGEAL CANCERS IN THE UNITED STATES FROM 2000-2011 BY SELECT DEMOGRAPHICS**

**Objectives:** In the U.S. there are nearly 45,000 new cases and 8,500 deaths attributed to oral cancers annually. Previous research has indicated that survival rates for oral cancers differ based on race/ethnicity. The main objective of this study was to understand the recent trends related to oral cancer survival in the U.S. by race/ethnicity and other demographic factors.  

**Methods:** The Surveillance, Epidemiology, and End Results (SEER) data-source was used to examine oral cancer 5 year relative survival rates from 2000-2011 by: age, race/ethnicity, gender, and stage of diagnosis. These survival statistics were examined in total and stratified by cases diagnosed in the oral cavity and oropharyngeal anatomic regions. Results: The overall 5-year relative survival rate for individuals diagnosed with oral cancer from 2000-2011 was 62.1%. Non-Hispanic Whites had an overall survival rate of 64.4%, Hispanics 60.8%, and Non-Hispanic Blacks 42.9%. Males and females displayed the same overall survival rate, 62%. Those with oropharyngeal cancers diagnosed at the regional and distant stages displayed higher survival (68% and 41%, respectively) compared to those with oral cavity cancers diagnosed at these stages (44% and 25%). Conclusions: African Americans displayed substantially poorer survival over the time period examined. Research should continue to investigate the reasons for disparities in oral cancer survival, and the factors related to the better prognosis of late-stage oropharyngeal cancers as compared to late-stage oral cavity cancers.  

**Source of Funding:** None  

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**Poster Number 49**  
**ENAMEL FLUOROSIS AMONG DIFFERENT RACIAL/ETHNIC GROUPS IN U.S. SCHOOL CHILDREN**

**Background.** Enamel fluorosis among different racial and ethnic groups was studied to determine if enamel fluorosis was associated with race/ethnicity among U.S school children.  

**Methods.** Data from the National Survey of Oral Health of U.S. School Children 1986-1987 were used to conduct analysis and determine prevalence of enamel fluorosis among different racial/ethnic groups among 7-17 years old school children. Bivariate analysis was performed and frequency distributions were obtained to determine the prevalence of enamel fluorosis among various racial/ethnic groups. The association between race/ethnicity and enamel fluorosis was examined using multinomial logistic regression modeling after controlling for potential confounders at both optimally and sub-optimally fluoridated levels. All the analyses were performed using survey procedures with SAS v. 9.4 (SAS Institute Inc. 2002-2012).

**Results.** The prevalence of enamel fluorosis among non-Hispanic White and non-Hispanic Black groups was 20.8 (15.4, 26.3) percent and 25.7 (15.0, 36.5) percent respectively. The adjusted odds ratio for non-Hispanic Black group with reference to non-Hispanic White group was estimated to be 1.5 (0.9-2.6). However, this estimate was not statistically significant.
Conclusion. Enamel fluorosis was not associated with race/ethnicity. While there may be genetic markers that can be linked to fluorosis, race/ethnicity is not a meaningful construct to explain the variation in population groups.

**Source of Funding:** Health Resources and Services Administration Maternal and Child Health Services Block Grant

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**Poster Number 50**

**FACTORS ASSOCIATED WITH SEVERE EARLY CHILDHOOD CARIES IN PRESCHOOL CHILDREN IN TAIWAN**

Objectives. In Taiwan, the Severe Early Childhood Caries (SECC) prevalence in preschool children aged 3 was 42.16%, aged 4 was 54.82%, aged 5 was 53.73%. We therefore analyzed the associated factors of SECC in preschool children. Methods. A large-scale survey of children aged 3-5 was conducted from April to December 2014 in Taipei City, Taiwan. A total of 34,941 children finished oral examination by dentists, and their caregivers completed the oral health behavioral questionnaire. SECC was defined by dmft $\geq 4$ (age 3), $\geq 5$ (age 4), or $\geq 6$ (age 5). Logistic regression was used to analyze the association between children’s SECC, oral hygiene behaviors and diet habits. Results. Children’s SECC was significantly associated with children’s tooth-brushing practice reminded uselessly by their caregivers [Adjusted Odds Ratio (aOR)=1.81, 95%CI=1.34-2.43] as well as consuming sweets snack (aOR=2.36, 95%CI=2.04-2.73) and salty snack (aOR=1.93, 95%CI=1.52-2.47) frequency above 7 times a week. A child consumed sparkling drink (aOR=2.78, 95%CI=1.68-4.60) or sugary drink (aOR=1.89, 95%CI=1.20-2.96) more than 7 times a week was more likely to have SECC, whereas, a child had fluoride varnish application regularly (aOR=0.93, 95%CI=0.88-0.99), or parents assisted in their children brushing teeth before sleeping everyday (aOR=0.84, 95%CI=0.79-0.89) was less likely to have SECC. Conclusions. The results suggest that parents and caregivers play an important role for early childhood caries prevention by – assisting in their child’s brushing before sleeping, taking children for fluoride varnish regularly, and managing children’s snacks and sugary consumption.

**Source of Funding:** None

**Authors:** Presenting Author LI-CHUN LIU, Kaohsiung Medical University; Author YI-CHING LIN, Kaohsiung Medical University; Author HSIAO-LING HUANG, Kaohsiung Medical University

**Poster Number 51**

**DENTAL AND ORAL PROBLEM PATTERNS AND TREATMENT SEEKING BEHAVIOR OF GERIATRIC POPULATION**

Background: The purpose of this study is to assess the dental and oral problems and to find out the determinants of oral health seeking behaviour among elderly population of AlJouf province, Saudi Arabia. Methods: The present cross sectional study included geriatric patients of 60 years and above, with various complaints and treatment needs visiting the College of Dentistry, AlJouf University. A simple pre structured questionnaire was filled by the patients who comprised of demographic details and the different oral complaints of elderly and the type of health care utilized for those complaints. Results: Out of total 446 elderly persons included 51.7% were males and 48.2 were females. The most common oral problem was missing tooth (80.9%) followed by gum problems (74.2%). 39.8% males and 28.3% females visited general dental practitioners for oral health care. Majority of the participants (32.9%) suggested accessibility as a basic factor in determining the health care source. The difference of distribution of male and females or association between type of care and gender and distribution for choosing a health care source was found to be statistically significant ($p < 0.05$). Conclusion: Inaccessibility to
dental care emerged as an important barrier to avail oral health services. Adequate access to medical and dental care can reduce premature morbidity and mortality, preserve function, and enhance overall quality of life.

Source of Funding: None

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

Poster Number 52
IMPACT OF FULL DENTURE ON ORAL HEALTH-RELATED QUALITY OF LIFE AMONG ELDERLY POPULATION BY AGED: A PERSPECTIVE STUDY

Purpose: In this study, we focused on those aged, 65 years old to 74 years old and over 74 years old, to discriminate the impact of full denture among an elderly population. Methods: This study included 211 samples, aged 65 years old or older. We used OHIP-14T to obtain the satisfaction scores of before wearing full dentures and after 6 months of full denture use. We separated the age groups into two parts, under 75 years old and over 75 years old. Result: The overall OHIP-14T of chewing score in under 75-year olds was 3.34 and the stability score in over 75-year olds was 4.00. The function limitation OHIP-14T of speaking score in under 75-year olds was 0.77 and the doctor satisfaction score in over 75-year olds was 0.63. The physical pain OHIP-14T of chewing score in under 75-year olds was 1.00. The psychological discomfort OHIP-14T of esthetics score in under 75-year olds was 0.65 and the stability score in under 75-year olds was 0.63. The psychological disability OHIP-14T of stability score in under 75-year olds was 0.77. The social disability OHIP-14T of chewing score in under 75-year olds was 0.59 and the stability score in over 75-year olds was 0.47. The handicap OHIP-14T of chewing score in under 75-year olds was 0.70. Conclusion: In our study, we can know that the chewing score in under 75-year olds had an obvious statistically significant improvement, and the stability score in over 75-year olds also showed a statistically significant improvement.

Source of Funding: Department of Health, Tainan City Government, Tainan, Taiwan

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Poster Number 53
THE RELATIONSHIP BETWEEN PERIODONTAL DISEASE EXPERIENCE AND ORAL HEALTH BEHAVIORS IN TYPE 2 DIABETIC PATIENTS: A MULTICENTER SURVEY

Objective: Oral care behaviors in diabetic patients is essential to control their disease and to reducing the risks of periodontitis. Our aim was to assess the relationship between periodontal disease experience and oral health behaviors in type 2 diabetic patients. Method: We used a cross-sectional study design. Overall, 491 type 2 diabetic patients were recruited. Patients with type 1 diabetes, routine use of antibiotics and bisphosphonates, completely edentulous and cancer history were excluded. A face-to-face interview was used to collect the information by a structured questionnaire. Multivariate regression models analyzed the relationship between periodontal disease experience and oral health behaviors in DM patients. Result: Patients with periodontal disease experience had significantly higher level of knowledge and attitude compared to those without periodontal disease experience (B= 0.75 and 0.52). Periodontal disease experience in DM patients was significantly associated with the interdental brushes use (adjusted odds ratio [aOR] = 4.34), sensitive toothpaste use (aOR = 2.60) and dental visit in six months (aOR = 2.29). Of all diabetic patients, 50.9% of patients with periodontal disease had regular dental visit, only 31.3% of patients without periodontal disease had dental visit. Conclusion: Periodontal disease experience was significantly related to knowledge and attitude toward periodontal health in diabetes patients. Moreover, those patients who have periodontal
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disease experience were more likely to have dental visit in six months and use interdental brush, which suggested regular dental visit for type II diabetic patients is necessary to improve their periodontal awareness, attitude, and self-care behaviors.

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Poster Number 54

ORAL HEALTH-RELATED QUALITY OF LIFE IN METHAMPHETAMINE USERS BY LEVEL OF USE AND ROUTE OF ADMINISTRATION

Objective: Methamphetamine (MA) use is known to be associated with many adverse oral conditions including “Meth Mouth”, a syndrome marked by poor oral health. Oral health related quality of life (OHRQOL) can impact general well-being and has important implications for dentistry. Little is known about MA use and OHRQOL. This study aims to assess the relationship between MA use and self-reported OHRQOL. Methods: Data from 545 MA users in Los Angeles County, California were analyzed. Information on MA use and route of administration were based on lifetime use and the past 30 days. Individuals responding unfavorably to 2 or more of 7 OHRQOL measures were classified with unfavorable overall OHRQOL. Information on oral health status, socio-economic, and behavioral factors was also analyzed. Results: Majority of MA users were male (80.9%), had root caries (78.0%), and smoked cigarettes (68.3%). Smoking was the preferred route of MA use (70.2%). Among MA users, 74.3% reported overall unfavorable OHRQOL. Moderate/heavy MA users were more likely to report an affected sense of taste [OR=1.58(1.10-2.27)] and avoidance of particular foods [OR=1.45(1.02-2.01)] compared to light users in unadjusted models. In a multivariate model, moderate/heavy MA users were more likely to report an affected sense of taste [OR=1.54(1.01-2.34)] than light users. MA users were less likely to report an affected sense taste [OR=0.56(0.36-0.87)] if the preferred route of MA use was smoking. Conclusion: Among the 7 OHRQOL measures assessed, only an affected sense of taste was reported significantly different between the frequency and preferred route of MA use.

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Poster Number 55

RELATIONSHIP BETWEEN FOOD ENVIRONMENT AND DENTAL CARIES AMONG PEDIATRIC DENTAL PATIENTS IN MILWAUKEE, WI

Introduction: Diet is an important risk factor for dental caries. Studies on diseases such as diabetes and obesity report that a person’s diet is influenced by their neighborhood food environment (availability and accessibility of grocery stores) and home food environment (types of foods purchased/ available at home). Proximity to supermarkets has been positively associated with consumption of a healthy diet whereas living near convenience stores has been linked to consumption of high-energy, low-nutrient–dense foods. However, very few studies have examined the relationship between food environments and dental caries experience. Methods: Parents of 298 children attending the pediatric dental clinic at Marquette University
School of Dentistry completed a pre-tested 25 item survey questionnaire. Children’s electronic dental records were assessed to determine their caries experience. Children were categorized into those who had zero, 1-4 and more than 5 carious lesions. Responses to questions were analyzed using chi square tests to examine the relationship between food environment and dental caries experience among children. Results: There was no relationship between proximity, and type of grocery store and dental caries experience. Children from households which purchased healthier food items such as fruits, vegetables and milk more frequently had fewer carious lesions compared to children from households which reported purchasing these items less frequently. Conclusions: Home food environments may significantly impact a child’s caries experience.

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Poster Number 56
THE RELATIONSHIP BETWEEN OSTEOARTHRITIS AND PERIODONTITIS IN THE U.S.

Objective: Rheumatoid arthritis (RA) and periodontitis relationship is well documented. Individuals with osteoarthritis (OA), may be at a higher risk of periodontitis due to limited dexterity. Our objective is to explore the relationship between osteoarthritis and periodontitis.

Methods: Data from 2009-2012 cycles of the National Health and Nutrition Examination Survey (NHANES) were analyzed. Individuals >30 years who answered questions regarding their arthritis status and completed a periodontal evaluation were included. We compared arthritis groups based on the presence of at least one tooth with > 6mm loss of attachment (LOA). Analyses were conducted using SAS 9.4 survey procedures to account for the complex sample design of NHANES and obtain unbiased estimates and variances. Results: 9,402 individuals were included. Of those with OA, 26.4% had > 6mm LOA compared to 22.5% of those without arthritis. Individuals with RA showed a higher level of periodontitis (31.3 %) than those with OA. The OA group and those with no arthritis had the highest percentage of people reporting their gum health and teeth as excellent (14.6% and 14.1%, respectively). Those reporting flossing at least once a day was higher in the OA (36.4%) group compared to the RA group (31.1%). The OA group had the lowest proportion of current smokers (15.3%). All results were statistically significant (p < .01). Conclusion: Compared to other arthritis types, OA does not appear to increase the risk of individuals having > 6mm LOA. People with OA may practice better oral hygiene compared to those with other types of arthritis.

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Poster Number 57
DENTAL PUBLIC HEALTH INITIATIVE OF THE ACADEMIC SECTOR: THE Dammam Model

Objectives: To describe the experience of the college of Dentistry, University of Dammam in developing a system to assess oral health and associated risk factors in the Eastern Province, Saudi Arabia. The presence of this data is needed to inform health care policy making.
Methods: A situation analysis evaluated the problems facing the collection of oral health data. Available resources were assessed and community partners were investigated. Alternatives for developing the system were compared. Results: The challenges facing the development of a system for oral health data collection in the Eastern Province, Saudi Arabia include the structure of the health care system, population density, gender segregation and dentist availability. Two models for data collection are used in the college: curricular (through dental public health courses) and extracurricular (through volunteering activities managed by the Community Service Unit, CSU). The newly proposed model merged these activities, targeted schoolchildren as priority group and allied with schools authorities and non-governmental organizations to access children in schools and in community settings. Dental students were assigned the responsibility of data collection after training in academic courses. Unified data collection tools were developed based on the Basic Screening Survey methodology. A database was developed to archive data. Conclusions: The Dammam model can potentially support oral health policy in the Eastern Province of Saudi Arabia through standardized, updated and ongoing data collection about the level of oral diseases and their risk factors.

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Poster Number 58

ASSESSMENT OF ORAL HEALTH KNOWLEDGE, ATTITUDE, UTILIZATION AND BARRIERS TOWARD PROFESSIONAL DENTAL CARE AMONG ADULTS IN CENTRAL RURAL INDIA

Background: This study (1) assessed oral knowledge levels, attitudes, barriers toward seeking professional dental care and utilization of dental care through empirical and anecdotal data; (2) determined overall caries experience. Methodology: The cross-sectional study took place in Ramgarh east of District Chhindwara in Madhya Pradesh, India and included 202 participants. Each participant answered survey questions in a face-to-face interview and underwent an intra-oral examination. Results: Participants who had ≥ 8 years of formal education had significantly higher oral health knowledge (4.0 ± 2.5) than participants having < 8 years education or illiterates (F= 17.24; p < .05). Participants of 18-34 years had significantly higher knowledge (3.5 ±2.4) than 35-44 year olds and ≥45 years (F=3.92; p .01). Only 17% of the sample had been to a dentist and 31% believed going to the dentist was necessary even in absence of dental pain. Fear of loss of vision following tooth extraction, absence of pain and use of home remedies were top reasons preventing people from seeking professional care. Overall caries experience increased significantly by increasing age (F=16.8; p < .001) and decreased with higher educational levels. (F =2.72; p .046). Conclusions: Rural people have low oral health knowledge. Behaviors of utilizing dental care are impaired by prevailing myths, seeking help only in pain and resorting to self-care in oro-dental conditions. Young and adults should be made aware of maintaining optimal oral hygiene behaviors throughout their lives. Offering essential dental services within the existing health infrastructure may meet some of the unmet dental needs.

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Poster Number 59
EVALUATING THE ORAL HEALTH STATUS OF CHILDREN PREVIOUSLY ENROLLED IN HEAD START ALONG THE TEXAS-MEXICO BORDER

Objective: The Miles of Smiles-Laredo school-based oral health promotion program provides preventive dental services to elementary school children living in Webb County along the Texas-Mexico border. The study explored differences in the oral health status of children enrolled in Head Start compared to children who did not attend Head Start previously. Method: During the consent process, parents/guardians self-reported if their child was previously enrolled in the Head Start program. The oral health status of those in the Head Start program was compared to children who had not been enrolled previously. Of children in kindergarten through third grade who participated in the Miles of Smiles-Laredo program, approximately 20% self-reported previous enrollment in Head Start. Oral health indicators from the 2014-2015 school year were evaluated. Results: Children in Head Start had less untreated decay (10.2%) than children who were not in Head Start (16.1%). Similarly, children who were not enrolled in Head Start were referred for treatment at a higher rate than children previously enrolled in Head Start (16.7% to 10.7%, respectively.) A higher proportion of children who had seen a dentist in the last year were previously enrolled in Head Start (77.7%) compared to children not previously enrolled (68.9%). Second grade children with existing sealants were more prevalent among children previously enrolled in Head Start than those who were not (48.0% and 44.0%, respectively). Conclusions: Children previously enrolled in Head Start had a lower prevalence of negative oral health indicators when compared to children not previously enrolled in Head Start.

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Poster Number 60
ORAL HEALTH KNOWLEDGE, BEHAVIOR, AND BELIEFS OF AMERICAN INDIAN MOTHERS

Objectives: To present the baseline results of maternal (primary caregiver) knowledge, behavior and health beliefs related to their child’s oral health and the association of education with oral health beliefs. Methods: Six hundred mother-child dyads were enrolled and randomized in a clinical trial testing the efficacy of Motivational Interviewing to prevent early childhood caries (ECC), with a follow-up period of 36 months. Basic descriptive statistics were conducted. Results: Ninety-six percent of the caregivers enrolled in the study were mothers. About 7% had a college degree, 28% had some college education, 24% had completed high school and 40% had completed less than high school education. Overall oral health behavior score was 66%, and the oral health knowledge score was 77% (% correct answers to questions related to ECC). The mean for oral health knowledge was higher for mothers with more education (p=0.002). Internal oral health locus of control (OHLOC) was higher (p=0.002), and chance OHLOC (p < .0001) and other OHLOC (p < .0001) was lower in college educated mothers. In measures related to the Health Belief Model, mothers who had a college degree had higher perceived susceptibility (0.001) and perceived seriousness ( < .0001) related to the oral health of their child. Conclusion: Higher maternal education is associated with higher oral health knowledge. Mothers with higher education perceive themselves as being able to control or influence their
children’s oral health. Education is strongly associated with the attitudes and health beliefs of mothers (primary caregivers) related to the oral health of their children.

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### Poster Number 61

**FOOD PROGRAMS, DIETARY HABITS AND CARIES IN CHILDREN AGED 2-5**

**Objective:** Food assistance programs (FAPs) are designed to equalize diet quality across socioeconomic status (SES) groups. Dental caries is a diet related disease and there may be differences in disease burden between children who do or do not partake in FAPs. Dietary risks include total sugar intake as well as its frequency and timing. Food insecurity is often associated with inexpensive, readily accessible foods which are highly processed and high in added sugars. Eating these foods greatly increases caries risk. FAPs are, in theory, available to increase families with low SES access to healthier diets. The objective of our ongoing study is to explore associations between participation in FAPs, dietary habits and caries burden.

**Methods:** Subjects were recruited from patients aged 2-5 years presenting to the University of Iowa’s Pediatric or Muscatine Dental Clinics for new or recall exams. Subjects’ parents completed a survey on family demographics, family food program (i.e., food assistance, Head Start) and WIC participation, and their child’s dietary habits. Dental charts were reviewed to identify caries experience and weight and height measures. Results: Subjects (n=59) were 73% white, 51% male and 4.3±1.2 years of age. Forty % of subjects received food assistance, 34% reduced school lunch meals and 34% other FAPs; 29% of families participated in WIC. Fifty-six % of subjects had caries; of subjects with caries the mean was 6.3±5.4 caries with a range from 1-20. Conclusion: More research is needed to determine the associations between FAP participation, dietary habits, and caries burden.

**Source of Funding:** University of Iowa Dental Research Grant

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### Poster Number 62

**EDUCARE OF TEXAS: DESENSITIZATION AND FLUORIDE VARNISH PROGRAM**

**Objectives:** To desensitize and reduce fear of the dental care and dental environment

**Introduction:** Despite the general improvement in oral health marked inequalities remain. Vulnerable groups of society have poorer oral health and less access to oral health care services. Some groups who are at risk of poor oral health include people with disability, those in long-term institutional care, those in group homes, homeless people and some refugee and asylum seeker groups. To address this inequality the dental hygiene program at University of Texas Health Science Center at San Antonio collaborated with EduCare of Texas, a home health agency to desensitize and reduce fear of the dental care and dental environment for individuals of all ages who have cognitive, intellectual or developmental disabilities. Methods: The purpose of this program is two-fold. First, is to provide a desensitizing preventive dental hygiene program to the clients of EduCare of Texas. Second, is to provide a training program for dental hygiene senior students with a concentration on the clinical management of special needs patients. Results: Over the last 10 years, this program has trained over 300 dental hygiene students in clinical management of special needs patients. Moreover, in that same time period the program provided approximately $50,000.00 in periodontal care and preventive
services to the clients of EduCare. Conclusions: As adjunct providers, this program track oral
disease and evaluate the benefits of improving quality of life and access to care.

Source of Funding: None

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Poster Number 63
EXPLORATORY DESCRIPTIVE STUDY OF DIGITAL SEARCHES CONCERNING FLUORIDATION TERMS

Objectives: Seventy years of research has documented the safety and effectiveness of
community water fluoridation. Despite virtually unanimous support of fluoridation by the dental
and public health communities, public understanding of fluoridation is increasingly influenced by
anti-fluoridation websites accessible through search engines. This poster describes patterns of
search engine use for fluoridation and fluoride terms in the U.S., which has been little-studied.
Methodology: Exploratory U.S Google search engine traffic was collected using Google Trends
from May-November 2015, with final data December 23, 2015, for 5 fluoridation terms by state
(including D.C.), metro area and city. Numbers represent the highest activity levels for the term
over time, with scores relative to 100 (the highest). Results: The term “fluoride water” yielded
the most states registering (34/51), followed by “fluoride in water” (25/31), “fluoridation” (7/51),
“water fluoridation” (4/51) and “community water fluoridation” (0/51). Oregon was the top state of
interest for 3 terms (fluoride water, fluoridation, and water fluoridation), however, Utah was the
top state for fluoride in water. Only 2 terms (Fluoride water and Fluoride in water) registered
metro area activity. The top metros of interest for fluoride water and fluoride in water were Los
Angeles, CA, and Denver, CO, respectively. 3 terms yielded data for U.S. cities: fluoridation (2
cities), fluoride in water (13 cities) and fluoride water (15 cities). Conclusions: Areas showing
results tend to be large population areas. Many of these high interest states have had
documented anti-fluoridation movements recently.

Source of Funding: University of Iowa Dental Research Grant

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Poster Number 64
ADOLESCENT PREGNANCY AND EARLY CHILDHOOD CARIES AMONG US CHILDREN

Objective: Despite a current decline, adolescent pregnancy is still high in the US. The aim of this
study was to investigate the association between adolescent pregnancy and early childhood
caries in the United States. Methods: Data from the National Health and Nutrition Examination
Survey (NHANES 1999-2004) were analyzed. Analyses were limited to data of 2,564 children
aged 2-5 years who have completed an oral health exam and have information on mother’s age
at birth. Children’s ECC status was analyzed by their mother’s age at birth, children’s age,
gender, race/ethnicity, and poverty level. Multivariable regression analysis was conducted to
account for confounding. Interactions between adolescent pregnancy and poverty and
race/ethnicity were also tested. All analyses were conducted using SAS 9.3 survey procedures
to account for the complex sampling design of NHANES to obtain unbiased estimates and
variances. Results: About seven percent of children were born to adolescent mothers. The
prevalence of ECC of the adolescent pregnancy group was significantly higher than that of the
middle age group and the older age group (44.0%, 27.9% and 20.9% respectively, p value <
.0001). After adjusting for confounders the association remained significant (OR = 1.6, p value =
0.04). The interaction models showed that the association between adolescent pregnancy and
ECC was significantly modified by poverty and race/ethnicity. Conclusion: Adolescent pregnancy is significantly and positively associated with ECC. Dental preventive programs that target teenage mothers should be implemented in order to prevent early childhood caries among their children.

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**Poster Number 65**

**ANALYSIS OF POVERTY, EDUCATION, COMMUNITY WATER FLUORIDATION AND OTHER DEMOGRAPHIC FINDINGS AS RISK FACTORS FOR CARIES AND PERIODONTAL DISEASE IN NEW YORK STATE**

Objectives: Caries and periodontal disease have been shown to be higher among those with lower socio-economic status and levels of education. These and other factors will be examined to see if any additional association exist to explain the variation in the incidence of oral disease among counties in New York State (NYS). Methods: A review of research and data collected by the Bureau of Dental Health, NYS Department of Health, NYS Public Health Association, Centers for Disease Control and Prevention, US Census Bureau and private foundations, will be conducted. Results: Nationally, poor children ages 2-11 and 6-19 have more untreated primary and permanent teeth decay. Adult populations show a similar pattern. At every age, a higher proportion of those at the lowest income level have periodontitis. Adults with some college have 2 to 2.5 times less destructive periodontal disease than those with lower education. Overall, a higher percentage of Americans living below poverty level are edentulous and among persons aged 65 years and older, 39% of older adults with less education were edentulous. Oral Health disparities in New York State mirror those found nationally with respect to income, education, race and ethnicity. Caries rates are also higher in non-fluoridated communities. Access to dental professionals may be more limited in some rural counties versus urban areas. Conclusion: A variety of factors influence the incidence of caries and periodontal disease in both rural and urban counties. Preventive interventions may be more effective at reducing contributing factors for some groups.

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**Poster Number 66**

**NOVEL USE OF DECIDUOUS TEETH TO EXPLORE EARLY LIFE EXPOSURE TO ENVIRONMENTAL POLLUTANTS IN CHILDHOOD OBESITY**

To assess the extent to which exposure to persistent low levels of environmental pollutants such as the persistent organic pollutants (POPs) can add to the risk of development of childhood obesity and its correlated traits. To fulfill this objective, we proposed a novel method to use naturally shedding deciduous tooth from 25 Mexican American children, to assess association of the in-utero (prenatal) and post natal exposures to low level POPs with risk of childhood obesity and its related traits. These 25 children were original participants of the San Antonio Family Assessment of Metabolic Risk Indicators in Youth (SAFARI) study. The SAFARI data revealed a disturbingly high risk of overweight [53%], obesity [34%], metabolic syndrome [19%], pre-diabetes [13%], and acanthosis nigricans [33%] (Fowler et al. 2013). We hypothesized that low level exposure to persistent organic pollutants at critical periods of prenatal and postnatal development can influence the development of obesity and its correlated diseases in childhood.
The target analytes are acetaminophen (APAP), 3,5,6-trichloro-2-pyridinol (TCPy), 2-isopropyl-6-methyl-4-pyrimidinol (IMPy), diethyl phosphate (DEP), N,N-diethyl-m-toluamide (DEET), tris(2-butoxyethyl) phosphate (TBOEP), monoethyl phthalate (MEP), mono-n-butyl phthalate (MnBP), monoisoamyl phthalate (MiBP), monobenzyl phthalate (MBzP), mono-2-ethylhexyl phthalate (MEHP), mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP), mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP), and mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP). MiBP is significantly correlated with four obesity related traits (FM, HDL, FI, and FG), and MNBP is significantly correlated with both blood pressure measures and with number of the components of the metabolic syndrome. Thus, these two phthalate metabolites appear to be significant contributors to susceptibility to obesity and/or metabolic syndrome.

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Poster Number 67
TOTAL TOOTH TRUTH: AN INTERACTIVE EDUCATIONAL CURRICULUM
The Oral Health Forum (OHF) and the Wrigley Company Foundation have had shared objectives to bring oral health education and health promotion to the Chicago Public Schools (CPS). Therefore, since 2010, both organizations have been collaborating with each other to reach their shared goals. The local reach of the program has been tremendous; over 50,000 children have been educated using a standardized curriculum that was developed by OHF and approved by the CPS Health and Wellness Materials Review Committee as the only oral health curriculum that can be used at CPS. In 2014, OHF contracted with MDR, an educational development and marketing company with a track record of working successfully with primary and secondary school teachers, to come up with a method to expand and digitalize OHF’s curriculum. The resulting product is, a web-based series of 5 modules based reformatted as an easy to use web-based resource for teachers. The teacher-friendly materials are found on totaltoothtruth.com and are geared to students in the primary grades. The modules cover a wide range of topics from the formation of caries to the importance of healthy eating and everything in between. In conclusion, Total Tooth Truth is a program that empowers teachers to educate children about oral health through a variety of tools. These tools include access to educational archives delivered by a hygienist, downloadable activities, and a virtual dental office visit. Modules are based on a standardized curriculum aligned with national standards and reformatted as an easy to use web-based resource.

Source of Funding: Wrigley Company Foundation
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Poster Number 68
DENTAL RESIDENTS’ KNOWLEDGE, OPINIONS AND PRACTICES REGARDING SEXUAL BEHAVIORS AND THEIR IMPACT ON ORAL HEALTH
Introduction: An extensive literature review suggests that dentists do not consider or address sexual practices with patients even though they may impact oral health. Understanding dental residents’ knowledge, opinions and practices (KOP) regarding sexual behaviors and their impact on oral health is an important first step to developing training, policy, and practice recommendations. Objectives: (1) Assess dental residents’ KOP regarding sexual practices and their impact on oral health; (2) Assess dental residents’ willingness to address sexual practices and their impact on oral health; (3) Use the data collected in (1) and (2) and current training and practice guidelines to develop recommendations. Methods: (1) An online survey instrument to
assess dental residents’ KOP regarding sexual practices and oral health will be developed based on literature review and expert opinion; (2) All postdoctoral trainees at Columbia University College of Dental Medicine (N=122) will be invited to participate in the study; (3) additionally, analysis by specialty program, background and key demographic variables will be performed. This analysis, and current training and practice guidelines will be used to develop recommendations for training and policy. Anticipated Results: Key informant interviews suggest that although dental residents receive training about oral diseases and their relationship with sexual practices, they do not consider sexual behaviors in practice; we anticipate good knowledge, but poor willingness to address sexual practices with patients. Anticipated Conclusions: Dentists’ training about and willingness to address sexual practices and their impact on oral health is lacking. Additional training should be integrated into existing residency programs.

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Poster Number 69
EARLY CHILDHOOD CARIES (ECC) PROGRESSION IN A SAMPLE OF PREDOMINANTLY HISPANIC, LOW-INCOME 2-6 YEAR OLDS ATTENDING A PEDIATRIC DENTAL CLINIC IN NEW YORK CITY

Objectives: To quantify the progression of Early Childhood Caries (ECC) in a sample of predominantly Hispanic, low-income 2-6 years olds and to examine its predictors. Methods: The study sample evolved from a validation study of an ECC risk reduction intervention (My Smile Buddy) that included 108 parent/young child dyads attending a Pediatric Dental Clinic in New York City for routine initial or recall dental examinations. Electronic health records were abstracted. Data at baseline (validation study) and subsequent dental exam up to 2 years later (follow-up) included visible plaque level (none/mild/moderate/severe), decalcifications (present/absent) and decayed/missing/filled teeth and surfaces (dmft and dmfs). Baseline streptococcus mutans levels (low/medium/high/very high) were also available. Positive ECC progression was defined as non-zero change in dmft. Results: Seventy-one children had follow-up dental exams. Overall, 53.5% experienced ECC progression, 75.8% among those with ECC at baseline. Stepwise logistic regression indicated that baseline ECC and plaque level predicted ECC progression (O.R. (95% C.I.) = 7.5 (2.4, 23.0), and 2.1(1.1, 4.1), respectively. Among those with no ECC at baseline (n = 38), plaque (O.R. (95% C.I.) = 4.0 (1.4, 11.2)) and mutans (3.4 (1.0, 12.0)), each taken separately, were predictive of ECC progression. Conclusions: The majority of children in this sample, with or without ECC at baseline, experienced ECC progression. Those with ECC at baseline were at heightened risk. Both mutans and plaque are useful in identifying those children with no ECC who are most likely to experience caries progression. Needed are studies of sustained ECC intervention trials with MSB.

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)
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Poster Number 70
FLUORIDATED COMMUNITY WATER KNOWLEDGE AND OPINION AMONG PARENTS IN SOUTHWEST FLORIDA

Objective: The purpose of this cross-sectional study was to determine the knowledge and opinions of parents in Collier County, Florida regarding community water fluoridation (CWF).

Methods: The study sample included 246 parents whose children were treated at an academic pediatric dental clinic. A structured survey instrument containing 32 items was completed by the parents. Chi-square test was used to test the association between race/ethnicity and CWF knowledge and behavior. Results: The mean (±SD) age of the parents and children was 34.03±7.80 and 6.41±2.78 years, respectively. The majority were Hispanic/Latino (77.2%). Among the participants’ children, 80.5% had experienced caries in the primary dentition and 32.9% in permanent dentition. More than 60% of the parents did not know whether the tap water at home contained fluoride. Most children (81.4%) did not drink tap water at home and 93% drank bottled water. Few parents (37.4%) knew the purpose of CWF, though the majority (51.0%) of participants agreed fluoride “should be added to the drinking water.” Only 7.4% of the participants believed there were health hazards associated with fluoride in drinking water, although 66.4% reported they did not know. Knowledge of the reason for CWF differed significantly by race/ethnicity (p < .0005). Conclusions: More education is needed in Collier County, Florida regarding CWF and its benefits. Consumption of non-fluoridated bottled water may increase children’s risk for caries in the area.

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Poster Number 71
CARIES RISK ASSESSMENT IN THE MEDICAL OFFICE; IDENTIFIED VARIABLES TOWARD BUILDING A MORE EFFECTIVE SCREENING TOOL

Objective: Primary care providers should screen toddlers using caries risk assessment tools during well-child exams, but adoption of this recommendation is low due to competing time demands, provider competence, and the availability of EHR-based caries risk assessments. In order to create a history-based caries-risk screening tool that easily assimilates into the workflow of a well-child visit, we sought to identify health screening measures intrinsic to the encounter that might relate to caries risk. METHOD: Analyzing the medical and dental EHR system from a major pediatric center, a cross-sectional analysis was conducted of over 40 variables pertaining to routine nutrition, development, and other screenings within the 12- and 15-month well-child templates to determine associations to caries risk and disease status at a later dental visit. RESULTS: 1,736 patients had a 12- and/or 15-month medical visit(s) and at
least one dental visit (mean age: 40 months). In addition to well-accepted risk factors such as a positive history of nighttime feedings (p=0.04) or mothers’ own poor oral health status (p=0.02), new risk factors were identified including delayed immunization status (p < 0.001), a low appointment show-rate (p < 0.001), and still breastfeeding at age 1 (p=0.03). CONCLUSIONS: The new risk factors for caries identified in this analysis are standard parts of well-child care and require little additional data input beyond baseline screening measures. In a 2016 pilot study, these variables will be incorporated into a new caries risk assessment tool within the medical EHR to increase oral health screenings in well-child visits.

Source of Funding: The DentaQuest Foundation
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Poster Number 72
BETEL NUT USE AMONG PREGNANT WOMEN: DEVELOPMENT OF A QUESTIONNAIRE

Objectives: Betel causes dependence and cancer and is used on the US mainland, Hawaii and USAPI. This study was to develop a perinatal assessment questionnaire. Methods: May-July, 2015, the English language 70-item questionnaire was administered to 55 pregnant women (Mdn 22.5 years) in USAPI. Readability was determined by Flesh-Kincaid. Survey includes questions about betel/tobacco use (8 items), pregnancy-risk (8), perceived health (4), and dependence, (Milgrom et al. 2015, 15), and health beliefs (Haslam & Draper 2000, 12). Participants were asked if they used tobacco with betel and how often. Responses to the true/false questions regarding craving were summed to form the dependence symptom scale, larger scores indicating greater dependence. Responses from 12 Likert style questions were summed to form the beliefs scale (larger scores betel is harmful to pregnancy). Reliability and validity were assessed. Results: 24/55 (43.6%) were primigravida. 20 had never used betel (36.4%), while 26 used it in the last 30 days (49.0%). 8/20 current users (40.0%) were primigravida. Flesch-Kinkaid level was 6th grade. The dependence symptom scale Cronbach alpha=.84. Mean dependence symptom score 8.2±3.9, nearly identical to a large group of non-pregnant adolescents who chew with tobacco in similar settings. Betel health belief scale alpha=.82. Mean belief score 8.4±3.1. Belief score was not related to the dependence for those who had used betel before pregnancy (pS=0.24, p=0.23) and was related for those who had used within the last 30 days (pS=.39, p=0.08). Conclusions: This perinatal tool can be useful for public health research and clinical assessment.

Source of Funding: None
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Poster Number 73
OBSTRUCTIVE SLEEP APNEA AWARENESS AND SCREENING IN THE DENTAL SETTING

Introduction: Obstructive Sleep Apnea (OSA) is a common sleep disorder that stays undiagnosed in a majority of cases. Dentists frequently perform the oral, pharyngeal, and neck examinations that are also part of the initial examination of suspected cases of OSA, which puts them in a position to make a timely diagnosis of OSA. This pilot study evaluates the awareness of OSA among dentists and explores their readiness to screen for it. Method: A questionnaire
with 15 questions was created and distributed at a dental site of Bronx Lebanon Hospital in order to measure OSA awareness among dental residents and faculty. Questionnaires were collected anonymously to maintain identity confidentiality. Results: A total of 32 survey questionnaires from dental residents and faculty were collected and analyzed. Answers ranged from good to no knowledge of the OSA condition and readiness to screen for it. Results show that 70 to 90% have somewhat knowledge, 66% are very willing to screen and 31% are somewhat willing to screen. Answers for willingness to screen differ between the Resident group (gave motivational answers) and the Faculty group (gave varied answers). The faculty group’s answers ranged from motivational (desiring best patient care, avoiding future complications) to less motivational (requiring extra time, training, and payment). Conclusion: Based on the questionnaire, we conclude that a majority of dental residents and faculty do possess some knowledge of OSA, but most would like to know more about it. Dental residents are more willing to learn and screen for OSA than faculty are.

Source of Funding: NONE

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Poster Number 74
BUILDING A CULTURE OF SHARED RESPONSIBILITY FOR ORAL HEALTH: CREATING TOOLS TO ADVANCE ORAL HEALTH INTEGRATION IN PRIMARY CARE EDUCATION AND PRACTICE

Oral health remains a major source of health care disparities; addressing this systemic issue requires engaging primary care clinicians in screening and preventive services. The National Interprofessional Initiative in Oral Health (NIIOH) has strategically worked to ready this workforce, integrating oral health into primary care education and practice through activities that cultivate leadership, facilitate interprofessional learning and agreement, and tools to advance a culture of shared responsibility for oral health. Objectives: This presentation focuses on two national integration tools: 1. Smiles for Life, a free, online, interprofessional oral health curriculum designed to increase knowledge and skills of an expanding oral health workforce 2. The Oral Health Delivery Framework, an integration model described in the Qualis Health White Paper, “Oral Health: An Essential Component of Primary Care” and a preview of an oral health integration implementation guide and toolkit Methods: Tools and evaluation data related to the uptake and integration of these approaches helps us track national diffusion of oral health integration. Results: Eighteen diverse organizations representing six health professions endorsed the Smiles for Life curriculum. Research suggests the curriculum has a direct impact on clinician practice. Twenty national organizations endorsed or supported the Qualis Health White Paper representing diverse stakeholders from public health dentistry, community dental programs, rural health, family medicine and various health professions. Pilot projects are now using and evaluating this approach. Conclusions: These two resources provide valuable information for educators, clinicians and health systems seeking to transform curriculum and care delivery models to include oral health integration.

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Poster Number 75
FLUORIDATION AND DISSEMINATION OF INFORMATION THROUGH THE INTERNET: A WORLD WIDE WEB CASE STUDY
Objective: Fluoridation information is disseminated by various sources through the Internet. The goal of this study was to define the types of information sources, measure their influence online, and assess their sentiments about fluoridation. Methods: We searched for all sources that published about fluoridation based on key word analysis using Media Cloud, a searchable big data platform of over 350 million digital publications, from 8-1-2014 to 8-1-2015. Source type, sentiment, and level of influence (quantified by number of inlinks), were assessed for each source. We conducted Pearson chi-squared tests to determine any associations. Results: We identified a total of 325 sources with 980 online publications. Government sources were primarily pro sentiment and had significantly more inlinks compared to non-governmental sources (p=0.0043). General news, 32% of all sources, were more likely to be neutral/pro fluoride (OR=4.41p=0.001) but had had fewer inlinks (p < 0.001) compared to other media types. Natural media websites showed anti fluoride views and were the most influential (p=0.020). Conclusion: Scientific evidence of fluoridation efficacy is available on different media types over the Internet. However, the findings of this study suggest that websites relying on natural medicine contrary to scientific evidence maybe more influential, since click behavior is a recognized measure for having been influenced by a site. Prospective longitudinal studies on the influence of different digital media types is necessary to define and address patterns and behaviors of online publishers who are influencing the public’s attitudes towards fluoridation.
Source of Funding: None
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Poster Number 76
THE MEDIATING EFFECTS OF SYSTEMIC INFLAMMATORY BIOMARKERS ON THE PASSIVE SMOKING-TOOTH LOSS RELATIONSHIP AMONG US ADULTS
Objective: While research shows that cigarette smoking is strongly associated with tooth loss, the passive smoking-tooth loss relationship, or the role of inflammatory mediators in this relationship, are unexplored. This study aims to assess this relationship and the mediation effects for inflammatory markers on the passive smoking-tooth loss relationship. METHODS: National Health and Nutrition Examination Surveys (NHANES) 2007-2012 yielded 4,997 eligible adults. Dichotomization into non-smokers (n=4,456) and passive smokers (n=541) was performed based on CDC smoking status definitions, using household smokers questionnaire responses, and serum cotinine levels and urinary NNAL (4(Methylnitrosamino)-1-(3-pyridyl)-1-butanol) levels. Inflammatory mediators are unavailable in NHANES datasets containing passive smoking exposure and oral examinations, therefore immune cell counts were assessed as markers for inflammatory mediators (White blood cells, Basophils, Neutrophils, Monocytes, Lymphocytes, Eosinophils, Platelets). Survey-Linear regression analysis and Sobel tests were used to test for mediation effects of immune cell counts on the passive smoking-tooth loss relationship. Results: Survey-linear regression analysis found that passive smoking increases tooth loss by 0.47 teeth (p-value=0.025). Mediation analysis found that Monocytes and Eosinophils demonstrated statistically significantly higher levels with passive smoking (Monocytes β:0.03,p-value=0.04; Eosinophils β:1.28;p-value=0.002). In contrast, other systemic inflammatory biomarkers (White blood cells, Basophils, Neutrophils, Lymphocytes, and Platelets) were unrelated to passive smoking. After controlling for passive smoking, Monocytes and Eosinophils demonstrated mediation effects with tooth loss; however, these effects were small and not statistically significant (Monocytes estimate=0.054,p-value=0.11;Eosinophils
estimate=0.055, p-value=0.06). CONCLUSION: While passive smoking increases tooth loss, systemic immune cell biomarkers of inflammation may not mediate the relationship.

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Poster Number 77

PRETERM/LOW BIRTH-WEIGHT PREGNANCY OUTCOMES AND PERIODONTAL THERAPY: A META-ANALYSIS

Objectives: To determine the effectiveness of nonsurgical treatment of scaling and root planning (SRP) for periodontal diseases (PD) during high risk pregnancies to reduce the cumulative incidence (CI) of low birth weight (LBW) and preterm births (PTB) in randomized clinical trials (RCT). Methods: Study Selection inclusionary criteria described pregnant women, randomized sampling and RCT, PTB (< 37 weeks), and LBW (< 2500 g). Effect sizes were measured in odds ratios (OR). Search strategy had temporal features from January 1, 2001 to December 31, 2013. Electronic databases were Medline, EMBASE and Cochrane library. All articles were published in English. Keywords: PTB, LBW, PD, pregnancy, RCT, CI, OR, and SRP. Data extraction determined quality of the study with a Jadad scale and a funnel plot to assess publication bias. Fourteen RCT had 12,651 patients. Statistical analysis utilized Comprehensive Meta-Analysis software, Version II. Heterogeneity values for PTB were Cochran Q-value (46.754), df (13), p-value (0.00), and I-squared (72.195). Point estimates for PTB with random effect model (REM) were 0.695 (0.487-0.992) with a p-value (0.045) and Z-score of (-2.004). Heterogeneity for LBW were Cochran Q-value (35.233), df (10), p-value (0.00) and I-squared (71.618). Point estimates for LBW with a REM were 0.721(0.453-1.148) with p-value (0.168) and Z-score of (-1.380). Results: SRP had no impact on reducing CI of LBW and limited change with PTB. Uterine contractions were stimulated from the release of prostaglandins after response of cytokines to PD endotoxin exposure. Conclusion: The effect sizes from SRP were statistically significant only for the CI of PTB.

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Poster Number 78

DENTAL SEALANT RETURN ON INVESTMENT FOR CHILDREN BEING SERVED AT THE FLORIDA DEPARTMENT OF HEALTH COUNTY HEALTH DEPARTMENTS

Objectives The purpose of this analysis is to calculate the long-term cost-savings associated with receiving dental sealants versus no preventive treatment for children receiving dental sealants at the Florida Department of Health’s County Health Departments (CHDs). Methods Data on the number of children receiving at least one dental sealant at Florida Department of Health CHD dental programs during 2014 was analyzed for cost benefit, by comparing the cost of receiving one sealant to the cost of treatment for decay (one tooth filling) on an unsealed tooth. First, the cost of not providing a dental sealant was calculated; this includes treating the children who present with untreated decay with one filling. Secondly, the cost of providing one dental sealant to the whole population was calculated; the possibility of that sealant failing and thus the child becoming at risk for decay and subsequently treated with a filling was also included. Total cost for the treated population was then subtracted from the total cost for the
untreated population, yielding a cost-savings statement. A return on investment calculation was performed. Results A total of 36,955 children aged 0-20 years received at least one dental sealant through CHDs and school-based sealant programs during 2014. Over the projected three year period, a total of $2,388,355.22 was saved by providing dental sealants to this child population. The return on investment was 88%; for every $1 invested in dental sealants, $1.88 is saved in treatment.

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**Poster Number 79**

**COMMUNITY-BASED SERVICE-LEARNING: LESSONS LEARNED AFTER 10 YEARS**

The University of Illinois, College of Dentistry is heavily engaged with community-based service-learning through a for-credit, graded and requisite course for D4 students. Didactic elements of the course focus on issues of access to care particularly regarding children, oral health disparities, social justice and the wide variety of models through which health care and dental services are provided in otherwise underserved communities. Methods: Within the course structure, D4 students can have up to 16 weeks of community-based service-learning experiences in 22 Illinois sites, one out of state site, and three international sites. Results: After a decade of experience with the course many lessons can be drawn regarding this form of curriculum and its impact on the College, its students and their career paths, and the community. These include: creating a core value for the College; effects upon faculty and administration regarding issues of access to care; the number of students who have entered into public service careers; the value the sites derive; and local recognition as a dental school that has made a genuine commitment to making a difference in underserved communities. The presentation will address these matters in detail. A copy of the course curriculum will be distributed as a hand-out. Conclusions: Community-based service-learning increases students’ understanding the issues of access to care and systems of care intended to address the needs of underserved communities, affects their career trajectory, and has value for underserved communities.

**Source of Funding:** RWJF, Illinois Children's Healthcare Foundation

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**Poster Number 80**

**THE INNOVATIONS IN ORAL HEALTH TOOLKIT: A RESOURCE FOR MULTI-LEVEL LEADERSHIP ENGAGEMENT IN ORAL HEALTH**

The objective of this session is to describe the Innovations in Oral Health Toolkit, a resource for multi-level leadership engagement in oral health. Methods include the following educational strategies and interventions: (a) interprofessional socialization, (b) train-the-trainer workshops, (c) team leadership assessment, (d) cooperative education, and (e) community-service learning innovations. To address the demands of a collaborative and patient-centered health care system, the Institute of Medicine (2011) recommended workforce innovations focused on core competency development and education of all health professionals in oral health care. In response to these recommendations, the Human Resources and Services Administration convened key stakeholders to develop a set of core clinical oral health competencies for primary
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care clinicians. Bouvé College of Health Sciences at Northeastern University, the largest health sciences school in metropolitan Boston, is cultivating the next generation of health professionals equipped with core clinical competencies in oral health. Results: These strategies have been implemented and evaluated as part of an effort to build capacity and expand the oral health network through students, faculty, and preceptor/clinician engagement. Findings will be presented to include the nuts and bolts of program development, implementation, and evaluation. Conclusion: This tool-kit can help prepare students across multiple health professions to enter their practices ready and willing to recognize the oral health needs of their patients and collaborate with dental professionals to address those needs.

Source of Funding: This project is funded by the DentaQuest Foundation.

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Poster Number 81
DENTAL PUBLIC HEALTH RESIDENTS’ PERSPECTIVE OF THE DPH COMPETENCIES; RECOMMENDATION FOR CHANGES

Objectives: The aim of this study was to survey the current DPH residents for their assessments of the DPH competencies with respect to their strengths and weakness. We also present recommendations for modifying the competencies based on the findings from this survey.

Methods: A face validated survey was emailed to all DPH program directors to be distributed to their residents. The survey domains were: 1) general perception of familiarity and importance of competencies, 2) effort needed to master each competency, 3) self assessment of respondent; a) rate level of proficiency, b) grade importance of each competency to future career goals, c) indicate primary source of knowledge to learn each competency, d) rating residency program effectiveness in teaching each competency. Results: We had responses from 37 of the 62 currently enrolled DPH residents (60%). Residents felt more competent in the “academic” competencies. All the competencies were viewed to be moderately to extremely important with the competency #3 about developing resources for oral health programs receiving highest rating, and the advocacy competency (#8) had the lowest rating. Academic classes were the primary source of knowledge of 8 of the competencies. Competency #8 had the lowest program teaching effectiveness. Conclusions: Competencies that are achieved by academics rather than work experience were rated at higher proficiency and program teaching levels. Recommendations are that innovative teaching techniques may be needed for “experience” competencies. Further recommendations will presented.

Source of Funding: None

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Poster Number 82
THE IMPACT OF EARLY HEAD START ON DENTAL USE

Objectives. We examined the effect of North Carolina (NC) Early Head Start (EHS) – a federal early education program for children under three years old and their families – on children’s dental use. Methods. We performed a quasi-experimental study, aiming to enroll all eligible children (n=1,458) in EHS programs in NC (n=26) and compare them with children of the same age, language and residential neighborhoods randomly selected from Medicaid files. We interviewed 479 EHS and 699 non-EHS parent-child dyads at baseline when the child was 9 months old and 24-month follow-up. Using logit models, we estimated the effect of EHS on the probability of having a dental visit (overall, preventive, treatment, emergency). We used a
marginalized zero-inflated negative binomial model to estimate the mean increment in number of overall dental visits for EHS compared to non-EHS children. We controlled for baseline dental need and dental use, a propensity score covariate, and included random effects for the EHS programs. Results. Over 24-months, 81% (388/479) of EHS children and 59% (413/699) of non-EHS children had a dental visit (P < 0.01). In adjusted logit models, EHS children had an increased odds of having any dental visit (OR=2.5; 95% CI=1.74-3.48) and having a preventive dental visit (OR=2.6; 95% CI=1.84-3.63) compared to non-EHS children. Children in EHS had 1.3 times the adjusted mean number of dental visits compared to the children not in EHS (95% CI=1.17-1.55). Conclusions. This study is the first to demonstrate that EHS provides services that increase dental use for disadvantaged young children.

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Poster Number 83
RELATIONSHIP BETWEEN FREQUENT RECREATIONAL CANNABIS (MARIJUANA AND HASHISH) USE AND PERIODONTITIS IN ADULTS IN THE UNITED STATES: NHANES 2011-12

Objective: To examine the relationship between frequent recreational cannabis (marijuana and hashish) use and periodontal disease among U.S adults. Methods: De-identified data from 2011-12 National Health and Nutrition Examination Survey were used. Outcome measures: probing depth (PD), clinical attachment loss (CAL), and severe chronic periodontitis as per CDC/AAP classification. Exposure of interest: self-reported cannabis use status measured using two separate classification systems. Classification I: “frequent recreational cannabis (FRC) users” and "non-FRC users”; Classification II: “non-FRC users and non-smokers”, “FRC users only”, “current smokers only”, and “FRC users and current smokers”. Bivariate analyses and multivariate regression models were performed. Results: Of the 1938 participants aged 30 through 59 years, 26.8% were FRC users, and 69.5% had severe chronic periodontitis. Mean number of sites with mild to severe PD and CAL was significantly higher among FRC users verses non-FRC users. Average CAL was significantly higher among FRC users verses non-FRC users (for full-mouth, quadrant, and sextant). Bivariate analyses reported a significant positive association between FRC use and severe chronic periodontitis (Cannabis use classification system I: OR=1.7, 95% CI=1.3-2.4, p-value=0.002; Cannabis use classification system II: OR=1.5, 95% CI=1.1-2.2, p-value=0.039), which held true in the multivariate models (Cannabis use classification system I: aOR=1.4, 95% CI=1.1-1.9, p-value=0.03; Cannabis use classification system II: aOR=1.4, 95% CI=1.1-2.2, p-value=0.024). Conclusion: Our study results showed that FRC users had greater PD and CAL, and higher odds of having severe chronic periodontitis, compared to non-FRC users. Moreover FRC use in the presence of tobacco smoking was found to be more detrimental to periodontal health.

Source of Funding: None
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Poster Number 84
ASSESSMENT OF ORAL HEALTH KNOWLEDGE AND DENTAL UTILIZATION AMONG HISPANIC ADULTS LIVING IN IOWA
Objectives: To determine oral health knowledge among Hispanic adults in Iowa, and assess the relationship between oral health knowledge and dental utilization. Methods: This study included a convenience sample of Hispanic adults. Participants completed a questionnaire pertaining to: oral health literacy, dental utilization, demographic, cultural, and dental characteristics. Oral health knowledge was categorized as low or high. Dental utilization was defined as visiting a dental provider ≤12 months or >12 months ago. Bivariate analyses and multiple logistic regression models were created to identify the variables related to the outcome variables (p < 0.05). IRB approval was obtained. Results: N=338. 67% of participants completed the questionnaire in Spanish. 51% had low oral health knowledge. 35% reported visiting the dentist >12 months ago. Low oral health knowledge was associated with visiting a dentist >12 months ago in the bivariate analyses. Final logistic regression analyses indicated that low oral health knowledge was associated with having < 12th grade education, lack of dental insurance, and preference for a Spanish speaking dental provider. Visiting a dental provider >12 months ago was associated with being male, earning ≤$25,000 per year, not having dental insurance, and never being told they have tooth decay. Conclusion: Dental utilization and oral health knowledge were associated. Patients with low oral health literacy may be less likely to utilize dental care, thus decreasing the opportunity to increase dental knowledge. Dental teams should recognize which patients are more likely to have low oral health literacy and provide dental education in patients' preferred language.
Source of Funding: Delta Dental of Iowa Foundation-Graduate Student Thesis Award Program
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Poster Number 85
THE ASSOCIATION BETWEEN ORAL HEALTH LITERACY AND FAILED DENTAL APPOINTMENTS
Objectives: To identify any associations between failed dental appointments and oral health literacy level. Methods: This un-matched case-control study investigated the above association at a University-based dental clinic. A case was a patient who had at least one failed appointment within the previous 12 months of the study and controls were patients who had kept all their scheduled appointments during the same period. The Comprehensive Measure of Oral Health Knowledge (CMOHK) recorded the oral health literacy levels of the study subjects. The CMOHK scores range from 0-23 and the present study sample was categorized into low (≤18) and high (>18) literacy groups. A separate questionnaire collected data on covariates and an electronic data base provided additional information. A multivariate logistic regression analysis investigated the associations between failed appointments and oral health literacy. Results: Certain socio-demographic characteristics and risk levels for dental diseases were comparable between cases and controls. Dental health-seeking behavior was better among controls than cases, but this difference was not statistically significant. The most commonly cited reason for failed dental appointments was 'forgetfulness' followed by 'time conflicts'. Low oral health literacy was associated with a two-fold increase in failed appointments (OR adjusted= 2.38; 95% CI: 1.05-5.40). Age was positively associated with failed appointments (OR adjusted= 1.03; 95% CI: 1.01-1.06). Conclusions: Poor oral health literacy was associated with
failed dental appointments. Insights into the impact of oral health literacy on failed dental appointments may help in improving patients' clinic attendance.

**Source of Funding:** None

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**Poster Number 86**

**FACTORS ASSOCIATED WITH THE ECONOMIC SUSTAINABILITY OF THE REGISTERED DENTAL HYGIENIST IN ALTERNATIVE PRACTICE**

Objective: The objective of this study was to investigate key factors associated with the economic sustainability of the Registered Dental Hygienist in Alternative Practice (RDHAP).

Methods: A 38 question electronic survey was disseminated via email to 254 RDHAPs who were members of the California Dental Hygienists' Association, via postal mail with the survey link to 440 RDHAP addressees obtained through the Dental Hygiene Committee of California, distribution of a flyer at an RDHAP symposium, and via RDHAP invitation only social media sites. Results: The response rate was 98 out of approximately 540. While 44% of the RDHAPs work in traditional dental hygiene practice, given the opportunity 61% would practice exclusively as an RDHAP. With regard to practice strategic planning and alliances, and 31% felt dentists lacked knowledge of the RDHAP, 25% indicated dentists were resistance to this workforce model. Regarding practice staffing patterns 75% indicated not having employees. Participants were asked about their business practice systems with 64% having solo portable practices and 16% having standalone practices. Economic sustainability challenges included practice business and equipment expenses (29%), insurance/reimbursement issues (21%), patient flow (19%) and RDHAP visibility (14%). Conclusions: RDHAP practice faces challenges including the need for strategic planning and alliances, efficient and effective patient flow, optimal staffing patterns and effective business systems. Further research should explore RDHAPs aligning themselves with community-based clinics, Federally Qualified Health Centers and Dental Support Organizations (DSOs) that have a commitment to prevention and the financial resources and staff to manage practice business systems.

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**Poster Number 87**

**DEMAND FOR ORAL HEALTH OUTREACH TO THE CHICAGOLAND VETERAN POPULATION**

As a result of an interaction with a dental patient who was also a U.S. Veteran, Nisha Garg, a D4 student at UIC Dental School, was awakened to the underserved status of many veterans in the United States regarding their oral health. Moved by her interactions with this individual, she created an outreach program titled Dental Wellness, which provides oral health educational seminars for veterans who are ineligible for VA-affiliated dental coverage at the Jesse Brown Veteran Affairs Center. Through these seminars, she has been empowering veterans to take control of their oral health and educating them about the linkage between their oral and systemic health. Due to the high demand for dental health knowledge and treatment for the U.S. Veteran population, Nisha hosted a Veteran's Screening Day at UIC College of Dentistry for Chicagoland veterans who have been searching for low-cost dental care. Though Nisha’s Dental Wellness program started with her individual commitment, the great concern for veterans’ oral health has expanded the project to include the enthusiastic participation of UIC College of Dentistry as a whole, and recently the Chicago Dental Society as well. This unique collaboration is leading to an avenue for veterans of a low socioeconomic status to receive dental care from Chicago Dental Society members at no or low cost. Nisha’s Dental Wellness...
project for underserved Chicagoland veterans illustrates how a simple outreach project can lead to rippling effects that create a lasting impact.

**Source of Funding:** Chicago Albert Schweitzer Fellowship Program

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**Poster Number 88**

**ORAL HEALTH EDUCATION AND SCREENING AT CALIFORNIA BAY AREA SENIOR CENTERS**

Objectives: This program aimed to increase oral health knowledge and address access to dental care issues of older adults in the California Bay Area. Methods: Surveys were collected to determine demographics, self reported oral health status, dental care utilization, insurance coverage and interest in oral health programming of older adults. Educational oral health seminars were held at three senior centers in the California Bay Area. Screening and referral programming was implemented on site at senior centers. Results: The majority of seniors surveyed were; over sixty, had not seen a dentist in over six months, did not have dental insurance coverage, and were interested in oral health programming. Most seniors did not have dental insurance and suffered from comorbid conditions. Screening results indicated that older adults at Bay Area senior center locations were in need of dental care. Conclusions: Older adults who visit senior centers would benefit from increased oral health education and access to dental care. Senior centers should be further explored as potential sites to provide non-traditional dental care and education.

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