Clinical and Educational Scholarship Showcase

April 22-24, 2015
Clinical and Educational Scholarship Showcase 2015

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ABOUT THE SHOWCASE

The Clinical and Educational Scholarship Showcase is sponsored by the Academy of Distinguished Educators for the purpose of highlighting the breadth of scholarly clinical and educational work being done by the faculty at New York University College of Dentistry.

The specific goals of the program are:

• To promote the outstanding patient treatment and teaching being performed at NYUCD

• To emphasize the role that faculty play in both the education of our students and the treatment of our patient population

• To give faculty and students an opportunity to present examples of their work to the University community

• To give faculty a venue for academic portfolio development
Schedule

WEDNESDAY, APRIL 22, 2015

POSTER VIEWING
8:30 AM – 5:00 PM
COMMONS

THURSDAY, APRIL 23, 2015

KEYNOTE LECTURE
“LET’S GET R.E.A.L.
(RESPECT-ENGAGE-AFFECT-LEAD):
CREATING THE SCHOOL CLIMATE WE WANT”
Dr. Judith Albino, Ph.D.
1:00 PM – 2:00 PM
ROOM 614

FRIDAY, APRIL 24, 2015

AWARD WINNING POSTERS VIEWING
9:00 AM – 1:00 PM
COMMONS

AWARDS CEREMONY
1:00 PM
433 FIRST AVENUE
ROOM 220
Judith Albino, PhD, is President Emerita and Professor at the University of Colorado. She currently serves as Associate Dean for Planning with the Colorado School of Public Health. She also directs the University of Colorado’s Leadership for Innovative Team Science Program (NCATS). As a Senior Consultant with the AAL Group, she provides leadership and professional skills training, for such groups as the ADEA Leadership Institute and a variety of university and corporate groups across the U.S. Trained in psychology, she has worked in dental research since beginning her academic career in the School of Dentistry at the State University of New York at Buffalo. After a hiatus of more than 15 years, during which she served as Associate Provost and Dean of the Graduate School at Buffalo, and then as President of the University of Colorado, and subsequently of Alliant International University, she returned to Colorado to work with colleagues to build a research program in health disparities of American Indian/Alaska Native populations. She is PI and Director of the Center for Native Oral Health Research, which is focused on behavioral interventions for oral disease prevention and is one of only five NIH-funded oral health disparities centers. She has served on the Council of the National Institute for Dental and Craniofacial Research and currently is a member of the NIDCR Special Grants Study Section. Dr. Albino currently provides consulting services in organization development and strategic planning. She is trained as an executive coach and maintains a small practice in that field, focusing primarily on clients in the health professions and on coaching to maximize the performance of academic, scientific, and health care teams and their individual members.
C1.

THE IMPORTANCE OF PROPER TREATMENT SEQUENCING; TREATING A FIXED/REMOVABLE PROSTHODONTIC REHABILITATION CASE TO RESTORE FORM, FUNCTION AND AESTHETICS IN A PATIENT SUFFERING FROM DEPRESSION

Andrew Kim, Michael Ferguson

A 42 year old female presents to the NYUCD clinic hoping to fix her teeth and to restore function and a smile. The patient has neglected dental care and mostly presented for emergency visits as needed. Her last dental visit to NYUCD was 4 years ago, presenting with fractured anterior teeth, and during this time, extensive root canal therapies and extractions were performed. She has a limited diet, due to non existing posterior teeth and presented with the chief complaint, “My mouth is a mess and I need my front teeth fixed.” Other than her chief complaint, she had financial constraints, as well a psychological problem with depression, which has progressively worsened over time. This was caused by loss of her mother 5 years ago and loss of her teeth. The objective of this case report is to determine and demonstrate an appropriate treatment plan. We considered the sequence of both fixed and removable prosthodontics in restoring form, function and esthetics, while considering her financial constraints, her mental condition and most importantly, satisfying her chief complaint.
C2.

AN INNOVATIVE APPROACH OF RETOURING AN ANTERIOR COLLAPSE BITE – A CASE REPORT

Maria Saiti, Claire Killisli, Najat Aldossarry, Klenise Paranhos, Michael Ghalili, Philip Kotick

Destruction of the enamel on anterior teeth is a widespread symptom of bulimia disease. One of the signs of this disease can cause the destruction of tooth structure, which can lead to a collapse of the patient’s bite. It can make it extremely difficult to restore such a challenge case in following a traditional restorative approach. A deep overbite caused by severe destruction of enamel can be corrected by many different methods. 1) intrusion of anterior teeth, 2) extrusion of posteriors, 3) a combination of anterior intrusion and posterior extrusion, 4) proclining anterior and 5) surgical correction. However, it should be decided which treatment planning method would be more beneficial or which would improve the patient’s facial appearance and functional efficacy with less invasive treatment.

This case report demonstrates an approach using minimal invasive treatment to correct the deep bite in a bulimia male patient with erosion of the anterior teeth. The treatment of choice was to treat the patient by increasing the anterior bite allowing the extrusion of posterior teeth. This created an adequate interocclusal space enabling us to restore the maxillary four incisors with highly satisfactory result.

C3.

A MULTI FACETED CLINICAL/DIDACTIC EVIDENCE BASED BEST PRACTICE (PATIENT CENTERED) APPROACH TO PATIENT CHIEF CONCERN SATISFACTION INTEGRATING CURRENT COMPREHENSIVE NYUCD CURRICULUM, “THE BEST AVAILABLE EVIDENCE” AND AN ADVANCED LABORATORY TECHNIQUE IN ORDER TO MAXIMIZE PATIENTS’ AESTHETIC/FUNCTIONAL CONCERNS: A CASE SERIES

Peter Mychajliw, Roshni Dhruva, Arthur Malayev, Nazneen R Jaffri, Tauseef Ahmed

Purpose: The purpose of this presentation is to show how the establishment of an interactive patient/student/faculty environment can ignite/foster critical thinking on many levels in dental students, thereby enhancing their armamentarium of life long learning tools, and can promote excellent patient care possibilities. Also, to highlight the application of EBBPP (1) in a dental school pre-doctoral clinical setting and how the use of a “clinical question and PICO format” (2) in conjunction with the patient’s chief concern satisfaction and the utilization of a common thread theoretical/laboratory/c clinical construct can propel the students forward into structured solutions options utilizing student peer group learning coupled with focused faculty mentoring/feedback. In addition, emphasizing a patient-centered value system motivates the students throughout their professional careers to perform in a way that always seeks the best outcome because it’s in the patient’s best interest. (3) it can also stimulate critical thinking, discussion and investigation into many circumstances in dentistry that may not have clear high level evidence support or conflicting data (such as aesthetic outcomes, medical/dental causal links, antibiotic premed protocols, ethical/science dilemmas, etc), allowing each student to unlock his/her unique educational potentials.

Methods: Four dentally complex patients with a common thread specific aesthetic/functional concern, were selected and EBBPP (1) concept was utilized to formulate comprehensive care plans. A clinical question was developed to aid in this approach: Is there a significant difference in periodontal health in patients receiving FPD when anatomically appropriate emergence profile enhancement is utilized vs. when no
emergence profile modification is taken into account? Student peer/faculty mentor pod was assembled (voluntarily) and tasked with the development and execution of this didactic/clinical endeavor. Faculty mentor provided overall clinical/didactic intensive facilitation. Students worked independently and collaborated together as well in applying current comprehensive NYUCD curriculum (spanning D1-4) concepts, “the best available evidence” with an advanced laboratory technique in order to maximize their patients’ aesthetic/functional concerns.

Results and Conclusion: This patient centered student pod concept facilitated multi platform learning across the dental student training hierarchy leading to evidence based best practice successful outcomes in these clinical cases. Additionally, one finding was especially interesting: All patients expressed genuine extremely positive satisfaction and gratitude in their treatment outcome. This patient-centered, theory-to-practice teaching concept can serve as a trellis in promoting excellent patient care.

C4.

EFFECTIVENESS OF A METHOD OF TEACHING SECOND-YEAR (D2) DENTAL STUDENTS HOW TO EXAMINE, DIAGNOSE, AND TREATMENT PLAN PATIENTS FOR INVISALIGN THERAPY

Rebecca L Poling, Richard Ho, Ravivan Wongwanwatana, Sami Affes

Purpose: The primary purpose of this study is to determine the effectiveness of teaching second-year dental students how to examine a patient, diagnose the treatment needs of the patient, and treatment plan a patient for pre-doctoral Invisalign therapy using online multimedia presentations and online skill testing.

Methods: Second-year dental students viewed three online presentations as part of the 2015 D2 Esthetics Course that were designed to teach the students how to examine a patient with worn incisors, then how to diagnose the patient for Invisalign therapy, then how to write special instructions for the development of the Invisalign ClinCheck treatment plan. These three online presentations had embedded quiz questions that were asked again on an online self-assessments used for measurement of knowledge. All students were then given a new case, NA, to examine, diagnose, and treatment plan special instructions for the ClinCheck. These three exercises were completed online generating a conformance score with the instructor (RP) recorded in the gradebook.

The same case (NA) will be given to third-year dental students who have not viewed the three online presentations as part of a formal course, although some students may have viewed how to examine a patient for the Invisalign Clinic. The D3 students will complete the three exercises online by April 8, 2015, and these conformance scores will be compared to the second-year dental student scores.

The analysis of the D2 scores compared to the D3 scores will generate data that will be used to verify if the viewing of the three online presentations impacted the students’ skills in examining, diagnosing, and treatment planning special instructions.

Another component of the research is planned where the third-year dental students will view the three online presentations, complete the presentation knowledge assessments, and then re-measure their skills in examining, diagnosing, and treatment planning the same case (NA) as well as an additional case.

The expected results are that the viewing the three online presentations and passing the online presentations knowledge self-assessments, by the second-year dental students will significantly improve the conformance scores in examining.
**C5:**

**ALL CERAMIC CROWNS: “PROCERA” CROWNS AS AN ALTERNATIVE TREATMENT OPTION FOR REPLACEMENT OF MULTIPLE ANTERIOR RESIN RESTORATIONS**

**Simran Bhalla, Michael B Ferguson**

A 40 year old female of Russian origin came to the NYUCD clinics to get her, “front patched tooth to be fixed with new fillings.” Patient had a history of fractured front teeth #7, #8, #9 and had restored with composite restorations multiple times. The patient had root canal done 8 years ago on #7, #8 when patient had a trauma. #9 was a vital tooth but had a class IV cavity restored with composite. Patient was very conscious about her smile and was concerned about the fracture of her front fillings. Patient has gone to the dentist regularly for cleanings. Every 8-9 months she had to get the fillings replaced due to the recurrence of fractures, but she was never satisfied and thus changed her dentist. The patient had heard about veneers but was not very sure whether it could be an option for her. The objective of the case report is to clinically assess the problem list of the case and address her esthetic needs through comprehensive treatment and deliver the utmost quality care.

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**C6.**

**LOCAL ANESTHESIA MANAGEMENT IN PATIENTS WITH PHEOCHROMOCYTOMA: A LITERATURE REVIEW AND CASE REPORT**

**Maurice Srour, Leslie Abraham**

A pheochromocytoma is generally a benign tumor and of rare occurrence. Originating from the chromaffin cells in the medulla of the adrenal gland, this neoplasm results in increased amounts of catecholamines, epinephrine and norepinephrine.

These tumors are a scarce entity in medicine and are seldom discussed in dentistry. Understanding the pathophysiology, treatment, side effects, and pharmacological impact of this pathology are critical factors in ultimately treating a patient diagnosed with pheochromocytoma in a dental setting.

This presentation describes a 39 year old female who presented to the Oral and Maxillofacial Surgery Clinic at New York University College of Dentistry with an intraoral swelling. Her medical history revealed she was diagnosed with a pheochromocytoma 8 months prior to arriving at the clinic and had undergone treatment.
The patient required an extraction of her maxillary left second molar under local anesthesia to eliminate the source of infection and pain.

This case report also includes a literature review and highlights the importance of local anesthesia management and concerns in patients diagnosed with pheochromocytoma who present for dental treatment.

C7.

RENAL OSTEODYSTROPHY OF THE MANDIBLE: A RARE CASE REPORT

Sonal S. Shah, KC Chan, Huzefa Talib

Introduction: Renal osteodystrophy refers to bone diseases that result from the abnormal metabolism of calcium, phosphate and bone secondary to kidney disease and secondary hyperparathyroidism. In this report, we present a patient with generalized mandibular enlargement of unknown origin that was eventually diagnosed with underlying kidney disease.

Case Summary: A 23-year-old black male presented to the emergency clinic with a chief complaint of pain related to his lower third molars. He reported a medical history significant only for hypertension and was taking Norvasc and clonidine. He exhibited painless generalized mandibular enlargement. A panoramic radiograph was taken and revealed a diffuse “ground-glass” trabecular bone pattern. The clinician ordered a CT scan and bloodwork to rule out any systemic diseases. The patient was then lost to follow-up. He returned 2 months later with pain related to the right lower third molar. He reported that he had recently started dialysis and was now diagnosed with focal segmental glomerulosclerosis and secondary hyperparathyroidism. The lower right third molar was extracted and tissue was curetted from the socket and submitted for histology. The biopsy specimen showed cellular fibrous connective tissue admixed with irregularly shaped viable bone trabeculae with a small focus of multinucleated giant cells. A diagnosis of benign fibro-osseous lesion consistent with renal osteodystrophy was rendered.

Conclusion: This case shows how an unknown systemic disease can present with an oral manifestation that can lead to its diagnosis. This patient’s generalized mandibular enlargement with diffuse “ground-glass” radiographic changes was an oral manifestation of underlying metabolic kidney disease. Early diagnosis made by dentists will minimize the morbidity associated with this condition.

C8.

MUCOUS MEMBRANE PEMPHIGOID WITH OCULAR INVOLVEMENT: A CASE REPORT

Sonal S. Shah, Mohamed Dahawi, A. Ross Kerr

Background: Mucous membrane pemphigoid (MMP) is a chronic blistering autoimmune disease in which autoantibodies are directed against components of the basement membrane. It affects mostly the oral mucosa but ocular and genital mucosa may also be involved. MMP affects the elderly population with a female predilection. It often presents in the oral cavity as a desquamative gingivitis with rarely seen bullae. Treatment of MMP is often individualized and varies from topical to systemic immunosuppressive drugs. We will present a case of a female patient with MMP and extensive ocular involvement. CASE: A 57-year-old
A female patient with asthma was referred to evaluate and treat a persistent desquamative gingivitis. The case was challenging as the patient only spoke Spanish and was severely mentally impaired. Extra-oral exam revealed erythema, ulceration, and symblepharon of bilateral ocular mucosa but no skin lesions. The patient claimed that her eye doctor said she had a bacterial infection and was given eye drops. Her intra-oral exam showed erythematous desquamative gingivitis with a positive Nikolsky sign. A biopsy was performed and sent for microscopic exam and direct immunofluorescence (DIF). The H&E biopsy showed non-specific ulcer while the DIF reported a definitive diagnosis of pemphigoid. She was treated with prednisone doses that have been gradually tapered and both oral and ocular symptoms have significantly improved.

Conclusion: This case demonstrates the importance of recognizing other more serious systemic diseases related to the gingiva and oral mucosa. It also shows the important role of a dentist in performing an extra-oral exam and discussing abnormal findings with the appropriate medical specialist. Finally, the role of DIF in making the correct diagnosis is emphasized.

C9.

EHLERS DANLOS SYNDROME: A CASE REPORT
George Raymond, Jyoti Kansal, Tushin Shah

Ehlers-Danlos syndrome is a hereditary collagen disorder which manifest primarily in the skin and joints. The condition is organized into six subtypes under the Villefranche classification. Oral health can be affected and skin extensibility, joint hypermobility, delayed wound healing, as well as generalized connective tissue fragility can often be detected. This case report presents a 56 year old female that presented to NYUCD for comprehensive treatment. A brief literature review of the syndrome is conducted with explanation of the classification system. An overview of Ehlers-Danlos syndrome will be offered and a review of dental considerations. This case report will also review particular dental and medical considerations taken for the patient during her treatment at NYUCD.

C10.

FULL MOUTH REHABILITATION OF A PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOUS
Colleen A. Watson, William W. Bongiorno, Tasadaq Khakwani, Micahel Hatton

Systemic lupus erythematos is an autoimmune disease predominantly affecting African-Americans and Orientals (Feng 2007). The mechanism of this devastating disorder includes loss of self-recognition by the immune system with cardiovascular, renal, skin, joint, and nervous system manifestations (Duzgun 2007). The disease is an immune complex mediated condition, where the autoantibodies target DNA, chromatin, and histones. The presence of antibodies against DNA in blood is a significant marker tested for diagnosis. Recent studies indicate that nucleosome is the primary target in the pathophysiology of SLE (Duzgun 2007). The cardiovascular manifestations of SLE include severe damage to blood vessels, hypertension, myocardial infarction, and stroke (Tanay 2007). Patients with SLE experience profound xerostomia leading to extensive caries, periodontitis, mucocutaneous lesions, odontogenic infections, temperomandibular joint infection, and candidiasis (Albilia 2007). This presentation describes a 65-year old female who presented to the NYUCD 4S clinic with initial complaint of extensive caries of anterior teeth, missing teeth, and gingival inflammation. This report highlights the history, diagnosis, management, treatment, and concerns of patients with SLE.
C12.

FABRICATING INDIRECT TOOTH COLORED RESTORATION: TEACHING STUDENTS TO EXPAND THEIR MINDS BY COMBINING DIGITAL AND CONVENTIONAL METHODS

Mina Nagui Antoun Saadalla, David Hershkowitz, June Weiss, Barbara Slaska, Ying J Wong

Introduction: The software in the CAD/CAM system assists students in their self-evaluation and provides immediate feedback. It demonstrates to students how the quality of input (i.e. preparation, imaging, etc.) has a profound impact on the quality of the output.

Purpose: To demonstrate to junior and senior year dental students the advantages of combining digital technology with conventional methods when treating patients with esthetic restorations.

Method: A 42 year old patient presented to NYUCD with an endodontically treated upper left first premolar requiring a crown. After preparing the tooth, an impression was taken and a stone die poured – this was done in a conventional manner to allow the student to be able to evaluate taper, margins, occlusal clearance as well as to check for undercuts extra-orally. CAD/CAM was then used to scan this stone model and produce a digital 3D die that can be visualized in a detailed, clean and unobstructed view. The margins were identified and traced digitally, and the 3D model was rotated to visualize a customizable path of insertion that highlights undercuts. The restoration was then fabricated on the digital die, and a tool button that acts like a waxing instrument with the ability to add, remove and smoothen surfaces was used to easily manipulate the restoration to yield the desired result. Once the tooth-colored restoration was milled according to the pre-requested shade, the CAD/CAM crown was tried in, after which it was glazed, polished, and bonded to the tooth using conventional dual cure resin cement.

Conclusion: Students become better skilled at esthetic indirect restorations when combining both conventional and digital techniques as they can critically assess their work under digital magnification, producing faster yet more meticulous results.

C13.

FULL MOUTH REHABILITATION OF A PATIENT WITH SCHIZOPHRENIA

Colleen A. Watson, William W. Bongiorno, Tasadaq Khakhwani, Michael Hatton

Schizophrenia is a psychiatric disorder with a prevalence rate of 1% worldwide (Friedlander 1991). It is usually diagnosed at a young age and is considered the 7th most disabling disorder among children. The mortality rate is twice as high in this population and is called a “life-shortening disease” (Leucht 2007). Symptoms include thought disturbances, hallucinations, delusions, lack of emotions, expressionless face, and monotonous voice. Patients are diagnosed with schizophrenia based on mental status exam, psychiatric history, and behavioral observations. The exact cause of this disorder is still not well understood. Magnetic resonance imaging (MRI) shows abnormalities in the prefrontal cortex. Oral manifestations of schizophrenia include hyposalivation, periodontal disease, rapid caries progression, and trauma caused by parafunctional habits. This presentation describes a 45-year old male who presented to the NYUCD 4S clinic with initial complaint of erosion of anterior teeth, fractured teeth and restorations, missing teeth, and gingival inflammation. This report highlights the history, diagnosis, management, treatment, and concerns of patients with Schizophrenia.
AN ESTHETIC CHALLENGE: CASE REPORT UTILIZING A COMBINATION OF MONOLITHIC CERAMIC VENEERS AND PORCELAIN FUSED TO METAL CROWN

Suhasini Mandiga, Denise Estafan

Introduction: Restorative dentistry is the art and science of replacing human tooth structure. Individually, enamel and dentin are low-strength materials but when combined, have a unique bond that can last a lifetime. Finding the perfect dental material to mimic nature’s bioengineering through the years has emerged from a monolithic metal design to a bi-layered metal-ceramic or zirconia-ceramic design and then to monolithic ceramic design. The success of an esthetic rehabilitation not only depends on the clinical procedures or the lab utilized but more importantly, the correct selection of the materials for each individual case.

Purpose: The purpose of this case report is to describe an aesthetic rehabilitation using two different restorative dental materials to achieve an acceptable esthetic outcome.

Case Description: A 48 year old caucasian male presents to the dental clinic with a chief complaint of discoloration and cracks that developed on his 16 year old veneers. Examination revealed 5 discolored veneers with several areas of wear and crack propagation and an existing crown with recurrent decay. Recession of his anterior teeth displayed the margins of his existing restorations. He was unhappy with his smile and wanted a smile makeover that would appear as naturally as possible.

Materials and Method: Monolithic pressed lithium disilicate has a combination of high flexural strength and durability without compromising the optical properties. Porcelain fused to metal’s high structural performance and esthetic capability has been dependable for more than five decades. These two materials were selected to replace and restore six maxillary anterior teeth.

Conclusion: Restoration of a pleasant smile by successfully matching two different materials in the esthetic zone was achieved to the patent’s satisfaction.

POST TRAUMATIC STRESS DISORDER AND DENTISTRY: A CASE REPORT

Suhasini Mandiga, Colleen Watson

Post Traumatic Stress Disorder (PTSD) is associated with poor social and family relationships, can cause social, occupational, physical disability as well as have considerable economic costs and high levels of medical utilization. According to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, the lifetime prevalence of PTSD among U.S. general population is about 8.7%. They are often anxious, hostile, depressed, withdrawn, or resistant to treatment and present with greater dental and behavioral challenges than most dental patients and it is important for the dental professional to understand the symptoms and diagnostic criteria. Our aim is to report a patient presenting to the dental office with symptoms of PTSD due to loss of teeth after experiencing orofacial trauma and how the treatment in the dental office improved his lifestyle. Understanding the challenges and formulating a functional and attractive dental treatment plan may improve long-term rehabilitation by enhancing self-esteem and social interactions.
C16.

ENDO-PERIO LESIONS: DIAGNOSIS AND TREATMENT

Yashashwini Bangalore, Manju K Gopinathan, Mihaela M Harutunian, Yoon Shin Lee

The dental pulp and periodontal tissues are closely related and communicate via dentinal tubules, apex, lateral and accessory canals. The pathological association of the pulp and peri-radicular tissues lead to Endo-Perio lesions. Combined endodontic-periodontal lesions have always been a challenge in dentistry and have created a clinical dilemma treating such lesions due to inaccurate diagnosis and questionable prognosis of the affected teeth. This clinical case report will demonstrate the steps to diagnose and treatment plan an endo-perio lesion in the mandibular central incisor with severe attachment loss. The tooth was clinically and radiographically examined and confirmed as an endo-perio lesion by diagnostic tests. Root canal treatment along with scaling and root planning were performed and the tooth was stabilized by splinting with the adjacent teeth. This case report may warrant further intervention by advanced periodontal and endodontic surgical procedures in successful management of endo-perio lesions.

C17.

MINIMALLY INVASIVE STAGE 2 SURGERY WITH SPECIALLY DESIGNED CONCAVE COVER SCREW

Maryse Manasse, Aikaterini Georgantza, Abdullah Alodadi, Sang Choon Cho, Stuart Froum, Peter Loomer

To minimize the risk of soft tissue encapsulation, it has been recommended to keep the implant submerged and load free during the healing period. This can be more crucial especially under the following circumstances: i) in combination with an augmentation or guided bone regeneration procedure that requires the wound to be closed tightly to prevent infection to the bone or membrane exposure, ii) preventing undesirable early loading of the implants when the interim prosthesis cannot be effectively adjusted or iii) when the quality of bone is poor and the primary stability is questionable. A proposal of an innovative minimally invasive technique which can prevent a scar tissue formation and can lead to the most beneficial management of the soft tissue for a successful prosthetic outcome for the submerged implant approach will be presented for the aforementioned reasons. The technique describes a step by step protocol utilizing a modified cover screw by effectively localizing the implant, which can eventually enhance the keratinized tissue and enable immediate provisionalization.
C18. 

THE USE OF DENTAL DOSIMETRIC CONTOURING (DDC) TO ASSESS IMPLANT OSSEOEINTEGRATION FAILURE: A CASE REPORT OF A PATIENT WITH PHARYNGEAL CARCINOMA AND LITERATURE SEARCH

Ryan S. Lee, Nicole D. Holland

In 2012, patient R.D. a 55-year-old male, presented to the cancer center (New York, NY) and underwent surgical resection followed by chemotherapy and radiation (IMRT – intensity-modulated radiation therapy) for his pharyngeal carcinoma. After stabilization of his cancer disease, the patient received two endosteal implants in the operating room to support a mandibular overdenture. Six weeks later, however, one implant showed a failure in osseointegration and was removed. This study assesses the possible reasons for failure in osseointegration using a novel concept: dental dosimetric contouring (DDC) using dose-volume histograms (DVH) from radiation oncology treatment plan records. DDC was used to assess possible osseointegration failure. All patients undergoing radiotherapy for oropharyngeal cancers have radiation treatment records that are developed by a team of radiation oncologists and medical physicists. These records were obtained to delineate IMRT dose areas to the left & right posterior mandibular areas in and around the implant sites. Dose-volume histograms (DVH) were generated to measure specific radiation doses to the areas in question. Finally, a literature search was conducted in PubMed and Ovid Medline to assess the scope of dosimetric contouring, IMRT, and osseointegration in implant dentistry as well as in dental oncology. The failed osseointegration site (#30) showed a mean IMRT dose of 59.2 Gy and a max point dose of 67.4 Gy, which is above the often-accepted “cutoff” of 55 Gy associated with implant failure. In contrast, DDC and DVH showed that the successful implant on the contra-lateral mandible (#19) received only 42.2 Gy. A literature search showed little past research on DDC in dentistry, let alone IMRT contouring vis-à-vis implantology, implant success, or osseointegration. Patients with various forms of oropharyngeal cancers often undergo surgical resection, chemotherapy, and/or radiation therapy, necessitating implant dentistry to restore form and function after cancer treatment. However, little research has been done to elucidate the relationship between implant failure (including osseointegration) and radiotherapy characteristics. Although a dose of 55 Gy is often associated with decreased implant survival, each patient’s radiation dose, type, and location factor into specific outcome profiles. This case report used DDC and DVH analyses to propose a novel method for assessing implant osseointegration failure. Future research should involve prospective and larger-sample studies to better assess the relationship between IMRT, DDC, and implant therapy success.

C19. 

CLINICAL ADVANTAGES OF USING A NON-RESTORABLE TOOTH AS DRILLING GUIDE FOR IMMEDIATE IMPLANT PLACEMENT

Yu Yung Cheng Paul, Lopes Ana Sofia, Alhrthy Fadwa

Immediate implant placement at multirooted sites involves a series of anatomical challenges. The presence of interradicular bone septa may complicate the ideal implant positioning. Immediate implant placement using the existing tooth as a surgical guide can be a useful procedure to counteract those clinical difficulties. There are several clinical advantages for following this approach. It allows improved guidance for implant surgery, since the tooth itself functions as an anatomical 3-dimensional guide for ideal placement. An advantage of using this approach is to facilitate the extraction after the osteotomy is performed. The use of the drills will weaken the existing tooth and will result in a minimally invasive extraction preserving more bone and reducing trauma to the adjacent anatomical structures. An additional advantage that should be considered is the fact that this technique uses the morphology of the trunk of the roots to guide the drilling process into the interseptal bone of the socket. This will obtain the primary stability of the implant regardless the size and the shape of the extraction socket. The aim of this clinical report is to document five cases using the tooth guided site preparation technique for immediate implant placement.
C20.

**RADIOGRAPHIC AND SURGICAL GUIDE TO BUILD CONCAVE PREMOLAR AREA OF MAXILLA**

Lupo Villega, Ye Shi, Saqer Almutairi

Recently, harvesting the lateral sinus wall during sinus grafting has been described as a source of autologous bone graft for the reconstruction of maxillo-mandibular ridge defects. The accessibility of the lateral sinus wall via an intraoral approach makes it an excellent candidate for bone graft harvesting. However there is no guideline for the quantity of bone volume available and the configuration of the defect. The purpose of this presentation is to demonstrate the use of a radiographic template and a 3-D printed model to guide bone augmentation procedures with autologous bone graft in the atrophic maxillary premolar region.

C21.

**TWO CASE REPORTS ON DENTCA™ CAD/CAM DENTURES**

Anthony Congiusta, Renee Kojanis, Steven Resnick, Martine Mandracchia, Ashok Soni, Igor Chikunov, Thomas Giugliano, Leila Jahangiri

Objective: DENTCA™ has utilized CAD/CAM technology to allow dental professionals to create complete dentures for patients. It is beneficial to both the patient and the practitioner to fabricate digital complete dentures in a minimum of two visits!

Methods: Two patients volunteered to have digital maxillary and mandibular complete dentures made by their student dentists. Appropriately sized maxillary and mandibular DENTCA™ trays were selected. A maxillary custom tray was created by adding a thick layer of fast-setting heavy body PVS to a maxillary tray and seating it firmly. Border molding movements were subsequently performed. Any exposed tray areas were adjusted with an acrylic bur. A second (wash) layer of fast-setting light body PVS was applied on top of the heavy body impression. The border molding sequence was repeated. If any tray parts were still exposed, they were adjusted with and the student dentist re-applied the wash layer and repeated the border molding sequence. The same process was repeated for the mandibular arch.

The posterior parts of both trays were separated. A center pin was attached to mandibular tray and adjusted to the desired vertical dimension. EZ-tracer™ was attached to the maxillary tray. The patient moved the mandible from the most posterior position laterally to the right and left and then back to the starting position several times. An arrow was created, with the apex indicating centric relation (CR). The CR position was recorded by drilling a small dimple at the apex of the arrow.

Bite registration was taken with both trays in the mouth. The trays were subsequently removed and given to the DENTCA™ representatives for processing. Two weeks later, the dentures were inserted.

Conclusion: Digital technology has the potential to be a much more efficient and accurate way of fabricating complete dentures. Both patients were satisfied with the results.

C22.

**PREDOCTORAL FULL COVERAGE IN AESTHETIC ZONE**

Pooja Mayor, Colleen Watson, Fred Dubrowsky

Captek is a unique material with great qualities. It is an advanced metallurgic system that was developed to combine optimal natural esthetics of dental porcelain with the strength of ceramometal. It produces accurate fixed prosthesis on all types of tooth preparation and provides a biocompatible environment for the oral / tissues. It is composed of high noble metals such as Gold, Platinum and Palladium. Its internal structure and composition resists oxide formation that reduces tissue irritation and helps maintain the porcelain's natural characteristics, original color, and luster. Captek System have the advantage of providing additional strength required without gross reduction. Studies have shown that captek is preferred to be used on patients with para-functional habits, long span bridges, and molar restorations due to its strength and maximum toughness. The minimal gap and high smoothness of the Captek crown margin eliminates tissue irritation that is commonly seen around other crown materials. There
is a high biocompatibility seen in this material due to the high content of gold. Captek’s exclusive structure with its shock absorbing property, protects the supporting bone around the tooth or implant. The appearance of the restoration also appears to be enhanced by the gold color of the substructure. This presentation describes the Aesthetic concerns and treatment for a 45 year old female patient who came in with a fractured tooth #7, missing teeth, over contoured crowns, Mild generalized chronic periodontitis, over contoured crowns and discolored anterior teeth.

C23.

NEW WAY OF THINKING IN RIDGE AUGMENTATION WITH THE SONIC WELD TECHNIQUE

Mitchell J. Bloom, Chi Chieh Liang

There are a wide range of techniques and materials available for the purpose of augmenting alveolar ridge defects. And, like many clinical treatment options, each has its strengths and weaknesses and the “Sonic Weld Technique” discussed herein holds great promise to capitalize on established historical strengths of many existing techniques while also overcoming many of their limitations and with greater predictability. Requisite to regenerating lost hard tissue in regenerative surgery is the need for space maintenance under soft tissue flaps. Sonic Weld does this with arguably the greatest degree of versatility with regard to defect shape and extent. Additionally, many techniques utilized in bone regeneration incorporate the use of products that are not absorbable and therefore must be retrieved at a later time. This latter factor often necessitates larger surgical re-entry than would be needed to otherwise simply place implants in regenerated sites and also increases the duration of a surgical visit and the related morbidity. To overcome these potential limitations, simplify the lateral ridge augmentation procedure, and likely increase its utility and predictability, a non-crystalline poly-D-L-lactic acid (PDLLA) resorbable membrane and pins have been introduced as the “Sonic Weld”(R)technique. The PDLLA membrane and pins are made of a thermoplastic material that can be re-shaped to adapt to the defect morphology and create the space and ultimately the shape of the desired ridge architecture while also providing for optimal distribution of forces over the underlying bone tissue. Moreover, the PDLLA membrane exhibits optimal space maintenance properties as it becomes rigid once its shape and contour is established by the operator. The purpose of this presentation is to discuss surgical considerations of the Sonic Weld technique.

C24.

ORAL MANIFESTATIONS OF LICHENOID MUCOSITIS IN AN EDENTULOUS PATIENT WEARING COMPLETE DENTURES

Pooja Mayor, Alper Comut, Sonal S Shah

Lichenoid changes in the oral mucosa can be encountered in a wide range of lesions with varied etiologies including immune-mediated disorders, reactions to systemic medications and to dental materials. The clinical manifestations of oral lichenoid lesions are indistinguishable from those of oral lichen planus with mainly erythematous erosive lesions and an important ulcerative component. All these lesions are characterized by the presence of whitish streaks known as Wickham striae, similar to those seen in lichen planus. However, a very significant distinguishing factor with respect to OLP is their atypical location, and particularly the absence of bilaterality of the manifestations. This presentation describes the history, diagnosis and treatment of a 90 year old male patient who presented to NYUCD with ill-fitting dentures, with red and white lesions with ulcers in the denture bearing areas.

C25.

ROBINOW SYNDROME IN SPECIAL CARE DENTISTRY: A CASE REPORT

Kavita Patel, Huzefa Talib, Ryan S. Lee

Proper diagnosis of both medical and dental ailments is very important in providing appropriate treatment as well as determining prognosis. This becomes even more apparent when dealing with rare conditions that must be considered before rendering treatment. This case report presents a unique case of a 23-year-old female diagnosed with Robinow Syndrome, a rare genetic disorder first described in 1969. The patient presented to the Special Patient Care (SPC) clinic at NYU College of Dentistry with a chief complaint of “pain on the lower left back area” localized distal to the terminal molar. Patient’s medical history revealed a diagnosis of
Robinow Syndrome made in Peru in infancy. However, the patient’s mother stated that other doctors had also incorrectly diagnosed her with Pierre Robin Syndrome, a different condition with a similar name. Upon clarification, subsequent panoramic imaging revealed an impacted #31 and enlarged marrow spaces in the mandible, suggestive of an underlying metabolic disorder. Clinically, the patient presented with short limbs and stature, severe dental crowding, hypoplastic maxilla, and repaired cleft palate and cleft lip. These patients typically also present with other concomitant medical conditions that need to be considered when performing any dental treatment. Regarding this patient’s chief complaint, we proposed a minimally invasive procedure as we did not yet have medical clearance for extraction nor was it deemed necessary at the time. This case exemplifies the need for interdisciplinary care as well the importance of understanding rare conditions as they present in the dental setting.

C26.

MANAGEMENT OF A DENTIGEROUS CYST IN A PATIENT WITH CLEIDOCRANIAL DYSOSTOSIS-A REVIEW OF THE LITERATURE AND CASE REPORT

Matthew J. Breit, Thomas W. Hussey, Leslie A. Abraham

Cleidocranial dysostosis, also known as cleidocranial dysplasia, is an inherited autosomal dominant disorder that causes delayed ossification of the midline structures. It is caused by a defect in the CBAF1 gene that results in haplogenesis, although some cases are idiopathic in origin. This gene is located on the short arm of chromosome 6 and codes for a transcription factor that is responsible for the differentiation of osteoblasts. Patients with this condition often times have underdeveloped, or in more rare cases, missing collar bones. Additionally, there are a multitude of dental manifestations such as mandibular hypoplasia, multiple supernumerary teeth, and failure of eruption of permanent teeth. This presentation describes a 62 year old man who presented to NYUCD Oral & Maxillofacial Surgery clinic with initial complaints of pain in the lower left posterior region determined to be a dentigerous cyst. This report highlights the history, diagnosis, treatment, and concerns of a dentigerous cyst in a 62 year old male with cleidocranial dysplasia.

C27.

DENTAL HYGIENE PATIENTS’ WILLINGNESS TO UNDERGO HIV TESTING

Winnie Furnari, Susan Davide, Petal Leuwaisee, Marilyn Cortell, Anthony Santella, Bhuma Krishnamachari

In the U.S., an estimated 20% of people living with HIV (PLWH) are unaware of their status. Expanding rapid HIV testing (RHT) in the dental setting may increase the number of individuals aware of their HIV status and can begin treatment and social support early. RHT is an easy and accepted screening tool. It has been introduced in mostly primary care settings. Dental hygienists are committed to patient education and disease prevention and there is evidence they can effectively conduct RHT. This study aimed to determine knowledge and willingness to accept HIV testing in a dental setting.

A cross-sectional survey was administered among 300 dental hygiene patients at dental hygiene program clinics in New York City from November 2013 – February 2014. Using the Decisional Conflict Theory, patient acceptance of RHT, provider type preference and willingness to pay were assessed.

The mean age of respondents was 38.03 (SD 14.6), 55.5% were female, 41.5% were White and 37.3% Hispanic. The majority (72.1%) indicated willingness to have HIV testing in a dental setting with 87.1% choosing oral RHT, 6.2% finger prick RHT and 8.4% a blood draw. 94.1% of respondents felt sure about the best choice for them. 71.9% found testing by dental hygienists to be acceptable, 75.3% found testing by dentists to be acceptable and 30.9% found testing by dental assistants to be acceptable. Cost-wise, 84.8% indicated they would only take the test if it were $20 or less. The mean decisional conflict score was 3.5/4.0.

Patients are willing to undergo oral RHT HIV testing with dental hygienists. With a high decisional conflict score, patients appear aware of the benefits and risks associated with RHT. Further research is needed to evaluate the public health benefits and logistical challenges facing the provision of HIV testing in the dental environment.
C28.

**VIEWS OF DENTAL PROVIDERS ON PRIMARY CARE COORDINATION**

Shirley Birenz, Mary E. Northridge, Danni Gomes, Cynthia Golembeski, Ariel Port, Janet Mark, Donna Shelley, Stefanie L. Russell

Problem Statement: Dental hygienists are well-positioned to screen for diabetes and hypertension and provide tobacco cessation and nutrition counseling at the dental hygiene treatment visit, notwithstanding such challenges as limited time and access to evidence-based resources. Purpose: To assess dental hygienists’ and dentists’ perspectives and experiences regarding current scope of practice and the integration of primary care activities with routine dental care; and to assess the needs of hygienists and the office environment around primary care screening using a clinical decision support system (CDSS) at chairside. Methods: In this exploratory study, we utilized maximum variation sampling to recruit 10 hygienists and 6 dentists from 10 urban dental offices with diverse patient mixes and volumes. A faculty dental hygienist conducted semi-structured, in-depth interviews, which were digitally recorded and transcribed verbatim. Data analysis consisted of multilevel coding based on consistent and systematic review, resulting in emergent themes with accompanying categories and identified hierarchy and predominance patterns. Results: The majority of dentists and hygienists interviewed identify screening for hypertension and diabetes and discussing tobacco use and nutrition as relevant to their dental practices, particularly for vulnerable patients. Respondents suggested that such activities are important for many of their colleagues, although further analysis suggests certain challenges, including lack of continuity, accountability, resources, and systems-level support, with opportunities for improvement regarding timeliness, efficiency, and effectiveness. Dental providers’ perspectives of patients’ reactions to discussing the aforementioned health matters underscore salient barriers to care and support increased care integration. Overwhelmingly, hygienists reported using electronic devices at chairside to obtain web-based health information, with variation in terms of accuracy, quality, and reliability. Conclusions: Dental hygienists occupy a unique and vital role in providing trusted patient-centered primary care, and may be well-positioned to help facilitate greater integration of oral and general health care, including screening, monitoring, and care coordination.

C29.

**DOSE REDUCTION USING THE DEXSHIELD RECTANGULAR COLLIMATOR IN DENTAL RADIOGRAPHY**

Iryna Branets, Lawrence T. Dauer, Brian Quinn, B. Holohan, Lyubomyr Branets, Dan C. Colosi, Arthur D. Goren

Background: Rectangular collimation has been recommended by both the ADA and the NCRP to significantly reduce patient exposure to ionizing radiation. Various types of rectangular collimation devices have been devised, but the dose reduction to various organs of the head and neck and overall total dose reduction has not been evaluated.

Objective: To provide dosimetric data on four bitewing X-ray exposures to head and neck organs of a female CIRS anthropomorphic phantom using round and rectangular (DEXshield) collimation for digital imaging.

Methods and Materials: Dose measurements were obtained using Optically Stimulated Luminescent (OSL) dosimeters placed in pre-manufactured slots at the location of 27 head and neck anatomic structures of an anthropomorphic female CIRS phantom. The phantom had removable cutouts for bilateral placement of a digital sensor at the bitewing level. Four bitewing radiographs were acquired using a Gendex 765 X-ray machine (65 kVp, 7 mA) at three settings (0.08, 0.32, and 0.80 seconds) using round and rectangular (DEXshield) collimation. All exposures were repeated 15 times for each of the four bitewing exposures (60 repetitions). The results were divided by 60 to evaluate the average dose. The organ fractions irradiated were determined from ICRP-89 reference phantoms according to age. kVp factors and ICRP-103 tissue weighting factors were also applied.

Results: Overall, an average of between 28-47.5% dose reduction when using the shield. The highest reductions for all exposures were for the eyes, cranium and brain. The 0.8 second exposure yielded the highest dose reduction and the 0.32 second exposure the least reduction.
Conclusion: Our data indicated that the DEXshield significantly reduced unnecessary radiation dose to organs of the head and neck. The OSL’s are highly sensitive to low radiation dose measurements and are easy to use.

Conflict of Interest: This study was supported by a grant from Imaging Sciences International.

C30.

VIOLENCE AGAINST WOMEN IN THREE DISTRICTS OF NEPAL: A QUALITATIVE ASSESSMENT OF SERVICES AND NEEDS

Fabiola Milord, Jooyoung Cha, Isabel Garcia, Renee Johnson, Sunday Smith, Nancy Van Devanter, Vandana Tripathi

In Nepal, violence against women (VAW) is widespread and significantly impacts women’s health and well-being. Objectives: HealthRight International, an organization that prioritizes public health and human rights issues facing women, commissioned New York University’s Capstone team to conduct a multi-level qualitative assessment to: 1) identify existing services and community needs to address VAW; 2) summarize current policies affecting VAW programming and services; and 3) assist in identifying strategic program interventions based on findings.

Methods: Using purposive sampling, 25 semi-structured interviews and 7 focus group discussions were conducted with key stakeholders and community members within three districts in Nepal. Systematic literature reviews were also performed. Using modified grounded theory, the team coded, analyzed and interpreted data, identifying themes using Dedoose software.

Results: Findings emphasized the need to implement current policies, enhance VAW reporting mechanisms, raise awareness, improve VAW-related training, and strengthen coordination between government and NGOs in order to protect women. The need to stress the role of healthcare providers especially dentists who are trained to identify head and neck injuries due to violence is one avenue that should be highlighted as part of their educational process and throughout their careers.

C33.

CARIES PREVALENCE, FOLLOW-UP PREDICTORS TO DENTAL TREATMENT IN FOSTER CHILDREN

Jill Fernandez, Stephanie Serpa, Malay Mathur

Purpose: This study aims to determine the rate of follow up and completion of treatment within a year for foster care children and to evaluate predictors for a successful oral health program for this underserved population. This information will allow us to describe the overall effectiveness of the oral health program conducted through NYU College of Dentistry serving Graham Windham child welfare agency.

Methods: The study was conducted as a retrospective study, using pre-existing charts located at NYU College of Dentistry to collect data that is comprised of 200 foster care patients who were screened and treated at NYU College of Dentistry. Data collected includes: age, sex, ethnicity, Bronx vs Brooklyn foster care site, DMFT or dmft (decayed, missing, filled teeth), mode of transportation to the college, if foster parent is biological family, how many visits to complete treatment, and how many teeth treated in one visit.

Results: Pending data analysis. Conclusions: Pending data analysis.
C37.
RELIABILITY OF DIAGNOSTIC MODALITIES FOR DENTAL CARIES
Bapanaiah Penugonda, Kritika Srinivasan, Benjamin Godder, Joel Silver, Maria Congiusta, Xu Sheng, David Hershkowitz

Objectives: The aim of this study was to compare three clinical diagnostic modalities: 1) visual-tactile, 2) radiographic, and 3) laser fluorescence (DIAGNOdent).

Methods: This in vitro study utilized 30 extracted premolars and molar teeth. The teeth were brushed with water using a tooth brush to remove debris and mounted in wax for evaluation. Nine clinicians examined each tooth, corresponding radiographic and separately utilized a laser fluorescence device to decide if the tooth was carious. Data were analyzed to yield Cohen’s Kappa and intraclass correlations coefficients (ICC).

Results: Across evaluators, 76% of teeth were considered decayed based on visual and tactile examination. For ratings based on such exploration, kappa ranged from .20 to .87 (Med= .49) and the ICC was .54. Amid evaluators, 40.6% of teeth were considered decayed upon examination of corresponding X-ray films. Based on the x-ray data, kappa ranged from 0 to .81 (Median= .24) and the ICC was .24. Finally based on laser fluorescence device readings 91.1% of teeth were considered caried and kappa ranged from .14 to .78 (Median= .52) and the ICC was .49.

Conclusion: The laser fluorescence device detected more carious lesions than the visual and radiographic methods. While clinical and laser fluorescence device assessments yielded moderate ICCs of about .5, the x-ray data were much less reliable. All three modalities of caries detection are not singularly reliable and reproducible by nine examiners.

C38.
A MULTI-CENTERED RETROSPECTIVE EVALUATION OF CLINICAL AND RADIOGRAPHIC OUTCOMES OF REVASCULARIZATION/REVITALIZATION THERAPY IN IMMATURE TEETH: STUDY DESIGN AND RECRUITMENT
Arundhati Misra, Chayne Coston, Eugene Podborits, Jennifer Lynn Gibbs

Based on multiple case reports and a few cohort studies, revascularization/revitalization (REVASC) treatment of immature permanent necrotic teeth has a comparable success rate to apexification treatment and the added potential benefit of intracanal hard tissue deposition. However, root growth and clinical success do not occur in all cases, and it is likely that certain treatment and patient factors are related to such outcomes. Studies with larger subject numbers and longer follow up times are required to identify the factors associated with success. In this study we will perform a comprehensive review of all calcium hydroxide apexification (CaOH2), MTA apexification (MTA), and REVASC cases completed at 3 institutions, extract data related to clinical outcomes and radiographic root growth, and recall subjects for a final clinical/radiographic assessment. We estimated that 200 cases would need to be identified during screening to sufficiently perform analyses. A retrospective chart review was completed on all endodontic cases completed on patients aged 6-16 between January 2006 and January 2013. Quality control review was performed to assure that each case met a minimum standard of clinical proficiency. Cumulatively, 1334 charts have been reviewed (approximately 60%) and 197 eligible cases identified, both with and without a documented recall visit. Of these 39 REVASC, 8 CaOH2, and 31 MTA cases were identified, so 78 fully eligible cases with recall were recruited. The retrospective cohort study design is useful for assessing long term outcomes is a large number of patients.
C39.
EVALUATION OF ROOT CANAL MORPHOLOGY OF HUMAN MAXILLARY AND MANDIBULAR MOLARS USING CONE BEAM COMPUTED TOMOGRAPHY (CBCT)

Katsushi Okazaki, Afshin Badii, Abdulmajeed Alshahrani, Shivani Anand, Eugene Podborits, Matthew Malek, King Chong Chan, Asgeir Sigurdsson

Introduction: In endodontics, knowing the location of the floor rather than the roof of the pulp chamber is more important to avoid furcation perforation. Morphological studies using radiographs describe that the roof of the pulp chamber is “at the level of the cement-enamel junction (CEJ).” The location of the roof of the pulp chamber can be affected by various factors, such as caries, or restoration, due to deposition of reparative dentin by coronal odontoblasts. However, the location of the floor of the pulp chamber usually does not change much except in traumatic injury to the tooth because the odontoblasts lining the floor are well protected. The purpose of this study was to determine the relationship between the location of the pulp chamber floor and the level of CEJ and to identify if any demographic variables (age, sex) or anatomic location of the teeth could affect the relationship using CBCT images. Methods: The pooled data of CBCT images from May 2013 to December 2014 was collected from NYUCD Radiology Department. In our preliminary data collection, 10 maxillary and 10 mandibular molars without caries, restorations, or abnormal anatomy were randomly chosen. The distance from the pulp chamber floor to the level of CEJ was directly measured in millimeter to two decimal places at sagittal view and coronal view in standardized manner. The mean, standard deviation (SD), and coefficient of variation (CV) were calculated for each measurement. T test was used and p<0.05 was considered significant. Results: The pulp chamber floor located within 1 mm apically from the level of CEJ in 60% in maxillary molars and 100% in mandibular molars at the coronal view respectively. Statistically, in both maxillary and mandibular molars, the pulp-chamber floor was closer to the CEJ at coronal view than at the sagittal view regardless of gender and age (P < .001) Conclusion: The location of CEJ on the buccal aspect of molar teeth is a valuable anatomical landmark to estimate the location of pulp chamber floor in endodontics, which is easily visible clinically. More samples are being collected for the study to increase statistic power and significance.

C40.
RETROSPECTIVE ANALYSES OF ENDODONTIC BIOPSY SPECIMENS (2010-2013) AND THE EVALUATION OF THE ACCURACY OF PRE-SURGICAL DIAGNOSES

Lauren Kerpel, Ali Manesh, Kamyar Sadeghein, Paul Rosenberg

Prior studies of endodontic biopsy samples have reported variations in the incidence of cysts, granulomas, and other lesions. For example, Schultz et al (2009) reported the incidence of cysts to be 23% and that of granulomas to be 70%. However, Mass et al (1995) reported 73% cysts and 26% granulomas. Additionally, in some studies, the criteria used to differentiate cysts from granulomas were not stated (Safi et al, 2008). Our goal was to examine distribution of lesions in a well-controlled retrospective study. Additionally, we examined the accuracy of pre-surgical diagnoses. We examined 297 endodontic biopsy specimens over a four-year period (2010-2013). In this retrospective study, four pathologists used a common set of criteria to identify lesions. Specimens were all collected during endodontic apical surgery and stored in 10% formalin solution. The incidence of cysts was 20%, granulomas 78%, and other lesions 2%. The pre-surgical clinical diagnosis was accurate 73% of the time. Despite the lack of pre-surgical standardization, analyses of the pathologists’ reports indicated that their ratio of cyst-to-granuloma were closely related. The findings of this study were subject to a number of variables. Among them was the inability to standardize the pathologists prior to the study due to our retrospective approach. However, our data were consistent with a number of other research findings (Morse et al 1973, Baumann at al 1956, Nobuhara et al 1993).
C42.

THE ASSOCIATION BETWEEN S-ECC AND ADVERSE PRE AND POSTNATAL EVENTS

Yashashwini Bangalore, Yihong Li, Page W. Caufield, Catherine N. Schon

Early childhood caries (S-ECC) is aggressive and massively destructive form of dental caries among pre-school children. The disease development is associated with multifactorial etiology. Evidence has demonstrated that medical, pre- and post-natal insults during tooth developmental period are amongst key factors for damage of the primary teeth named enamel hypoplasia (EHP) which is essential precondition leading to S-ECC. Formerly called “Nursing Bottle” or rampant caries, this pattern-based defect of the primary dentition, most noticeable in the maxillary anterior teeth. These defects collectively termed enamel Hypoplasia (EHP) are the result of perinatal insult(s) that result in the arrest of ameloblasts/odontoblasts responsible for forming the dental matrix for subsequent mineralization. Known contributors linked to EHP include prematurity and low birth weight, malnutrition, maternal and infant illnesses and other metabolic antecedents.

Purpose: The aim of this study was to conduct a retrospective medical chart review of the children with HAS-ECC compared to a matched-controlled, caries-free cohort. The second aim of the study was to evaluate the association between the occurrence of HAS-ECC and post-eruptive caries risk factors using a questionnaire survey and an extensive microbiologic assessment.

C43.

CESSATION STRATEGIES FOR SMOKELESS TOBACCO USE IN THE DENTAL SETTING

George Raymond, William Maloney, Gary Berkowitz

The many deleterious effects of smokeless tobacco have been well documented. Dentists are justly trained and familiar with both the oral and systemic effects of smokeless tobacco use. Dental providers are familiar with the regimen of prescriptions available to them for cigarette replacement but no such policy on smokeless tobacco use is readily available at the college. The substitution of nicotine can be utilized in much of the same way; however, behavioral modifications usually are required. A review of the literature is appraised and strategies including behavior modification are discussed. In addition to pharmaceutical possibilities, consideration of recommending a non-nicotine herbal replacement is presented as a viable option. The opportunity to offer aids to enable interested patients to overcome this habit is an integral part of practicing as an oral health care provider. A summary of oral, systemic, and social effects of smokeless tobacco are discussed. A brief comparison of nicotine lozenge and nicotine gum will be offered. Lastly, considerations and suggestions of management to provide strategies for cessation of smokeless tobacco are presented.
C44.

RECOGNITION AND MANAGEMENT OF DRUG SEEKING BEHAVIOR IN THE DENTAL SETTING

George Raymond, William Maloney, Gary Berkowitz

Drug seeking behavior is a circumstance any dental provider can encounter. It is important to recognize the difference between a legitimate patient and a drug or medication-seeking patient. This is not an easy task since there is a certain degree of objectivity and frequently subjectivity. The provider requires good observation skills and should conduct a thorough interview, physical exam, and finally use sound clinical judgment. A literature review documenting various suspected behaviors and coping strategies are explored. A series of behaviors that could be warning signs of drug seeking behavior will be reviewed. Various techniques such as the opioid risk tool, screening questionnaires, a visual analog pain scale and prescription drug monitoring program databases will be discussed. In conclusion, strategies for recognizing and managing this population of patients are suggested.

C45.

THREE-DIMENSIONAL PRINTING OF ONLAY GRAFTS FOR BONE TISSUE ENGINEERING

Seyedamir Danesh-sani, Edgard S. Elchaar

Introduction: Rapid prototyping (RP) is a class of technologies that can construct physical models from computer-aided design via 3D printers. Although there are numerous RP technologies, those most commonly used for medical applications are stereolithography and 3D printing (3DP).

The 3DP models, are more quickly and easily produced and the cost is approximately one-third that of stereolithography models. Furthermore, 3DP is superior in printing smaller and more complex structures compared with stereolithography.

3D-printed onlay grafts could be suitable for bone augmentation and can be produced in customized designs using 3D-printing that provide clinicians with an adequate amount of bone for accurate placement of implants three-dimensionally in the prosthodontically correct position. PubMed, EMBASE, Cinhal and Cochrane databases were searched up to February 2015 to select relevant studies that address the different objectives of this review, including design process and synthesis of 3D-Monetite bone block.

Design process: The CT imaging performs on a 64-slice multidetector CT scanner and volumetric data acquires and undergoes post-processing to isolate the reconstruction area. The DICOM-format data is converted to STL file which is a format suitable for RP printing. The 3DP technology works by jetting photopolymer materials in ultrathin layers onto a build tray, layer by layer. Each layer is cured by UV light immediately after it is jetted, producing fully cured models that can be handled and used immediately, without postcuring. The gel-like support material, which is specially designed to support complicated geometries, is easily removed by hand and water jetting. The 3DP models are accurate to 0.016 mm, and the build time is 1 cm in height per hour.

3D-Monetite bone block synthesis: Dicalcium phosphate dihydrate onlays have been used for making onlay grafts by 3D printing technology. Mixture of dicalcium phosphate anhydrous, monetite, and calcium carbonate is heated at 1400 °c for 7 h to synthesize α/β-tricalcium phosphate (α/β -TCP). After quenching to room temperature, the sintered mixture is crushed using a pestle and mortar, and then passes through a 160μm sieve. Finally, a planetary ball mill is used for milling β -TCP for 10 min. Brushite onlays are printed with a 3D-powder printing system using 20% of diluted phosphoric acid and β -TCP powder. After being printed, the samples are retrieved from the powder bed and sterilized. The final onlays are composed of 63% monetite and 37% unreacted β -TCP with a total porosity of 44%. A central hole is created in the block for fixation with osteosynthesis screw which also avoids further breakage of the block during placement.

Conclusion: Future use of the 3DP is recommended as a new technology and provides a precise, fast, and cheap technique for alveolar ridge reconstruction which leads to shorter surgical time and precise planning of the shape and size of the graft in addition to exact placement of the graft in an acceptable prosthodontically position for future dental implant rehabilitation.
C47.

IMPLANT PLACEMENT EXCLUSIVELY WITH LASER

Mary Morcos, Marci Levine

Research Question: Is the success of implants placed exclusively with laser comparable to the success of those placed using conventional drilling techniques?

Method: An electronic search was done in PubMed to review the relevant literature, using the keywords Er:YAG laser or Er,Cr:YSGG laser and dental implant. From the eleven studies chosen, seven were animal studies and the remainder case reports on human subjects of implant bed preparation using laser. The in vivo studies were done on a variety of animals that were then sacrificed after surgery to compare the osseointegration of the two groups at different healing times. A histologic analysis of the bone surrounding the implant was done, including bone-to-implant contact (BIC) and peri-implant gap width. The in vitro studies were done on pig ribs to compare implant stability quotient (ISQ), maximum insertion torque, angular momentum, and insertion torque energy between the two groups, and on sheep mandibles to measure the deviation of the implants from their planned positions. Case reports on human subjects comprised of the placement of implants in various areas of the oral cavity to assess BIC and success of osseointegration.

Results: At the most apical part, there were wider gaps between the implant and the bone in the implant sites prepared by laser, and they had significantly higher deviation from their planned positions. However, the BIC for the laser group was higher than for the drill group. Implants prepared by laser had removal torque values that were significantly superior to those of the drill group, and the maximum insertion torque, total energy, and total angular momentum were similar in both groups. Also, laser implants had maximum primary stability upon placement.

Conclusion: Using laser exclusively to place implants seems to be promising, with osseointegration comparable to and BIC significantly better than the conventional drilling techniques.
PREDICTABLE IMPLANT PLACEMENT IN MODERATE ATROPHIC POSTERIOR MAXILLA WITHOUT GRAFTING MATERIAL

Ismael Khouly, Julien Mourlaas, Alex Dagba, Pablo Garcia, Sang-Choon Cho

Alveolar bone loss in the posterior maxilla due to the loss of teeth, advanced periodontal disease and sinus pneumatization may have a significant effect on the posterior alveolar ridge, oftentimes leaving inadequate bone volume for implant placement. Nevertheless, to overcome this problem in the posterior maxilla, sinus floor elevation (SFE) procedure has been used to enhance bone volume in the maxillary sinus and thus enabling placement of dental implants. Various techniques have been described by creating a surgical access to the sinus through either the lateral wall or the alveolar crest of the edentulous site. Compared with the lateral window technique, the transcrestal procedure is considered to be less invasive and can reduce patient morbidity, treatment time and cost. Despite the different approaches, the space created by elevating the sinus membrane is often filled with graft material.

Over the last decade, the trancrestal procedure has been performed without the use of bone graft, where the space left beneath the sinus membrane is filled with blood clot in order to produce bone formation. The potential of this procedure without bone graft was described in several studies with radiological and histological evidence, showing high success rates of such method. However, it is still necessary to define case selection criteria based on the remaining crestal bone, the sinus anatomy, the quality of the sinus membrane and bone for a successful procedure when graft material is not used.

The purpose of this review is to discuss the indications, contraindications, limitations and case selection criteria used to determine the crestal approach without the use of grafting material as a predictable treatment option.

CARIES RISK ASSESSMENT IN FIXED PROSTHODONTIC TREATMENT

Kale McMillan, Marjan Moghadam

Caries has been reported as the most common complication in multiple unit fixed restorations. Patients seeking prosthodontic treatment are often at much higher risk of caries due to the nature of their dental and medical conditions. Prosthodontic treatment typically involves elimination and restoration of the damaging effects of caries. The development of caries management by risk assessment (CAMBRA) allows the prosthodontist to incorporate preventive measures into their patient’s treatment plan to aid in elimination of caries progression. This poster presents the CAMBRA model and suggests management strategies to help support the health of the remaining natural dentition as well as longevity of prostheses. A retrospective study found tooth-supported fixed partial dentures (FPD) had a 5-year and 10-year survival rate of 93.8% and 89.2%, respectively. Of those failures, the largest portion of complications were from biological causes, such as loss of pulp vitality and caries. The use of CAMBRA protocols tailored to the prosthodontists’ practice may help reduce the incidence of caries.

Conclusion: The CEREC ® system has allowed the operator to create ceramic crowns, inlays and onlays in a single visit. It is no longer necessary to go back to the patient for additional scans or impressions. In addition, the clinician can virtually see the preparation and its parameters before final fabrication. This allows any discrepancies to be corrected prior to fabrication. It is a great learning tool and an extremely accurate method of fabricating restorations.
C70.

PREDICTABLE SEQUENCE OF TREATMENT FOR SEVERELY ATROPHIC MAXILLA IN THE ANTERIOR REGION

Siyan Lin, Salvatore Florio, Wendy Chia Wei Wang

Placing implants in a prosthetically ideal position in the atrophic maxilla is challenging. It often requires soft and hard tissue augmentation procedure prior to, or simultaneously to, the implant placement. Considering the complexity and the long duration of the treatment, planning precisely its phases is crucial to satisfy patient’s expectation and to achieve a predictable long-term result. When the teeth loss is due to a trauma, the patient has to deal with a sudden lack of the esthetic and the function that is difficult to accept. In these cases a removable provisional does not represent an ideal solution, it causes discomfort to the patient and is unable to restore completely the function. A fixed interim restoration is, then, more appropriate. Furthermore, when regenerative procedures are necessary, a fixed provisional allows protecting the augmented site increasing the stability of the graft and the chances of success. The purpose of this case report is to present a 10-year follow-up to a 6-unit restoration on implants after bone regeneration in the aesthetic area. This report will discuss on the utilization of transitional implants as a solution to support a fixed interim restoration and the definitive prostheses.

C71.

RESTORATION OF THE COMPROMISED OCCLUSION: CASE REPORTS USING A TWO PHASED APPROACH

Kimberly J. MacGregor, Piriya Boonsiriphant, Ana S. Lopes, Joel A. Hirsch, Mijin Choi

Patients requiring a complex restorative treatment often exhibit clinical evidence of severe tooth wear. This can occur due to mechanical causes, chemical factors, or a combination of both. The oral rehabilitation of elderly patients presenting with a parafunctional habit in association with excessive tooth wear has been a great challenge for prosthodontists. The loss of ideal remaining coronal tooth structure as well as missing teeth leads to a collapsed occlusal vertical dimension (ovd) and disoriented occlusion.

This clinical report describes two reversible and non-invasive diagnostic approaches: a diagnostic splint and a transitional overlay removable partial denture (orpd), for the restoration of the compromised occlusion in two male patients with a skeletal class iii malocclusion and loss of ovd.

In the initial phases, both the splint and orpd were used to determine ovd. The validated ovd and functional occlusion was then transferred to the final prostheses. The final restorations varied due to financial divergences. For both, it was still decided the use of indirect composite restorations for the anterior worn teeth.

Both techniques provide a noninvasive and reversible approach, and are relatively inexpensive. It can be used as an alternative transitional treatment to provide esthetics, function and stable occlusion in patients with worn dentition.
E1.

ROAD TRIP: IGNITING MINDS BY UNLOCKING THE DOORS TO INDUSTRY

Steven Resnick, Maryz Estedrak, Virginie Illouz, Yohayra Chardon, Zahraa Alsalihi

Purpose: To inform the NYU dental educational community about the impact on dental students’ knowledge and abilities in the fields of dental materials, dental equipment, and dental therapeutic options following a visit to a large international dental meeting in New York City. To illustrate to fellow educators how using long standing, well developed faculty contacts outside the university setting can be successful in a professional inter disciplinary manner.

Despite marketing claims and invitations, dental students are finding that they are increasingly unwanted and dismissed by exhibitors at large national and international dental meetings. While a good deal of focus at these meetings focus on post doctoral education, representatives of varying branches of dental industry and product manufacturing invest significant amounts of money to showcase their “wares” to this captive audience of dental professionals seeking education. Because dental students lack the purpose and capacity to spend money at these meetings, exhibitors often politely dismiss them as non profitable, thereby denying students access to exciting information regarding both traditional and contemporary dentistry. For both educational and economic reasons,
today’s dental school clinical protocols limit the equipment and material variance exposed to students.

In an attempt to improve our student’s knowledge of materials, equipment, and techniques, a road trip was arranged to the Greater New York Dental Meeting. Because specific NYU faculty members had long standing relationships with exhibitors in multiple disciplines, arrangements were made to bring a group of students to specific exhibits for educational experiences. Students were engaged in discussions and received hands on experience with varying materials and equipment.

In order to assess whether this trip outside the confines of our college was beneficial, a group of students were surveyed following the experience. The experiences of our visit and the results of our survey will be presented.

Conclusion: A meaningful increase in knowledge and skills and can be demonstrated in a group of dental students following a visit to the Greater New York Dental Meeting. This educational gift to the future members of our profession is a creative and enjoyable methodology in the enhancement of knowledge and skills.

E2.

ENHANCED LEARNING DURING THE DENTAL HYGIENE PROCESS OF CARE

Shirley Birenz, Cynthia Howard, Andrea Beal, Robert Davidson, Cheryl Westphal Theile

Purpose/Goals: To revise a dental hygiene care plan form for dental hygiene students whose clinical program is integrated into the curriculum of a large dental school. In this setting, a comprehensive clinical examination is completed by a dental student prior to the first dental hygiene appointment. Significance: The new form includes both a template and a “guidebook” that: 1) Orients the dental hygiene student through the sequence of dental hygiene care, and 2) Fosters competency in clinical assessment without making the clinical encounter a passive and repetitive exercise for the patient.

Approach/Key Features: The revised form was fully implemented in 2013. Multiple evidence-based thinking skills are fostered by its design. Knowledge schema organization and slot features organize the process of care, coupled with watermarked cues that refer directly to evidence-based resources.

Evaluation: We compared the new form to that used in academic year 2011-2012. The most significant finding was its effect on students’ analytical, i.e., predictive, skills regarding patient care. Using the new form, the median number of "Expected [Clinical] Outcomes", increased from a single outcome to three expected results of therapy (Mann-Whitney U Test; N=50; W=1599; p < 0.001). Our results show that the revised dental hygiene care plan form represents an improved instrument for dental hygiene students to gain competency in clinical assessment. Dental hygiene students were able to incorporate the completed dental student’s treatment plan into one from a dental hygiene perspective, and identify an increased number of meaningful clinical outcomes.

E3.

REINVIGORATING NYUCD’S SMOKING CESSATION PROGRAM AND UNLOCKING ITS FULL POTENTIAL

Morey J. Gendler, Scott W. Podell, Donna Shelley, Mark S. Wolff

Dental students at New York University College of Dentistry (NYUCD) are trained to take a leadership role in community health initiatives and public health issues including smoking cessation. NYUCD has an active Smoking Cessation Program which is incorporated as part of our dental student’s undergraduate didactic and clinical education/patient care program. NYUCD has adopted an inter-professional approach to providing care by collaborating with the Manhattan Tobacco Cessation Program (MTCP), a New York State-funded cessation center. Our didactic and clinical systems approach insures that students develop the skills needed to treat nicotine addiction and that all patients at NYUCD are screened for tobacco use and offered evidence-based treatment.

NYUCD’s smoking Cessation Program has been extremely successful, providing approximately 50 NRT regimens each month (the College enrolls approximately 650 new patients/month) but our recent findings have shown a decrease in the amount of NRT dispensed (35 NRT regimens/month). Interpretation of the data suggests that two changes have occurred which were contributing factors to this decrease: recent curriculum modifications have resulted in a reduction in the amount of booster training that our third year students received, and the NRT champions, the MTCP, has relocated off site.
We will describe the strategy we have implemented to reinvigorate our program in an effort to reach our prior levels of success. This plan capitalizes on our previous positive achievements and is working to re-energize those areas where we may have lost momentum. A faculty member was designated as our new college wide advocate to lead our efforts and is supported by our Group Practice Directors in implementing this plan. Since previous results found that the peaks of NRT dispensing coincided with follow-up tobacco cessation training (i.e. booster training) for both students and group practice directors, these additional training sessions will be reintroduced and conducted at each individual monthly Group Practice Meeting. Also, monthly performance feedback reports will be sent to the Group Practice Directors allowing them to closely monitor their group’s results and trends. Future enhancements to our program will include utilizing an Electronic Health Record (EHR) in our undergraduate clinics beginning in January 2015. Our EHR has engineered enhancements that will foster and guide our students toward better outcomes by utilizing a built in series of enhanced intelligence decision support.

**E4.**

**THE BENEFIT OF MERGING SMALL GROUP PARTICIPATION WITH SMARTPHONE, AND TABLET USE FOR INCREASED SUCCESS IN TEACHING DENTAL SPANISH**

Maria P. Rodriguez Cardenas, Mark Wolff, David Hershkowitz, Ken Allen

Purpose: The purpose of this poster is to explore the pros and cons of using technology and/ or small group class-rooms to teach and learn dental Spanish for use in a clinical setting. In addition we will present the literature relating to patient communications and describe the facilitation of treatment after removal of a language barrier. We will do this as we compare two language programs initiated at NYUCD.

Language barriers in health care can be partly accountable for health disparities. Patients are hesitant to visit medical/dental professionals and use the available services to improve their health. Depending upon their English language comprehension some patients are not able to adequately understand and monitor prevention and maintenance of health. Non English speaking patients may resort to visiting a medical professional only when an emergency arises. And even then when they are discharged, there is often uncertainty about the diagnosis, home care instructions, and post treatment/discharge instructions, all critical for the patient to get well.

Teaching the faculty and students to communicate with our Spanish speaking patients which will make the patients feel more comfortable, will serve to minimize language barriers, thereby improving dental literacy and acceptance of treatment.

Methods: The method used is primarily small group participation. The HSDA of NYUCD developed the booklet used as a teaching/learning aid. This Spanish course is taught in six sessions . The topics covered are: introducing yourself, medical history, dental history, radiology, treatment planning the dental exam, endodontics, complete/partial denture treatment, and pediatrics.

During class we use simulated clinical scenarios as a learning tool. The Spanish speaking faculty act as the patient as the learners go through the booklet topics. The students were encouraged to reply and ask questions, as if they were treating the patient during
clinical care. To facilitate participation, we subdivided into groups of six to ten students per session.

Another feature, the telephone application, is used in direct patient care. It is available on iOS and Android devices as a download to your smartphone or tablet. With the patient in the dental chair the user identifies the medical/dental area of treatment, clicks on the phrase they want to translate and the application provides both written and audible version.

Phrases were developed and organized to enhance patient care. This was done by subdividing everything into three stages: pre procedure, during procedure and post procedure. The application continues to get better and grow daily. This occurs when users submit suggestions, improvements, and additional phrases for translation. All encouraged in the software. There is also a patient response system for additional input. A global social media network is readily available to interact with users and provide suggestions. By repetition and continuous use of the application students will enhance their language skills.

Conclusions/Discussions: Smartphones, tablets, and laptops are the modalities for the transfer of information in clinical treatment and education. Data, web sites, and global usage of digital media grows daily. Wikipedia defines the millennial student as one born between the early 1980’s and early 2000, a group clearly represented by our average dental student. They have grown up with computers readily accessible in both their home and in the classroom. In addition social media access is a part of daily occurrence. Smartphones, tablets and lap-tops are social media tools. This major shift in our students is the catalytic effect of technologies use in education and in the practice of our profession.

If we want to be efficient educators we embrace this generation, and future generations, as they continuously adapt. We have taught dental Spanish at NYUCD with a hard copy, notebook in hand and a small group our faculty, and students in the classroom. We need to learn, memorize, repeat and think when to use certain phrases. Social small peer group interaction is very important and makes this easier.

Smartphones, tablets, data, websites and global usage of digital media grows daily, as does the language application used in direct patient care. It does some of the thinking and serves as our intermediary for social inter-action between doctor and patient. When the application is accessed on a phone, you delineate the specialty, the language needed, and the stage of treatment needed. You click on a phrase and the application translates it with a written and an audible translation. Phrases are written to enhance patient care by subdividing treatment as pre procedure, during procedure, and post procedure. The application continues to grow daily because all those using it are encouraged to submit their suggestions, improvements, and their own phrases. A global social media net-work is readily available to interact with us and provide suggestions. Over time students will also learn the lan-guage by continuous use and repetition.

ASSESSING PRESCRIPTION WRITING SKILLS: HAVE WE LIT THE FIRE?

Debra Ferraiolo, Marc Henschel, Silvia Spivakovskv, Analia Veitz Keenan

Prior to 2012, it was difficult to assess the level of students’ learning and understanding of Rx writing at NYUCD. The Department of Oral Pathology, Radiology and Medicine developed a computerized Student-Patient Interactive Assessment program, (SPIA), for the Admissions Clinic. This allowed for every student-patient experience to be assessed and recorded. SPIA has multiple arms that include evaluating students’ ability to write an accurate prescription for common medications used in dentistry. In the clinic, faculty use problem-based scenarios to assess students’ ability in prescription writing. Multiple goals guided us in developing our prescription-writing competency. First, we wanted to
E6.

A MULTIDISCIPLINARY CLINICAL EDUCATIONAL PROGRAM FOR FIRST YEAR DENTAL STUDENTS

Marie A. Congiusta, Gene Sherwin, Harry Meeker, David Hershkowitz, Mark S. Wolff

“Multidisciplinary Experiences” is a new and innovative course being taught at New York University College of Dentistry. Consisting of both lecture and clinical components it is meant to offer first year dental students experiential learning as they translate information derived from lecture into clinical practice. Students pre-view video demonstrations in interactive modules covering infection control protocol, oral hygiene, dietary and nutritional analysis, topical fluoride varnish application, how to perform head and neck and oral exams including the identification of caries radiographically and clinically. The taking of vital signs and the administration of local anesthesia is also demonstrated. There are opportunities throughout the video for students to test their knowledge via quiz questions. This pre-preparation helps to optimize the actual clinical experience.

E7.

SUSTAINING EVIDENCE-BASED KNOWLEDGE IN TEACHING

Analia Veitz-Keenan, Debra Ferraiolo, Silvia Spivakovksy, Joan Phelan

Time is spent educating students with the best knowledge and skills possible before graduation and to provide them with the latest information to promote optimal care to their patients. Evidence-based decision-making is a topic incorporated in dental education at multiple levels in the curriculum as well as to differing degrees of complexity with the ultimate goal being the erudition of life-long skills.

The management of patients requiring antibiotic prophylaxis is a subject that usually generates discussion. In the United States, dentists follow the Evidence-based Guidelines of the American Heart Association, which is supported by the American Dental Association (2007). Based on this publication, there are a select few medical conditions where antibiotic prophylaxis is still required before invasive dental treatment. This current information is provided to the students in several didactic courses. It seems that students’ knowledge needs to be reinforced in clinic sessions and faculty needs to be up to date on the same topics.

A series of anonymous questionnaires using treatment scenarios were sent to our students at NYUCD and responses were collated for this study. The goal was to assess the students’ knowledge retention and capability to make evidence-based decisions related to patient care. The questions related to patients with cardiac problems and whether there was a need for antibiotic prophylaxis. The IRB-approved survey was sent to new D4 students in the Admissions Clinic (350 students). Ninety percent of the students responded correctly as to what cardiac issues warranted antibiotic prophylaxis. However, it still seems that 10% of the students are still uncertain. In addition, students are still pre-medicating medical conditions no longer/never recommended by AHA.

As we had hoped, the study assessed students’ knowledge retention. Our study suggests we need to work with both faculty and students in their knowledge of antibiotic prophylaxis and cardiac issues.

E8.

POSTER TITLE: DIGITAL TECHNOLOGY CURRICULUM NEEDS ASSESSMENT: D3 AND D4 STUDENT PERSPECTIVES

Maryam Waheed, Leila Jahangiri

In the last decade, there have been significant advances in digitally fabricated restorative procedures. In an effort to enhance the dental education and curriculum at NYU College of Dentistry, third-year (D3) and fourth-year (D4) students were surveyed to determine the level of understanding of digitally-fabricated restorations and the students’ interest in including these restorations within the curriculum.

Methods: A two-minute survey was created and disseminated through SurveyMonkey to all D3 and D4 students. Participation in the survey was voluntary, and individual student characteristics and/or responses were not identifiable. An NYU-IRB exampnt status was obtained for this protocol. The survey focused on the following procedures 1) Digital impressions, 2) Digital fabrication of implant abutments and crowns, 3) Zirconia CAD/CAM restorations, and 4) Digital dentures.

Results: 75 (22%) third-year students and 66 (19%)
fourth-year students responded between the period of October, 2014 and November, 2014. The study found that there was no significant difference between the level of understanding and skills among third- and fourth-year students at NYU College of Dentistry.

restorative procedures; and, both groups expressed a significant desire to include these restorative procedures within the curriculum.

E9.

DENTAL HYGIENE FAST TRACK OPTION: MODEL FOR RECRUITMENT AND RETENTION

Lisa Stefanou, Dianne Sefo, Eva M. Lupovici

An innovative Fast Track curriculum option was implemented within a traditional curriculum of an Associate in Applied Science (AAS) Degree in a Dental Hygiene (DH) Program that enables students to earn the same AAS Degree in an accelerated, continuous 17-month period. The Fast Track option is a model for recruitment of traditional and non-traditional students who are highly motivated to enter the DH profession. This new Track also facilitates the retention of students already enrolled in the traditional DH program. The four-semester day curriculum of the Fast Track program starts in January, and is in session continuously including a mandatory summer semester to the following May. The third and fourth semesters of the Fast Track overlaps with the full-time day curriculum and all the students are integrated in the AAS degree course curriculum. Both groups earn the AAS degree in May. The Fast Track option is the first program of its kinds in New York State. It is designed specifically to recruit highly motivated students to gain access to the traditional two-year DH full-time curriculum, but in a more concentrated period of time. It meets the educational need of individuals seeking a career change, and /or eager to enter the job market sooner. The DH program is part of a college of dentistry offering the traditional day and evening, two or three year degree programs, as well as a Baccalaureate Degree. The affiliation enables students enrolled in the Fast Track curriculum the opportunity to obtain the same didactic and clinical education as those students enrolled in the traditional curriculum, in which students are integrated in clinical setting alongside dental students. This Fast Track model for recruitment and retention in a DH program was initiated through the cooperation of the DH faculty and the administration of the college of dentistry.

E10.

TEN YEAR CHANGES IN ADA SURVEY OF DENTAL HYGIENE PROGRAMS

Judy Kreismann, Eva M. Lupovici, Rosemary Hays, Lisa Stefanou, Dianne Sefo

To compare results of the dental hygiene ADA Survey of Allied Dental Education from 2002-03 (02-03) to the last released report of 2012-13 (12-13) as to the number of dental hygiene programs, educational setting, Students’ Age, Gender, Citizenship, Race/Ethnicity, Admission Process, and Minimum Education Requirements to Enroll. The results of the survey may be used by individual dental hygiene programs to assess their status as compared to national reported data.

In 12-13 survey data there were 335 accredited dental hygiene programs, a 26% increase since 02-03. The First-Year-Capacity for student admission increased by 32% to 9,613, and First-Year-Student Enrollment increased by 22% to 8,258 students. The greatest percent increase of enrollment from the previous year occurred in 2002-03 at 5.6% while the lowest in 2005-06 at 0.8%. There were 7,097 graduates in 12-13, a 24% increase from 02-03. Of all programs, 84% awarded an Associate in Science Degree. There was a decline from 91.6% to 83% in the number of Institutions classified as Public Institutions. The minimum educational requirement needed to enroll, varied by program. In 12-13, 74.6% of programs required prerequisite college courses. In 02-03, 38.1% required a minimum of high school diploma or GED, while in 12-13 it was 32.2%. In the last decade the average cost for tuition increased by 120%, with the greatest increase for students In District. The Total. There were also changes in the Enrollment by Age, Ethnicity /Race and Gender.

Conclusion: The comparison of the two surveys indicate a growth in the number of accredited dental hygiene programs, changes student’s demographics, and enrollment requirements. Individual dental hygiene programs to assess their individual status as compared to the national reported data may use the results. The data may also be used for potential development of recruitment strategies and student advisement.

In each question category (digital impressions, digitally-fabricated restorations, CAD CAM Zirconia restorations, and digital dentures) the students reported being unfamiliar with these procedures (never heard of the procedure or heard of it but are not familiar with it)
in the following order: Digital dentures (88%) ; Digital restorations (67%) ; Digital impressions (55%); and, CAD CAM Zirconia (26%). The students’ interest in curriculum was as follows: CAD CAM Zirconia (95%) ; Digital Impressions (94%) ; Digital restorations (91%) ; and, Digital Dentures (80%). CONCLUSION: The study found that there was no significant difference between the level of understanding and skills among third- and fourth-year students at NYU College of Dentistry, as both groups reported unfamiliarity with digitally-fabricated

E11.

VARYING FEEDBACK AND STUDENT ATTITUDES IN TEST-ENHANCED INSTRUCTION

Mitchell J. Lipp, Han Suk Kim, Jai Ik Kim, Nicolas M. Freda

Purpose: Although test-enhanced (TE) learning has been recognized for improving retention, it may deflate student confidence compared to traditional studying (Roediger, 2006; Karpicke, 2012). As student confidence is related to success and satisfaction (Curran, 2006), current TE methods need to address this issue. Feedback bridges gaps between instructors and students (Hattie, 2007) and may enhance confidence. The purpose of this study is to investigate if different types of feedback affect students’ attitudes and self-confidence.

Methods: Three groups of D3 students were enrolled in six two-hour orthodontics seminars and received the TE instructional method, taking a series of formative assessments (FA) based on clinical simulation cases. Students constructed problem list, treatment objectives, and treatment plan for each assessment. Assessments were graded relative to the same evaluative criteria. After 1 week, students received written and dialogic feedbacks. Group 1 (N=77) received written feedback on FA with grades “P” or “F”. Group 2 (N=90) received emoticons, e.g. smiling, straight, or frowning faces, and Group 3 (N=86) received written comments. In the last session, students completed course evaluations including the following items/response options: 1) “I would grade this course!”/ A, B, C, D, F; 2) “This course was…”/ Awful, Below Average, Average, Very good, or Outstanding; 3) “I can construct problem list, treatment objectives, and management plan”; and 4) “I can diagnose and manage patients who may benefit from comprehensive orthodontic treatment and/or skeletal correction”. Items 3 and 4 were rated on a Likert five point agreement scale.

Results: Students reacted favorably to feedback with written comments. 92.53% Group 3 (feedback with written comments) graded the course above “C” compared to 51.72% Group 1 (P/F) and 74.99% Group 2 (emoticons). 67.07% Group 3 rated the course very good or outstanding, compared to 30% Group 1 and 32.93% Group 2. 88.37% Group 3 were confident in their treatment plan abilities compared to 62.67% Group 1 and 51.67% Group 2. 90.70% Group 3 agreed that they can make orthodontic diagnoses compared to 45.95% Group 1 and 57.30% Group 2.

Conclusion: Results from the study demonstrate that delayed feedback with written comments benefits students’ attitudes toward the course and confidence in diagnosis and treatment planning. Attention to the type of feedback may mitigate some of the reported detrimental effects on student confidence in TE instruction.

E12.

DENTAL AVATARS: THE KEY TO THE FUTURE OF DENTAL EDUCATION?

Manju G. Gerber, Silvia Spivakovsky, Kenneth Allen, Arlene Curry, Mark Wolff

For enhancing patient safety and quality patient care, using virtual patient simulation involving InterProfessional and interdisciplinary collaboration could be beneficial for the pre-doctoral students. The focus of this creative educational pilot project is to guide and assess effective learning tools using simulation using a platform students feel comfortable with. Through using an interactive virtual patient/avatar, the case scenarios are designed to motivate student centered self-directed learning supplemental to the conventional teacher/didactic centered based method. The objectives are first, the project would develop active learning skills for clinical decision making. Second, support the needs of the students identified as being academically weak in certain areas by identifying learning gaps. Third, present modules to assess the performance of the students through formative and summative assessments. For any simulation program to be beneficial and worthwhile for the students is to design and develop a program whereby the students retained and used the knowledge gained from their previous learning experiences. This led to the idea of developing a computer assisted learning program using a web based interactive virtual patient or avatar with medical and dental issues that the pre-doctoral student has to diagnose, manage and treat, supplemental to the traditional mode of learning.
TEACHING STUDENTS TO FABRICATE MULTIPLE ADJACENT CERAMIC RESTORATIONS UTILIZING VIRTUAL RESTORATIONS IN ONE SITTING USING CADCAM SOFTWARE

Anthony D. Congiusta, Gary S. Berkowitz, William W. Bongiorno, Mark S. Wolff, Ralph Cunningham, Denise Estafan

Objective: The use of digital technology poses challenges in today’s educational curriculum but is welcomed with passion by new practitioners and students. At NYU College of Dentistry, the students are expected to achieve excellence in their practice and knowledge of dentistry. Having the student appreciate the significance of doing a multi-step procedure in one visit achieves this goal. The student must be able to diagnostically assess the criteria for fabrication of CAD/CAM restorations and then use the technology to fabricate a final restoration. At NYUCD, the CEREC system of digital technology is being used in the clinics and is taught as part of the D2 curriculum.

Method: Once the treatment plan is approved for the fabrication of the CAD/CAM restoration, the acquisition unit is brought to the clinician’s operatory.

The tooth is prepared and a digital impression is taken by scanning the prepared tooth or teeth with the camera on the acquisition unit.

A virtual model is then obtained and through a series of steps where, occlusion, contact, shape and size of the restoration is determined, the restoration is virtually fabricated. Once all parameters are determined to the clinician’s satisfaction, the command is sent to the milling chamber where the restoration is actually made. The restoration is tried in the mouth and then cemented in.

A virtual biogeneric restoration is produced by the CEREC® software.

DIVERSITY OF PROFESSIONAL SCHOOL APPLICANTS OVER A TEN YEAR PERIOD (2003-2013)

Ellen Lee, Brian Chin, Kevin Lin, Arthur D. Goren, Katie Yang Xia

Objective: To assess the changes in the diversity of professional school applicants over a ten year period using gender and race/ethnicity data.

Methods: Publicly available data from 2003-2013 was collected for professional school applicants in dental, medical, law and osteopathic schools. The percentages of applicants by gender, race/ethnicity was calculated for each of the ten years and the compound annual growth rates were calculated for each profession over the ten year period. The races/ethnicities of the applicants include American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino and White.

Results: Overall, in the period which was considered, there has been an improvement in the diversity of Hispanic representation in dental, osteopathic, law and medical school applicants. The compound annual growth rates showed that the highest percent change in dental, osteopath, and medical applicants were in the Hispanic or Latino race. In law, the highest percent change for applicants was in the American Indian or Alaska Native race. The lowest percent change in dental, osteopath and medical applicants were in the American Indian or Alaska Native race. In law, the lowest percent change for applicants was in the white race. In gender, the compound annual growth rate of male and female applicants was highest in osteopath applicants.

Conclusion: There has been an increase in Hispanic or Latino applicants applying to dental and osteopathic schools, and a decrease of Hispanic or Latino applicants applying to law schools. The largest decrease in applicants for dental, osteopath and medical school was in American Indian or Alaska Native. The greatest increase among American Indian or Alaska Native applicants was law school. Fewer white students were applying to law school. Over the past 10 years, changes in diversity have been observed in the applicant pool to all professional schools.
E15.

TWO DIFFERENT INNOVATIVE MODES TO FABRICATE TOOTH COLORED RESTORATIONS USING CAD/CAM TECHNOLOGY

Navkaran Singh Bakshi, Maria P. Rodriguez Cardenas, David Hershkowitz, Tim Culotta, Glenn K. Rochlen

Objective: Teaching the students the use of CEREC BLUE LIGHT LED technology, to fabricate chair side tooth colored restorations using two specific modes - Biogeneric Individual and Biogeneric Copy mode. Certain clinical situations may warrant an exact copy of the tooth like when we are fabricating an indirect tooth colored restoration or a ceramic crown or where you want to duplicate adjacent teeth in the esthetic zone. In Biogeneric Copy mode, we obtain an optical impression of the unprepared tooth and another optical impression of the prepared tooth. The software transfers the occlusal parts of the tooth in preoperative condition and enhances the rest of the restoration. The final design of the restoration is very similar to the tooth prior to it being prepared and in most cases occlusal surface does not need to be adjusted. In Biogeneric Individual mode an optical impression of the upper and lower quadrants is required as well as the buccal surfaces in the maximum intercuspation. The neighbouring teeth are analyzed and software creates a restoration proposal from the virtual model. The operator is able to modify the contact points and contours of the virtual restoration along with the embrasure spaces, if necessary before the milling process.

Conclusion: With CEREC BLUE LIGHT LED technology, the dental students are able to fabricate accurate chair side tooth colored restorations.

E17.

TEST-ENHANCED LEARNING IN A COMPETENCE-BASED COURSE: A FOUR YEAR STUDY

Nicolas M. Freda, Jai Ik Kim Jae, Quan Nhung, Mitchell J. Lipp

Purpose: Dental educators are searching for efficient ways to promote learning and retention. The goal is to bridge the gap from classroom knowledge to clinical application. The purpose of this study is to evaluate the impact of test-enhanced learning experiences, entailing higher order functions and complex behaviors, in demonstrating competence in diagnosis and management of malocclusions and associated skeletal problems. Study was deemed IRB exempt by NYU Review Board.

Methods: Subjects Four groups of third year (D3) dental students participated in the study as part of their Orthodontics Seminar Course at New York University College of Dentistry (2011 N=88, 2012 N=74, 2013 N=91, 2014N =85). The 2013 and 2014 groups received the test-enhanced method, while the 2011 and 2012 groups received the traditional approach.

Materials and Methods: All students were enrolled in six two-hour sessions, spaced one week apart. The traditional approach (2011, 2012) emphasized lecture presentations and classroom exercises while the test-enhanced (TE) approach (2013, 2014) emphasized formative assessments with written and discussion based feedback. At the final session, a summative assessment was given based on the same four clinical simulation cases (CSC’s). Summative assessment grades were based on CSCs without critical errors. Data for traditional and TE groups were collapsed and compared including: / 1) Performance rates on each CSC / 2) Distribution of grades for each group, / 3) Pass rates / 4) Comparison of low quality (F, B) vs. high quality (B+, A-, A) grades / 5) Comparison of treatment planning errors / Rates were calculated at 95% confidence intervals using vasserstats.edu.

Findings: /There was an increase in the number of students making zero errors, a decrease in primary errors, and an increase in the pass rate. There was a statistically significant difference between the TE and traditional methods in high vs low quality grades; and
a significant increase in the number of (A-) grades; and significant decrease in (B) grades.

Conclusion: Data revealed positive trends supporting the TE method. A number of confounders are currently undergoing additional investigation including student reactions to different types of feedback and equivalence of CSC difficulty.

E18.

EVALUATION OF PERSONALITY TYPES AND THEIR EFFECT ON PATIENT-CENTERED CARE AMONG DENTAL STUDENTS.

Garima Kala, Venus Patti, Gunveen Chawla, Maureen McAndrew

The purpose of the research was to identify and evaluate the different personality types and their effect on patient-centered care among third and fourth year dental students. The research was carried out by distributing two paper surveys among 163 students in 6 group practices at New York University College of Dentistry. The first survey was a standardized “True Colors Personality Survey”; it was to evaluate the personality types of the dental students. It classifies personalities in Orange, Gold, Blue and Green types based on particular characteristics used by the students to describe themselves the most. The second survey was based on questions relevant to dental student-patient interaction. It explored the level of positive feedback that the dental students received from their patients in form of thank you texts, gifts and compliments on the dental treatment done. 163 surveys were randomly distributed among third and final year dental students by three investigators. Out of the 163 surveys distributed, 76 students filled out and submitted the surveys in designated collection boxes. The study was single blinded and the survey was anonymous. The results of the research primarily aim at evaluating if a specific personality type is predominant among the dental students. Secondarily, the study will look at the association between specific personality types and patient feedback.
E19.

EQUIVALENCE OF DIFFICULTY IN CASE-BASED ASSESSMENTS

Christopher Henry, Nicolas M. Freda, Jae Ik Kim, Nhung P. Quan, Mitchell J. Lipp

Purpose: Summative assessments are a valuable tool in health education for the evaluation of learning, identification of deficiencies, 1, 2 and inferring competence.3 A case-based assessment should include multiple cases of balanced difficulty1 so that performance is not simply a measure of difficulty of selected simulation cases.4 The challenge is objectively determining case difficulty. The purpose of this study is to describe an approach to evaluating level of difficulty of clinical simulation cases for the purposes of a competency-based assessment.

Methods: This study was reviewed and exempted from IRB review at New York University. Groups of D3 students took a competency-based summative assessment consisting of four clinical simulation cases at the end of an orthodontic course consisting of six two-hour seminars. Students were expected to generate a problem list,
treatment objectives, and a treatment plan. Objective evaluative criteria were used to assess competence for each case. Data for Cases 1, 2, 3, and 4 was collected from 2011, 2012, 2013, and 2014 (N=338). Data for Cases 5, 6, 7, and 8 was collected from 2012, 2013, 2014, and 2015 (N=457). Aggregate de-identified performance data on these eight cases across four years was compiled and analyzed.

Results: This study is ongoing, but preliminary review has revealed patterns that suggest varying levels of difficulty of cases based on student performance. Case 1 had a competency rate of 64.50% compared to 11.24% for Case 3. Cases 4, 5, and 7 had competency rates of 31.95%, 35.67%, and 35.01%, respectively, while Cases 2, 6, and 8 had competency rates of 43.49%, 42.45%, and 40.70%.

Conclusion: Educational programs rely on fair, reliable, standardized tools for assessment. Results from this study suggest differing levels of case difficulty, which can distort assessment reliability and validity, compromising inferences of “true competence.” Retrospectively analyzing aggregate student performance data is an objective method to categorize case difficulty. This approach can be used to construct fair case-based assessments of equivalent difficulty.

E23.

SURGICAL AND RESTORATIVE EDUCATION UTILIZING 3-D PRINTED MODEL

Takanori Suzuki, Tatiana Pashkova, Aikaterini Georgantza, Cho SangChoon, Stuart Froum, Peter Loomer

Often times extraction of upper premolar teeth results in the buccal concavity around the apical area. It becomes necessary to change the angulation of the future implant in such sites in order to keep it inside the bony housing and avoid Guided Bone Regeneration procedure. Conventional CBCT technology has been utilized to evaluate the available bone in these sites. However, it can be difficult to extrapolate the two dimensional CBCT image to the three dimensional extent of the bony defect, making surgical planning stressful. Therefore, 3D printing technology has been introduced as a fast, accurate and cost effective tool for surgical planning and practice. 3D printed model helps to visualize the available bone in the proposed implant site; any individual bony defects and allows for simulation of osteotomy placement. The purpose of this case report is to discuss the advantages of 3D printing as a valuable tool for surgical planning and education.
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