"MY SMILE" - tooth brushing programme for school children in Dubai, UAE

By Dr. Shiamaa Al-Mashhadani, UAE

Introduction
Oral health has been a top priority in the Dubai Health Authority agenda for the strategy 2021. The main aim is to decrease the level of caries for children in Dubai. The latest data shows that the percentage of caries for children aged 5-6 years was 65%, which is considered higher than the average caries level in the region.1 The “MY SMILE” tooth-brushing program was introduced in 2017 under the direction and guidance of Dr. Hamda Al-Mesmar, the Director of Dental Services Department of Dubai.

Background
The aim of the tooth-brushing scheme was to introduce forms of preventive activities that would decrease the high levels of caries prevalence among the students in Dubai schools. The tooth-brushing in schools scheme is an evidence-based intervention, drawing on principles and learning from comparable programs in Scotland2,3 and other research which show that the application of fluoride toothpaste in a supervised school-based intervention can have a significant effect on children with high caries risk. The tooth-brushing program was designed with the intention of improving the oral health of young children and with emphasis on the importance of daily good oral hygiene habits.3

Project Outline “MY SMILE” tooth-brushing program
In 2017, “MY SMILE” program was introduced to 12 government and private schools in Dubai from over 47 countries to share ideas and discuss their research, innovative approach, advancements and best practiced methods on the field of dentistry, dental professionals and dental students were invited to present their findings and enjoy a stimulating professional atmosphere not only encouraged visitors to attend but created networking opportunities for sponsors, exhibitors and participants alike.

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9th DFCIC sees record attendance

By Dental Tribune MEA/CAPPmea

CAPP Events recently concluded the 9th edition of the Dental Facial Cosmetic International Conference and Exhibition. Over 3,000 dental professionals, students, trade visitors and VIPs from the MENA region, Americas, Asia, Australia and Europe gathered at the InterContinental Hotel Dubai Festival City, UAE on 3rd and 4th November. The event once again established itself as the region’s largest scientific dental conference (03-04 November) featuring a thrilling and vibrant exhibition showcasing the latest novelties aesthetic dentistry (03-04 November), Dental Hygienist Seminar (05 November) over 20 multidisciplinary pre- and post- hands-on training courses (05-06 November) and over 25 free CME trainings at specially dedicated training zones throughout the exhibition area.

The two-day scientific dental conference programme welcomed a total of 303 dental experts who discussed their research, innovative approach, advancements and best practiced methods on a variety of topics including aesthetic dentistry, endodontics, restorative dentistry, orthodontics, prosthodontics, implantology and hygiene. A total of 3,027 international delegates made the trip to Dubai from over 47 countries to share ideas and network with dental experts, speakers, industry players as well as movers and shakers in the dental market.

The annual event provided an unparalleled platform for dental professionals to earn up to 17 continuing medical education (CME) credit hours over the course of five days accredited by Health Authority Abu Dhabi (HAAD), Dubai Health Authority (DHA) and through CAPP which is an ADA CERP recognized provider of CE credits. The conference was intended to be more than just an educational experience. It was designed to be unforgettable and enjoyable with dedicated events for all dental specialties. The large variety of the scientific programme throughout the five days played a key role in attracting a record number of delegates and visitors. This year’s significant event highlight was the “Free CME Training” which took place during the exhibition at dedicated training zones. The activity not only encouraged visitors to attend but created networking opportunities for sponsors, exhibitors and participants alike.

Dental Hygienist Seminar (DHS) once again took place in partnership with Colgate Oral Care Academy and supported by the International Federation of Dental Hygienists (IFDH) focusing entirely on the dental hygienist profession. A mix of international and regional speakers presented relevant hot topics aligned with the seminar theme “Exploring the possibilities in the arena of dental hygiene”. A total of 303 dental hygienists attended the dedicated programme and its sub hands-on training courses with topics such as enhanced biofilm management, working posture and periodontal instrumentation and sharpening. As part of CAPP’s commitment to further supporting the path for innovative research and advancements in the field of dentistry, dental professionals and dental students were invited to present their findings through the “Poster presentation” competition which was reviewed by academics and industry experts.

Dr. Dobrina Mollov, founder and Managing Director of CAPP summarised, “Such events are of paramount importance to dental professionals as they encourage conversation, integration of best practice, adaptation of the latest advancements in technology and above all contribute positively to maintaining and improving patient health.”
Over 3000 delegates attended the two-day event 9th Dental Facial Cosmetic Conference & Exhibition.

Dr. Aisha Sultan - President of the Emirates Dental Society

Conference chairman - Dr. Munir Shewad

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9th Dental Facial Cosmetic Int'l Conference & Exhibition Impressions

Dr. Knut Hufschmidt, Austria explained the world of direct restorations.

Dr. Mario Besek lecturing on another dimension of composite restoration - new possibilities.

Professor Louis Handin, Lebanon lectured on direct composite restorations.

The event once again established itself as the region’s largest scientific dental conference.

In total 153 dental hygienists were educated during the Dental Hygienist Seminar.
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By Dentsply Sirona

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By SHOFU

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Back in May 2017, we interviewed Julian Callanan, the Managing Director of Sinterex, and discussed how he and his business were applying metal 3D printing technology in dentistry. We caught up with him to find out his progress and the latest products.

DTMEA/CAPPmea: How have the last 6 months passed by?
Julian Callanan: The last 6 months have absolutely flown by. As a young business, we are on a constant roller-coaster ride with highs and lows combined with lots of learning. The summer in particular was quite tough, I know many clinics and laboratories found market conditions to be more quiet than usual, but things seem to be moving again now. Overall, we keep adding new customers, and once they convert from the traditional manual techniques to digital production, then they do not go back.

Are you working on any new products or technologies?
Our primary product line remains PFM crowns and bridges. However, since we last met, we have introduced two new products: Removable Partial Dentures and Metal Surgical Guides. The RPDs which we produce are a great solution for a partially edentulous patient who is not a candidate clinically or financially for implants. We use a metallurgical process called Solution Annealing which brings flexibility into our metal and helps with the fit for the patient. The second product is a metal 3D printed Surgical Guide. This is a really exciting innovation in Surgical Guides and we recently collaborated on a trial surgery to test the product in the Middle East region for the first time.

Who was involved and what did you do?
We worked with a broad team of dental experts. The design of the guide and the planning of the operation was led by 2INGIS, a Belgium based company who holds many patents in this area. The operation was led by Dr. Ahmad Aljazairi with support from Dr. Islam Samy and Dr. Khaled Al-Ekram. The role of Sinterex was to metal 3D print and then finish the guide.

What was the outcome?
The patient had two missing teeth and one broken tooth. During the operation the broken tooth was removed, and three implants immediately placed. We checked the results after the operation using a CBCT and the implant placement was perfect, more importantly, the patient was happy. The patient had needed the operation for a while but was avoiding as he was worried about the procedure. The patient works as a microelectronic technician and is very technically minded, when he heard that a surgical guide would be used, his confidence in the procedure increased.

What lies ahead for Sinterex?
We are focusing now on expanding our customer base and bringing our products to new markets. In parallel we are also looking at some really cool new 3D printing technologies which we feel could be beneficial to our existing customers.
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The latest version of Sirona Connect SW 4.5 offers additional software and portal features, which expand and improve both the digital impression process in the practice, as well as the possibilities for choosing individual laboratory services during the Sirona Connect ordering process.

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  - Less computer power needed.
- **Shade Detection**
  - The ‘Shade Detection’ feature allows you to analyze the shade of any tooth based on the Omnicam scan. This gives you objective support and more certainty when selecting the suitable restoration shade.
- **Open Scan Export**
  - Exporting scan data in STL format is possible for CEREC Omnicam introral scans. This means that the data from the digital impression can now also be used in software products from other manufacturers. This allows new options for the digitalization of your practice.
- **Digital impressions of implants from Dentsply Sirona or third party implant systems**
  - Integration of "MIS" TiBases and "Thommen" scan posts.
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  - Separate image catalogue for scan posts and TiBases as well as other scanbodies.
- **Create customized laboratory services in the Sirona Connect Portal**
  - With the release of Sirona Connect SW 4.5, the Sirona Connect Portal offers labs the opportunity to create individual profiles and order information that are shown during admin phase and order phase in Sirona Connect SW 4.5.
- **Simplified connection to Atlantis® via Sirona Connect Portal**
  - Sirona Connect SW 4.5 is a full version which is supported by CEREC Omnicam, CEREC Bluecam and Apollo DI.

We highly recommend that all users install Sirona Connect SW 4.5. For more details please check the Sirona Connect SW 4.5 manual or ask your CAD/CAM specialist.

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Essential communication: The use of technology for virtual patient records

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By Dr. Les Kalman & Mariana Capretti, Canada

Introduction

Records are an essential and integral component of diagnosis and treatment planning. Moreover, the acquisition of records allows the required communication between the clinician, laboratory, patient, and other third-party stakeholders. This is crucial in all aspects of dentistry, but holds immense value in implant dentistry. Unfortunately, there is a growing epidemic in which clinicians are utilizing the minimal amount of records. This becomes a paramount issue in the delivery of predictable and successful dental implant therapy. Records may take many forms, but they tend to originate from two different groups: concrete and virtual. Concrete records include impressions and models, while virtual records encompass modalities such as cone beam computed tomography (CBCT) and intraoral scans. Each group has its own strengths and weaknesses, yet the literature seems to suggest that CBCT provides an abundance of information, especially for implant dentistry.

Computed tomography

Computed tomography (CT) has revolutionized diagnostic radiology. Since its inception in the 1970’s, its use has increased rapidly, with the annual number of CT scans, in the United States alone, now being over 70 million.1 By its nature, a CT unit involves larger radiation doses than the conventional X-ray imaging procedures. Consequently, a typical CT series results in radiation doses that are associated with a small, yet statistically significant increase in lifetime cancer risks.2 The quantity most relevant for assessing the risk of developing cancer from a CT procedure is the effective dose.3 A diagnostic CT procedure produces an effective dose in the range of 1 to 10 mSv, with a dose of 10 mSv possibly being associated with an increase in the likelihood of cancer of approximately 1 in 2000.4 The risk of radiation induced cancer is much smaller than the natural risk of cancer; however, this small increase in risk for an individual becomes a public health concern if large numbers of people undergo increased numbers of CT screening procedures unnecessarily.5,6 There is strong evidence suggesting too many CT studies are being performed in the United States and it has been speculated that one third could be replaced by alternative approaches, or not performed at all.7

Furthermore, in the dental office setting, the large size, high cost of the equipment and logistics makes it improbable for the clinician. Likewise, with a cost per scan ranging in the hundreds to thousands, the procedure can be challenging for patients.8 Thus, although CT has numerous beneficial aspects, there are barriers to the technology from both the clinicians and patient’s perspective. Subsequently, other record acquisition techniques have gained increasing popularity.

Cone beam computed tomography

Cone beam computed tomography (CBCT) is a variation of the traditional computed tomography (CT) system.9 With CBCT, an X-ray beam, in the shape of a cone, rotates around the patient to produce a 3-D reconstruction of the craniofacial area.9,10 Dental CBCT was developed so that dentists could have a small, less expensive machine still capable of producing 3-D images.11 The equipment is used for various clinical applications, including dental implant planning, visualization of abnormal teeth, evaluation of the jaws and face, soft palate assessment, diagnosis of dental caries, endodontic assessment and diagnosis of dental trauma.12 Thus, CBCT provides a fast, non-invasive method of addressing a number of clinical questions.13 Moreover, compared to the conventional CT, it has a limited X-ray beam, offers a shorter scan time, uses a lower radiation dose, and contains fewer imaging artifacts.14 Nevertheless, to accurately read a soft tissue phenomenon, a 24-bit contrast resolution is needed. The dynamic range of CBCT for contrast resolution can only reach 14-bit maximally and consequently, CBCT is not the best imaging modality to evaluate soft tissues.14 Additionally, it does not provide the full diagnostic information available with conventional CT.12

The aspect of cost, technology implementation, skills acquisition and radiation exposure also hinder the utilizing and implementation of CBCT in the dental office.

Intra-Oral Scanner

Launched in the USA in October 2012, the True Definition Scanner (Fig. 1) is a relatively new digital intra-oral scanner. Its 3-D video capture technology allows the dentist to digitally capture images of the patient’s dentition.15 The scanner’s technology instantaneously stitches...
the images together to generate an accurate replica of the patient's oral anatomy. Patients can therefore have a better understanding of their oral condition and the treatment procedures. Furthermore, the preciseness of the data provides the clinician the required records to design and fabricate prostheses, such as orthodontic appliances, crowns and bridges, all without the need for impressions or models. This eliminates the time and cost associated with impressions, model fabrication, potential for material distortion and the issue of patient discomfort. In addition, the True Definition Scanner digital files can be used with any system that accepts STL files, a common file format used for saving three-dimensional objects. Dentists can easily share files and work with laboratories and other open source technologies to design and fabricate prostheses and delivery quality treatment to the patient.

However, there are limitations to the technology. Since this is a new technology, there is the period of skill acquisition for the clinician and, although the unit is mobile, it requires space (note: a compact, tablet-based unit has been recently introduced). Additionally, while the True Definition Scanner captures the dentition, there is a lack of reference to the patient. Once the scans have been compiled into an image, the image has the ability for rotation in three-dimensional objects. Dentists can easily share files and work with laboratories and other open source technologies to design prostheses and delivery quality treatment to the patient.

MaxAlign

MaxAlign: The clinical companion

Given that it accurately and efficiently captures and documents important patient information for the laboratory, third party insurance, and patients, MaxAlign (Fig. 5) is a tablet-based technology that serves as a communication tool for clinicians. The program is a modified virtual facebow application that, unlike conventional facebows, enables the accurate mounting of casts alongside a patient’s image (Fig. 7).

MaxAlign provides a novel approach to the virtual acquisition of records and information. In three steps, the dentist can capture a photograph of the patient’s teeth, document the width of the centrals (Fig. 6), and record the occlusion. The accurately mounted casts provide information that can be used for diagnoses and treatment planning and offers an easy reference for the mounting of models. Using MaxAlign with a LabStand, the lab can easily use photographic overlays to mount the models, anatomically referenced on the patient. Ultimately, the increased accuracy and accessibility in patient data reduces lab guesswork on cases and delivers predictable results efficiently. As MaxAlign is a mobile, tablet-based technology, many barriers to utilization are eliminated. For instance, as the technology is mobile, it does not require any office space consideration. It is also cost-effective, possesses negligible radiation concerns for the patient and has a gentle learning curve for the clinician and staff.

Fig. 4: MaxAlign patient image indicating facial references planes

Fig. 5: MaxAlign tablet software used for patient image acquisition

Fig. 6: MaxAlign patient image modification

Fig. 7: 3M digital X-ray scan merged and referenced with MaxAlign patient image

Merging virtual technologies

Recent research has investigated a new application utilizing MaxAlign with the True Definition Scanner by merging and correlating the introral images (Fig. 7). MaxAlign provides the reference and frames the 3D introral digital impression with the landmarks of the patient’s face, providing crucial information to the lab in anterior aesthetic and complex prosthetic cases. Additionally, early investigation has also merged images from digitalized wax-up scans with the referenced patient image from MaxAlign (Fig. 7). By applying the transparency control on MaxAlign, the patient and other third parties, can now have the ability to immediately ‘try-on’ the proposed restorations and view a before and after effect within the context of the patient’s face. This can aid in patient communication and understanding of planned treatment.

Conclusion

Records will continue to have a significant requirement in the diagnosis, treatment planning and delivery of predictable and successful prostheses. With the growing pressures on the dental profession, including economics, office space limitations, patient concerns and skill acquisition, it is crucial to develop accurate and informative technologies to maximise patient information acquisition and communication. Although CBCT and virtual planning remain the gold standard, there are real patient and clinician limitations to the technologies. The utilisation of low-radiation, mobile, tablet-based technologies to merge patient information, has become an exciting avenue that will continue to have an increasingly important role in implantology and dentistry.

References

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One patient, one doctor: 30 years of implant innovation

By Jack A. Hahn, DDS

Since placing my first dental implant 45 years ago, many implant systems have come and gone, several of which I designed myself. If there’s one thing I’ve learned from the thousands of implant cases I’ve completed during the course of my career, it’s that regardless of the implant system chosen, long-term success depends on following the basic principles of treatment planning, surgery and prosthetic design.

Innovations in implant design have streamlined and simplified treatment, making it easier to produce ideal outcomes. Key advancements, such as the screw-shaped implant body, the internal prosthetic connection and the tapered body design, have been crucial in making implantology the essential mode of tooth replacement it is today.

The following case illustrates more than three decades of implant evolution within the mouth of a single patient. Each implant this patient received throughout the years represents a small but significant step forward, culminating in the placement of the Hahn™ Tapered Implant (Glidewell Direct; Irvine, Calif.), which I designed in order to make treatment simpler, more predictable and as accessible to as many patients as possible.

The patient

The patient, whom I’ve been treating for more than 30 years, has received implant therapy several times to treat tooth loss from fracture or decay. Because this treatment occurred episodically throughout many years, I’ve utilized several different implant systems to replace the patient’s teeth. As a result, the patient has implants with internal as well as external hex connections, ranging from an outdated bladeform design to the very latest tapered implant. The experience I’ve had both designing and placing these implants for this patient and thousands of others has given me the unique opportunity to observe my results and determine what designs and protocols work and what can be improved, as I’ve strived to advance implant design throughout the years.

The implants

• JAH 2000 Blade Implant (Fig. 3): I first placed an implant for this patient in 1988. It was the JAH 2000, which I designed as a flat, two-piece implant with wings. The blade implant was indicated for thin ridges where a root-form implant could not be placed without bone grafting. Blade implants were typically connected to other implants or teeth, and could be cut, shortened and shaped to align with the anatomy of the bone, which was commonly required when placing blade-form implants at the time. For this patient, two teeth anterior to the implant were prepared, an incision was made, a trough was drilled in the patient’s very narrow ridge, the implant was placed and a five-unit bridge was delivered to replace three teeth in the posterior mandible. Notice that I adjusted the distal inferior portion of the implant so as not to impinge on the mandibular nerve.

The JAH 2000 was a significant improvement over what was on the market at that time. I designed the neck to extend lower than the tops of the wings, allowing more bone to integrate around the neck of the implant. Decades after implant placement, this blade design continues to serve many of my patients well.

• Steri-Oss HL (Fig. 4): The Steri-Oss HL implant in the area of tooth 26 is HA-coated and was placed immediately into an extraction site of a tooth that was lost to caries.

Beginning in 1986, my practice was one of multiple centers conducting a 12-year study on nearly 3,000 Steri-Oss implants. We gained provisional ADA approval for extraction with immediate implant placement and loading.

The Steri-Oss HL had a machined collar, which facilitates excellent hard and soft-tissue preservation. As the clinicians in the 12-year study noted at the two-year follow up, there was little to no bone loss radiographically around the machined collar. That’s why I decided to include a machined collar in my later designs.

• Replace Select Tapered (Fig. 5): I placed several Replace Select implants (Glidewell; Irvine, Calif.) for this patient throughout the years, and the tapered shape simplified positioning within the available bone, especially in the area of the premolars. Prior to the Replace Select, most implants were parallel-walled, and in 1993, I came up with the concept of a tapered design, although it didn’t come to market until 1997. The idea arose from my experience with single-tooth replacements in the anterior maxilla, where I’d often need to tilt parallel-walled implants to the facial to avoid perforating the subnasal fossa. The roots of natural teeth are tapered, so it occurred to me that implants should be tapered as well. The bone is not square; it’s a series of tapers that is best accommodated by a tapered shape.

A flat top with an internal connection offered an esthetic advantage because the implant could be placed at or slightly below the crest of the bone, without an external component causing metal to show through the crown. This led to the design of the tri-lobe internal connection of the Replace Select, which was first introduced by Steri-Oss and became the most popular design in the Nobel Biocare implant portfolio after the company acquired the brand in 1998.

The thread pattern of the Replace Select was similar to that of the parallel-walled Steri-Oss implant, but I wanted to have a variant of aggressiveness in the pitch of the threads as it came up to the apex. I knew that another company was coming out with four different implants for the different qualities of bone, and I wanted to beat them to the punch. So I said, “Let’s put four different thread patterns in one implant,” which really helped with the degree of taper and cutting into denser bone.

The tapered shape of the Replace Select was ideal for two-stage treatment, but the thread design wasn’t aggressive enough to provide the stability needed for single-stage surgery. This left me wanting a thread design that was more sharp-edged — but not too aggressive — which was one of the formative ideas behind the Hahn Tapered Implant.

• Hahn Tapered Implant (Fig. 6): Like several of the implants I’ve placed for this patient, the two Hahn Tapered Implants shown in the panoramic radiograph (Fig. 2) were placed immediately following extractions. The patient is active socially and has always wanted an immediate temporary after having a tooth extracted. In both cases, I extracted the tooth, prepared the site and placed the implant.

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Fig. 1: Dr. Jack A. Hahn and Glidewell Laboratories President and CEO Jim Glidewell display the Hahn Tapered Implant — the culmination of decades of clinical observations and innovation. (Photos Provided by Dr. Jack A. Hahn)
The patient’s root-canal-treated mandibular canine needed to be separated from the posterior bridge connected to the patient’s JAH 2000 blade implant. Because both of the Hahn Tapered Implants achieved excellent initial stability, immediate provisional crowns were delivered. The patient’s other implants have performed well, but required more work to get the outcome I wanted. With the Hahn Tapered Implant, there are fewer steps.

The Hahn Tapered Implant’s ability to remain engaged with the palatal bone and attain maximum primary stability is the result of its deep, sharp threads, which I consider the implant’s most important design innovation. By the time I began developing the Hahn Tapered Implant, I had concluded that the thread patterns of the previous implant systems I designed weren’t aggressive enough. As a result, the implant could wander toward the thin cortical bone of the facial plate during placement. Other implant systems on the market that had a sharper-cutting thread design were too aggressive and could cause microfractures in narrow bone or ridges.

So I designed a new tapered implant, including threads that were just aggressive enough, and brought it to Glidewell Laboratories. The engineers and business leaders at Glidewell, many of whom I’ve enjoyed working with in past endeavors, were happy to meet with me. I told them, “We need a tapered implant that doctors can easily place, stays right where you want it, and gets maximum primary stability.” They looked at my drawings, and their team of engineers helped me fine-tune the design until we got the thread pattern just right. We ended up with an implant that can be directed against the palatal bone, avoids the facial plate and fits within tight anatomical spaces. The Hahn Tapered Implant includes a 1 mm machined collar. Because both hard and soft tissue is stable around a machined collar, this design affords doctors the flexibility in crestal positioning they need to meet the aesthetic demands of each case. We designed the implant with a conical connection to ensure a strong, stable seal.

The prosthetic connection also facilitates platform switching, which has been shown in numerous studies to preserve bone and gingival tissue around the implant-abutment interface. “To ensure an optimal restorative outcome, the Hahn Tapered Implant System features contoured healing abutments and matching transfer copings.”

Since we launched the Hahn Tapered Implant in 2015 and began working with experienced practitioners, we’ve received nothing but positive feedback. The comment I hear repeatedly is “Jack, I love your implant.” Looking back at this patient’s radiograph, I know that we’ve come a long way with implant design.

Conclusion

The various implants I’ve designed and placed in this patient throughout the years demonstrate that success is highly predictable as long as we adhere to the proper diagnostic, surgical and restorative principles. At the same time, advancements in implant design have simplified surgery and made it easier to establish the implant positioning and stability needed to achieve the best outcome possible. I’m proud to have contributed to this evolution and look forward to the innovations to come.

References available upon request from the publisher.

Dr. Jack A. Hahn earned his DDS from The Ohio State University College of Dentistry and completed postgraduate coursework at Boston University, New York University, the University of Michigan and the University of Kentucky. A pioneer in the field of implant dentistry, Hahn has been placing and restoring implants for more than 45 years. Hahn developed the Nobel Replace dental implant system for Nobel Biocare and oversaw the design of the Hahn Tapered Implant. Recipient of the Aaron Gershkoff Lifetime Achievement Award in implant dentistry and the Venue and IAD magazine Healthcare Leadership Award, Hahn was honored with the Lifetime Achievement Award from the American Academy of Implant Dentistry in June 2015. Hahn is also editor-in-chief and clinical editor of Inclusive magazine. He lectures to dentists around the world and maintains a private practice in Cincinnati, Ohio. Contact him at replace7@mac.com.
Dubai, covering 1500 students aged 4-6 years old. The implementation of the program required cooperation between the Ministry of Health and Prevention, the Knowledge and Human Development Authority, School health and Educational Institute Unit, the private companies and Dental Services Department, Dubai Health Authority.1

- School children were provided with free toothbrushes appropriate for their age, fluoridated toothpaste and customized tooth brushing charts to record their daily tooth brushing.
- A training workshop was conducted for the oral health coordinators (school nurses) that were assigned to supervise the daily tooth brushing after meals and provide guidance and support to the students.
- Guidelines for tooth brushing in schools and infection control measures were adapted from the My-mile program (Scotland) and copies provided to the oral health coordinators.
- The program involved two forms of tooth brushing based on the facilities in school.

Dry tooth brushing
Schools that did not have the facility for children to go to washrooms to brush their teeth and spit excess toothpaste were given instructions to brush in their classrooms using appropriate amount of toothpaste and spit in cups or paper towels and were disposed of appropriately.

Wet tooth brushing
Schools that had enough washrooms to brush their teeth and spit excess toothpaste were given instructions to brush in their classrooms using appropriate amount of toothpaste and spit in cups or paper towels, and enabled the use of one toothpaste tube to be used for more than one student.2

- Toothpaste was placed on paper plates to help in infection control and enables the use of one toothpaste tube to be used for more than one student.

• A dental team of two dentists and two dental hygienists visited each school and conducted dental checkups using the visible plaque index (VPI) in a mobile dental van. Main concentration was to measure the plaque accumulation on the teeth surfaces for the students aged 4-6 years, as they were the age group with the highest caries prevalence based on the previous screening conducted in Dubai.

- Results were recorded for each student on oral hygiene forms and were placed in the student’s medical file in the school with the supervision of the school nurse.

- Follow up from the dental team with oral health coordinator was done on a weekly and monthly basis.
- At the end of the three-month activity, a second dental checkup conducted on the students to record the dental plaque accumulation and compared with the previous results. An extensive interview was conducted with the oral health coordinator (school nurse) and the feedback questionnaire from the parents were collected.
- An additional activity that encouraged children to be more involved with oral health was a drawing contest of healthy smiles, winners were given one year supply of toothbrushes and tooth paste to take home.