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Editor's Word

Dear Friends and Colleagues,

I am very pleased to publish the association's second magazine of 2017 and my second magazine as the editor. I am also very greatful to everyone who has contributed to this issue.

This issue features articles on Minimum Intervention Oral Healthcare, Volunteer work and research studies, to name a few. You could even challenge yourself to a crossword puzzle!

One a side note: our new website has now been launched, so make sure you take a look.

Happy reading,
Linnea Borglin
magazine@edsaweb.org

P.S. Do not hesitate to contact me if you have any ideas or are interested in contributing to the next issue.

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The Economics of Postgraduate Qualifications and Specialisation

Peter Ward
British Dental Association

The practice of dentistry is all about patients.

The needs of human beings to undergo dental interventions can be evidenced by skulls dating back many thousands of years. It is those needs that in turn have dictated the need for a body of clinicians to provide care and treatment within this very specific discipline. Those who choose to fulfil this role are motivated by a desire to help others, to provide care and to offer highly complex manual interventions.

So, dentists are healthcare professionals first, but they must also work in a way that allows them to earn a living and to defray the costs of their education and training. In the modern world, there are many pressures upon dentists in the context of regulatory compliance and in terms of financial solvency. The decisions that we make about how to deal with those pressures can lead to a career that is satisfying and highly rewarding. Bad decisions can lead to stress and struggle. This article looks at how devoted healthcare professionals can ensure their viability to offer long-term care to the patients that need them to be there.

So practitioners should look at their own business viability if they are truly committed to being around for the long game.

Many practitioners consider further academic study or specialisation as a means to secure that longevity. But the study and the accolades aren't the be-all-and end-all. It is important to frame the decision to study in the context of your wider career aspirations.

As academic high achievers, modern dentists are very adept at studying and passing examinations. Past successes in this context may lead emergent graduates to feel reassured by advanced studies and adding to their list of academic credentials. In acquiring those additional qualifications, the dentists will expend personal resources, time and trouble. The question then arises as to what the expected benefits from those investments will be. It seems to me that there may be three possible answers to that question. These may be summarised as clinical adequacy, market advantage and personal satisfaction.

Clinical adequacy

Having completed undergraduate study and registered with the relevant regulatory body, dentists are entitled to lawfully practise dentistry. In the eyes of the law they need no further qualifications other than perhaps updates and continuing professional developments. If the dentists themselves agree with that analysis, there is no legal justification for investing in further formal qualifications.

From a personal and professional perspective, dentists have a duty of personal reflection and self-appraisal and commit to work only within the confines of their clinical competence. So if, notwithstanding their legal certification, qualified dentists do not believe that they are properly competent to deliver aspects of their expected practice they have a duty to make good any shortcoming. For some, there might be a conclusion that the best way to achieve this result would be to undertake further qualifications or specialisation.

In short, the investment in the education would be justified by necessity. This would be a highly honourable justification and would reflect a high level of professionalism. At the same time, it would raise some serious societal questions about the adequacy of undergraduate dental education and the legitimacy of professional registration. Were there to be a widespread belief amongst graduates that although qualified and registered they were not, in fact, fit to practise dentistry without postgraduate qualifications society might reasonably ask whether the entry bar to practice was set too low.

Market advantage

For some qualified dentists, the prospect of routine general dentistry may not be appealing. They may find that they have particular skills in a specific area or a particular satisfaction from certain aspects of their professional practice. In turn, this could motivate some to consider specialisation in a particular area of dentistry. The rules around what specialisation means and what the entitlements / limitations are vary between countries. The essence of the decision is the same however – 'I like (or am good at) somethingology and I am going to invest in my skills and do that in preference to general dentistry'

The important word here is 'invest'. Although it may not feel like it, this decision to specialise is actually a business decision. Before limiting the field of operation, there are a few things the dentists should want to find out; Is there any need for the service I am specialising in? What is the likely demand?. How much competition is there?, What price will the market stand? These questions are better asked at the beginning of the journey than the end. The financial input and the blood sweat and tears will only prove worthwhile if there is some reward at the end of it. So geographic research, patient density, dentist density, and socioeconomic data should all feature in the decision to specialise every bit as much as competence and preference.

Really smart dentists making this choice should treat it like every other business decision and work out the business plan that underpins the decision. The considerations about investing in the training are the same as buying property or investing in equipment. What is the cost and what is the benefit?

Investment considerations	Return consideration	Equations
What is the cost of the speciality training?	Will I be able to increase my hourly charge out rate as a consequence of the training?	Cost of Qualifications / Marginal Improvement In Hourly rate X Hours
What will I not have time for while I am doing the training?	Ultimately will the training offer me a better working life?	How long will it be before the improved income pays back the cost of qualification?
What will I forego?	How will I benefit?	Will I be better placed to win better work?
How long will the training take?	Which area will I be able to get enough work in?	
What would I have earned while taking the time out to train?	Will my work opportunities be enhanced or constrained?	

Having done the research and the maths the arguments for or against the investment should become clear and that point is the point at which to proceed.

Personal satisfaction

Having considered the competency question and the market advantage question, dentists can consider if the decision to take further qualifications is based upon need or aspiration. If the answer to those questions is 'no' the question remains is whether there is justification in any other form. And the answer is that of course there is. It is a perfectly reasonable course of action for people to enhance their skills purely for the sake of personal satisfaction and self esteem. Dentistry is a fulfilling and satisfying activity. It is interesting and rewarding and for many dentists it is their hobby as well as their work. People invest their disposable incomes in far less worthy things than clinical advancement. The significant thing is knowing why you are doing it and sometimes just as importantly why you are not.

Dentists who are perfectly competent and well qualified and are satisfied with their lot my sometimes find themselves surrounded by others who are all doing postgraduate education. For them they may have other interests and activities that are impeded by the feeling that further qualifications must be done because everyone else is doing them. Frankly, that's not good enough reason and following the herd may not offer personal advantage or satisfaction. More importantly, for some, it may amount to overload and unhappiness.

So, in putting your patients first make sure you work out what will allow you to serve them best and to support yourself over the long term. When it comes to the decision about whether to take on further qualifications make sure you work out the why and the whether before you consider the what and the where.


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DENTIST THE WORLD

Ema Prohić
Dentisttheworld Ambassador

"Pull out a man's tooth and relieve him of his pain for a while: teach a man to brush his teeth and you relieve him for a lifetime"

On the 21st of March 2017 in Stone Town Zanzibar, Tanzania, the Dentisttheworld voluntary program, *Dental Project Zanzibar* commenced. 21 volunteers were assembled from 7 different countries around the world. It all lasted 12 days, starting with the gathering of volunteers from Austria, Italy, Serbia, Greece, Croatia, Poland and Thailand.

After the introductory presentation, dinner and a bit of cultural exchange, doctors and students of dental medicine have commenced with the plan and program of dental camp in the beautiful heart of Zanzibar. During the first three days visited the SOS children village and 3 county primary schools where we initiated a prevention program of oral hygiene called the "School brushing" program. While providing kids with tooth brushes and toothpastes, we managed to educate them about proper oral hygiene through stories, interactive games and songs such as what we called "We will brush teeth" (Swahili "Mimi sugua meno"). Overall 4,500 kids went through our preventive program and we have managed to gift them with oral health supplies and our free interactive time.

The second part of the program was called “pain relief,” which took place in 3 hospitals; the central hospital, Mnazi Moja (in swahilii “one coconut tree”) in Zanzibar City and Makunduchi and Kiwundge hospitals situated in the northern and eastern parts of the island in Nungwie and Makunduchi. Volunteers were divided in 2 groups where each group went to a different hospital daily and faced between 70 and 120 patients.

Thanks to our main partner companies Ivoclar Vivadent and Komet Dental, we were able to supply the hospitals with generous donations, in particular in the central hospital. We managed to donate a polymerization lamp, composites and a set for endodontic treatment with its following educational hours. Other donation materials were distributed accordingly to the rest of the hospitals and included an ultrasonic scaling unit (W&H®, Unidental), polymerization lamps, composite resin materials, disinfection liquids and disposable materials.

After successful educational and clinical work, we were greeted by the hosts of SOS children village with their traditional music, dance, a barbeque, a fashion show and acrobatics. All our hard work was followed by a well earned break which often turned into trips and swimming excursions. The last two days were spent in exploration of the “magical island” with crystal clear turquoise ocean, rich flora and fauna and its beautiful coral reefs. We visited Stone Town, the only town on the island of Zanzibar and a historical place under the UNESCO, a spice farm, the national park Jozani Chwaka Bay (habitat of red Colobus monkeys), and 150 year old turtles on Prison Island. We swam with dolphins and barbequed on SandBank in the middle of the Indian ocean. On April 31. 2017, after a rich dental and social program, team Dentisttheworld concluded their successful voluntary mission and with this chance would like to invite everyone with a free spirit ready to help those in need to participate in following dental projects. Apart from volunteering, Dentisttheworld also manages dental educations with the state of the art materials in its Headquarters in Vienna, Austria.

More about the organization and its work you can find by visiting www.dentistheworld.com, and don’t forget to follow us on FB @dentisttheworld because information, education and conveyance of our knowledge as young members of different developed countries is the key to our humanitarian missions and for a better world.

59th EDSA meeting, *Cardiff*

Ellie Baldock
Cardiff School of Dentistry, Wales

It was all the way back in Szeged, Hungary in 2015 that Cardiff won the bid to host the 59th EDSA meeting. 2 years of planning and hard work came together between the 9th and 13th April 2017 when EDSA descended upon Cardiff. We were overwhelmed with the volume of registrations and it was amazing to see so many students wanting to come to Cardiff. We welcomed over 100 delegates from 25 different countries. EDSA Cardiff saw new members join the EDSA family and built upon existing friendships and strengthened working collaborations.

The schedule for EDSA Cardiff was a particularly busy one, with an abundance of working groups, guest speakers, lectures, presentations and hands on workshops. EDSA participants enjoyed lectures from 2 of Cardiff's world-class lecturers, Professor Lewis who gave a fantastic interactive lecture and quiz on Oral Cancer and Dr Liam Addy gave a fascinating lecture on his experience of restorative and reconstructive dentistry. On Tuesday a round table was held which was particularly successful, with students engaging in discussions on the pros and cons of specialisation within dentistry. EDSA were joined by representatives from ADEE (Association for Dental Education in Europe), FDI-ERO (the European Regional Organisation of the Federation Dentaire Internationale) and the CED (Council of European Dentists). There were also presentations on the Pamoja volunteer programme, EDSA summer camps and EVP programmes which encourage students across Europe to get involved with them. Students loved the opportunity to get hands on in the Hu-Friedy suturing workshop and practice their surgical skills led by Cardiff's very own graduates Dr
Ross Lewis and Dr Bethan Edwards.

Not only was the scientific programme diligent but the social programme was also jam-packed to ensure participants got a real insight in to the culture, spirit and fun of the Welsh Capital city. Monday night saw the return of the infamous EDSA-vision and Tuesday night allowed EDSA to have joint social with Cardiff Dental Students Society. The pinnacle of the week was the Gala Dinner which took place at the world-renowned Principality Stadium. Everyone donned their best evening gowns and tuxedos and partied the night away in to the early hours. EDSA Cardiff's local organising committee had worked relentlessly to put on an amazing raffle and secured some incredible prizes such as; a pair of loupes, a signed Gareth Bale football Shirt and a signed jersey by the Welsh international rugby team. The raffle was a huge success with all money raised going to FaceUp Cymru and CLAPA (Cleft Lip and Palate Association).

Thank you to the ExCo and all EDSA delegates for a fantastic week, we are excited to see you all at the 60th EDSA meeting in Vilnius, Lithuania this summer!

"I think I'm good, but am I?" - A guide to clinical audits

Dr. Andrew Kalli

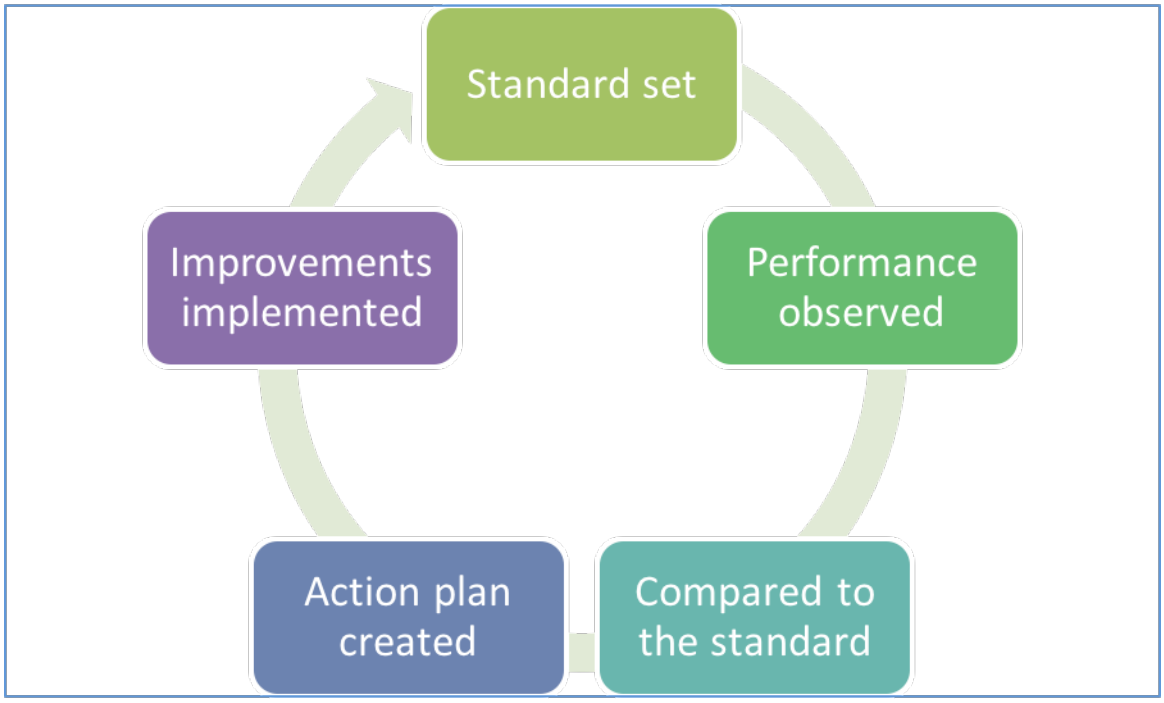
Background

When the dental treatment we provide is unsuccessful or sub-optimal, we reflect and consider the causes for this. Other than anecdotally, do we know how often these errors occur and what exactly the issues are? As clinicians we should be able to confidently promise a predictably high standard of care to our patients.

Although supervising bodies may act upon malpractice, a highly competent dentist should still strive for further improvement. To identify subtle clinical concerns (which may or may not be known), self-regulation is fundamental.

What is a clinical audit?

A clinical audit should not be confused with scientific research. It does not involve a scientist testing a hypothesis, but instead a form of quality control every clinician can do. The process involves *observation* and *cycle*(s) of improved quality of care.



How can I undertake a clinical audit?

The simplest way to understand what an audit is to know the process of undertaking one. The principles of audit are consistent, regardless of the topic being tested.

1) Choosing a topic

The most valuable audit will be on a procedure you know can be improved. Perhaps, during your clinical time you feel that you need to repeat your alginate impressions more than your colleagues - a perfect audit! There is no benefit in auditing something which you know has limited potential improvement. For example, if you cannot remember your last failed ID block it wouldn't be helpful to commence an audit to the find the cause. Nonetheless, audits on some topics may be appropriate at a 'regular interval' which may identify unknown errors. An example is a radiography audit, every film taken can be graded 1 - 3. The percentage of each grade can be checked regularly and you may be surprised there are more grade 2 or 3 than expected.

Film grade 1 - Faultless radiograph

Film grade 2 - Some minor errors but still of diagnostic value

Film grade 3 - Severe error in positioning or processing meaning the film must be repeated.

2) Setting a standard

Before collecting data, it is important to outline what you aspire to. The standard should be realistic and evidence-based. Do remember, that it may not always be reasonable to hope for 100% success in all topics.

Much like the film grading defined above, you must describe what you deem to be good/acceptable. For example, it may be desired for an alginate impression to have smooth consistency, free of air bubbles, correctly extended, cast within 2 hours...

3) First cycle of data collection

The data collection can be done prospectively or retrospectively depending on the topic. In the example of the alginate impression, it would be useful to have a chart with the desired characteristics as a ticksheet. It may be quick to identify an issue with air bubbles when this box is not regularly ticked.

During the audit you may feel that the standard set was inappropriate. In these cases, pilot data collection is useful. You can then modify before attempting the first cycle of data collection again.
As expected, the more patients included in the sample the more representative it is. Being satisfied with 5/5 cases cannot be accepted as 100% success. Likewise, it is appreciated that clinical audits are a task for busy clinicians, therefore samples of 25-50 cases are generally accepted for each audit cycle.

4) Compare to the standard

Once the data has been collected, it should be analysed. Remember the objective of audits is a simple observation and therefore adding up columns on the data collection is typically sufficient. Some topics may demand simple Excel functions, but rarely complex statistics. Once the results are available it is important to refer back to the pre-audit planning. Was the standard met?

5) Action plan

Do not be disheartened by an audit identifying an issue with a clinical technique – that a successful outcome. Once known, an action plan must be devised to manage the issue. For some errors, simply recognising it will improve care. For others, you may wish to enhance your knowledge, this can be by discussing with colleagues, reading up to date literature, or going on a course. It is possible, that the error is not with your own practice but in the example of radiography all films taken on a Friday afternoon may be of poor diagnostic value. If non-digital film is being used, the issue may lie with the practice's frequency of changing chemicals for the processor.

6) Re-audit, including additional cycles

If the standard is met in the first cycle, no action is necessary. If the standard is not met, opportunity should be given for improvements to take effect before collecting data for a second cycle. If the standard is realistic and evidence based, as many cycles of data collection and action should be undertaken until met.

Audits are something for personal improvement and therefore there is no need to share your results with others, unless you want to. Some clinicians however value a peer-review style audit. An example would be for clinical record keeping. A standard is set and then you compare your colleagues' patient records to the standard.

Once you've met the standard of your original audit... find a new topic.

Good luck in the future and be the best clinician you can be!

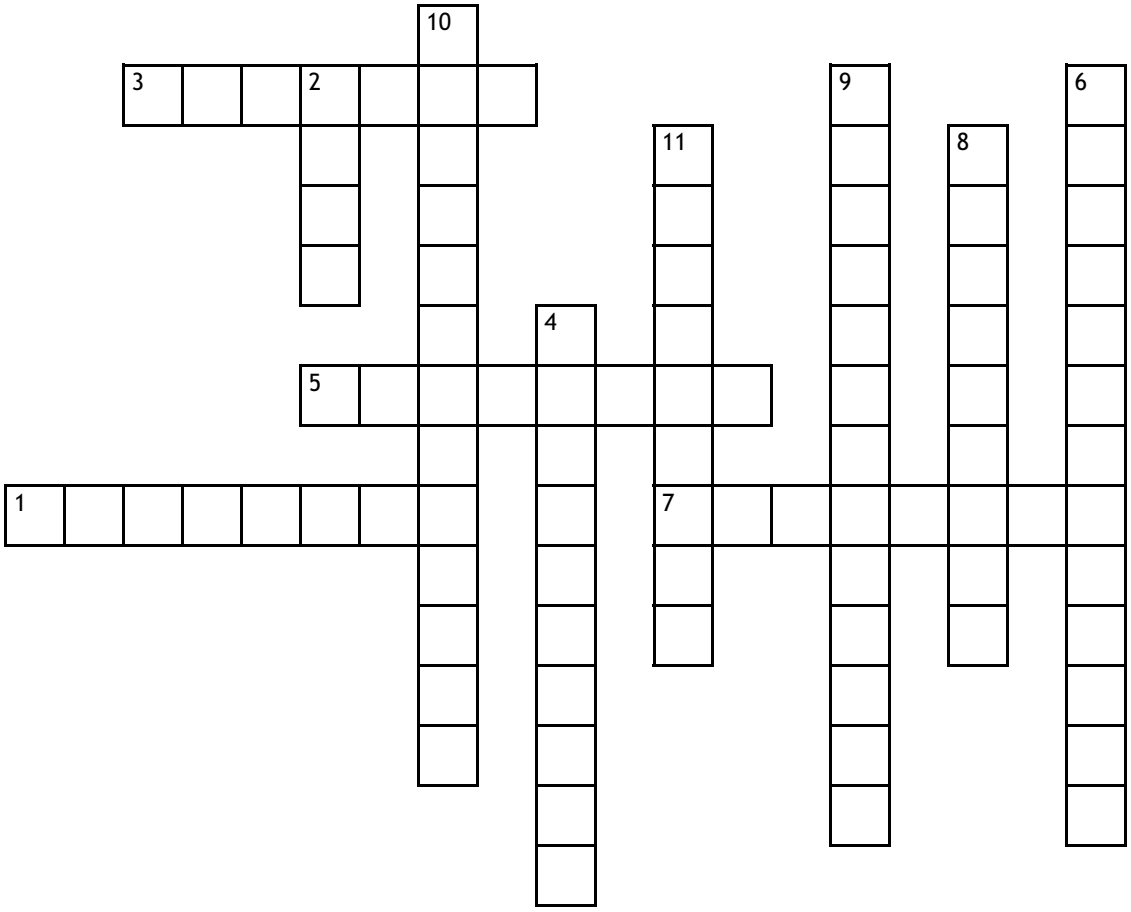
References

University of Birmingham, School of Dentistry. Mecourse digital learning platform (G Perryer); 2017.

Ayberk Kara
Okan University Faculty of Dentistry, Istanbul

CHALLENGE!

Can you complete this crossword puzzle without any help?



Across

1 Older term for periodontal (gum) disease
3 A metal component of amalgam fillings
5 Calcified body of tissue found in the pulp chamber
7 Tearing or knocking out of tooth or body part

Down

2 A soft or hard tissue sac, hard or filled with fluid
4 Animals with two sets of teeth
6 Drug used as an aspirin replacement in children
8 Genetic disorder resulting in enlargement of cheek tissue and other facial structure
9 Shortness of the lingual frenum
10 Layout of dental material and equipment
11 In which city the 30th EDSA meeting took place?

Scan the QR Code for the answers.

Creative solutions for W&H at the Digital Innovation Days 2017: "bRight" team takes 1st place

For the students of Salzburg, the Digital Innovation Days held at the Salzburg Chamber of Commerce from 10-12 May 2017, were a chance to delve into the practical side of commerce. By developing an innovative product concept for daily teeth cleaning, the young team of students called "bRight" managed to impress the judges and scoop the first prize of € 1,000. The original design of the interactive mirror, which displays the teeth cleaning status in real time and thus enables a more thorough cleaning result, was rewarded with the outstanding 1st place. "The students displayed not only creativity, but also a profound understanding of our customers' daily requirements. We are very proud of this innovative contribution," said Dr Michael Reiter, a member of the management board and Head of Product Management & Digital at W&H.

The Innovation Days were dedicated to digital innovations and offered the students from Salzburg the opportunity to take a step away from commercial theory and towards its practical implementation. The focus of the three-day event was on tasks set by local companies, which were then tackled by more than 60 students from the University of Salzburg and Salzburg University of Applied Sciences in the scope of a design competition. Of the 13 teams in total, three of them dedicated their efforts to the tasks set by W&H Dentalwerk Bürmoos GmbH. The medical engineering company utilized the event to work with the students to develop new ideas for a digital future in the world of dentistry. The key issue was how digitalization can contribute to improved dental treatment and better oral hygiene in the future.

Creative idea for interactive teeth cleaning impresses judges

The project which stole the show was the prototype for an interactive mirror aimed at making proper teeth cleaning simpler in the future. It comprises an electric toothbrush collecting data in real time and transmitting it to an interactive mirror. A set of teeth pictured on the mirror employs a colour-coding system to display the teeth cleaning status. This customer-orientated idea from "bRight" makes a valuable contribution to improved oral hygiene and was awarded 1st place by the panel of judges.
The two other teams, "The Dentalist" and "Zahnrat", approached the thrilling topic with equally appealing results: "The Dentalist" presented an approach for how oral hygiene could be improved by employing a fair bonus-malus system incorporating all those involved in the treatment process. The system adjusts the premium paid by the patient according to his individual claiming benefits. "Zahnrat" developed a method to reduce the apprehension generally suffered by patients about to have dental treatment and to make the treatment experience easier for the dentist. "It was impressive to see the way the students tackled a completely new field, and their solutions showed what is possible when people are given a little freedom to think outside the box," said Dipl.-Ing. (FH) Christoph Hiltl, Digital Product Portfolio Manager at W&H.

"It was great to see the creative potential unleashed by the young students on the day. Digitalization creates opportunities for satisfying new customer requirements. It brings with it a change in the way customers source information and stimulates us as a company to develop new solutions specially tailored to the customers' requirements. The winning project stands out with its original focus on the customer and would thus surely be of interest to the market," said Andreas Bachmaier, Service

Solutions Manager at W&H. “The close cooperation with the students has given us an opportunity to gather new ideas and suggestions. In addition, we have also been able to establish contact with potential specialist personnel of the future and show them what an attractive and stimulating employer W&H can be.”

Digital Innovation Days generate a win-win situation

The focus of the Innovation Days was on interactive exchange between the students and five select local businesses in the fields of commerce and industry. The young competitors were tasked with forming teams and coming up with solutions for specific issues from the field of digitalization within 48 hours. The Innovation Days were hosted by the University of Salzburg in cooperation with the Chamber of Commerce. Whilst the students were able to develop interdisciplinary concepts for practical applications, the local companies benefited from the input of innovative young minds developing in an ever more digitalized world and thus offering a particularly profound understanding of digital applications.

Presentation of the winning project by “bRight”. They managed to impress the panel of judges with a digital solution for daily teeth cleaning.

“The Dentalist” worked intensively on a design for a bonus-malus system.

The members of “Zahnrat” focused on offering patients a less-frightening method of treatment.

EUROPEAN VISITING PROGRAMME WITTEN 2017

Linnea Borglin
Faculty of Dentistry, Malmö University

After being part of the organising committee of Malmö University’s European Visiting Program (EVP) last year, I was eager have my own EVP experience. Only two months after the EVP in Malmö, my prayers had been answered. An invitation to ‘like’ the *EDSA EVP Witten, Germany 2017* Facebook page was waiting for me and after watching a short teaser video, I was sold. *Germany here I come!*

The first three days of the EVP were spent in Cologne, with free entrance to the International Dental Show (IDS) on Friday and Saturday. This was way bigger than expected, but I still managed to visit all of the stalls on my list. On Sunday, before making our way to Witten we were treated to a tour of Cologne. This included a walk across the Hohenzollern Bridge – *where numerous romantics have hung their “locks of love,”* and a visit to the Lindt museum – *a dream come true for chocolate lovers like me, among other sites.* Later that evening, upon arrival in Witten we met our student hosts and the rest of the LOC. Together, we bonded over metres *(yes, metres)* of pizza at the Café del Sol.

On Monday morning we were welcomed to the university by Prof. Zimmer, the head of the Dental Faculty. This was followed by a tour of the university and their very modern clinic. During the week, the academic program included lectures on topics such as Periodontics (Prof. Friedmann) and Endodontics (Prof. Beer) as well as a number of workshops and presentations. We even had the opportunity to assist students and show off our preparation skills in a small contest.

An EVP is not only all about academics, but also about exploring a new culture and having fun. Obviously, no visit to Germany is complete without indulging in authentic currywurst and beer, which we experienced at Eddi's Durst&Wurst Express (a popular spot amongst the students) and during a tour of the Moritz Fiege Brewery in Bochum. In Dortmund, the football fanatics were extremely pleased as we toured Signal Iduna Park, the largest football stadium in Germany and home of Borussia Dortmund. When we weren't sightseeing and exploring, we shared our experiences and relaxed in the sun.

After an eventful week we definitely did not leave empty handed! New memories and new friends were made. But that is not all, everyone received an electric toothbrush from Oral-B and a special burr set and stand with the EVP logo on it from Meisinger.

Thank you for everything Witten LOC!

If you have never attended or organised an EVP I can definitely recommend both. It will be an unforgettable experience!

2ND-7TH OCTOBER, 2017

EUROPEAN VISITING PROGRAMME

KAROLINSKA INSTITUTET STOCKHOLM SWEDEN

Early Childhood Caries in Sri Lanka, A Minor Field Study

Karin Loqvist and Sara Lagerholm
Faculty of Dentistry, Malmö University

We are two third year dental students at Malmö Högskola in Malmö, Sweden. In the summer of 2016, we set out on a journey to Colombo Sri Lanka to complete a Minor Field study proposed as a requirement of a Bachelors thesis. The chosen topic was on Early Childhood Caries (ECC). Several months prior to departure, through a WHO affiliate at Malmö Högskola, we had been introduced to a contact in Sri Lanka who agreed to act as our advisor on the Minor Field study we were to propose.

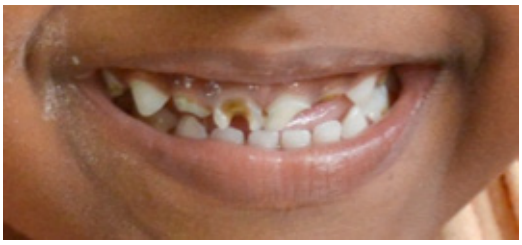
Sri Lanka is known for its biodiversity and beautiful nature, spices, tea plantations and ancient history. It is an island country located in southeast Asia with India as its nearest neighboring nation directly north. Diversity in ethnic populations brings many cultures and religions that are practised among the inhabitants. Sri Lanka has a rich history in Buddhism but is also home to other religions such as Hinduism, Christianity and Islam. The official languages in Sri Lanka are Sinhalese and Tamil with English as a medium linking the two.

In Sri Lanka, universal healthcare and education is provided free to all citizens. Dental care is part of the healthcare system and is thus accessible to all on a need- based level. Even though dental care is free, it is primarily sought in emergent situations. The Ministry of Health has set up a Public Health care provision for dental care to target population groups to improve oral health status among Sri Lankans in addition to attempting to reduce the dental care costs of the health budget. Services are provided on a national as well as on a regional level.

The Preventive Oral Health program run by the Dental Institute in Colombo is one such initiative. It carries out work to target Early Childhood Caries in socioeconomically challenged preschool children. Work is done by offering dental screenings set up at preschools and referring children identified as high risk to a program run at the clinic. As we came to witness, the existence of such programs is much needed, as prevalence of ECC in Sri Lanka is as high as 68.5%.

As part of our minor field study, we attended the outreach program on screening days. The preschool sizes varied from 10 to 330 students and ages spanning 2-5 years with primarily 3-5 year olds screened. An introduction to healthy foods, oral hygiene and the progression of ECC was given to caregivers and preschool teachers before screening the children for caries. We were taken by the efficiency and simplicity by which this was all carried out. Screenings took place in one common room with children and caregivers lining up waiting for their turns. A mirror was used occasionally but no additional light was used, nor were teeth dried upon examination.

Children with signs of ECC defined by white/ brown spots or cavitated teeth were referred to the clinic for inclusion into the Preventive Oral Health program. There, they were examined again and individual treatment plans were set up including restorations as needed, intertwined with fluoride applications, oral hygiene instructions and dietary advice. Some children were included, in an Oral Health Database set up by the program to be used for future epidemiological studies. We were granted access



to the database in an attempt to evaluate the program's effectiveness.

What we quickly came to realize was the complexity of compiling data for such studies. The initial intentions were good but often the examining clinicians were not fully informed about the purpose of the database and failed to record data in a consistent manner. As a result, the incomplete data collection proved difficult to tabulate and use for statistical analysis. For example, only a few study subjects had documented follow up examinations looking at progression of the caries disease. This made us change our original goal from evaluating the effectiveness of the program to attempting to analyze the collected data looking for trends and associations regarding ECC and age, dmft, dietary habits, fluoride usage and etc. The results of the study did indeed offer a fuller picture of ECC in a high-risk population in Sri Lanka.

The average dmft (caries experience) in the study population (17-70 months, median age 49 months); was 4.4. With older individuals, there was an increase in severity of lesions as measured by pulp exposure and an increase in the percentage of individuals affected by pulp exposure. However, the average dmft did not increase with age. For socio-economical factors, there was a correlation of higher dmft and the consumption of fermentable carbohydrates in the form of biscuits ($p=0.012$) but no significance linkage to parents' education levels or to the usage of fluoride/non fluoride toothpaste.

Our conclusion from this study was that the Preventive Oral Health Program in Colombo Sri Lanka, carries out much needed intervention work in socioeconomically challenged preschool children affected by ECC. For participating children, the benefits of such a program may have lifelong effects by increasing their quality of life in ways of mastication affecting nutrition, growth and development, physical appearance as well as a better chance of developing speech and a permanent dentition.

As dental students, the opportunity of carrying out a minor field study in Sri Lanka offered us tremendous experience, which we will treasure. We will always remember the resourcefulness in providing low cost dental care and never take for granted resources available in Sweden. If the future beholds, we will both be interested in community-oriented dentistry aimed at the less fortunate in society.

Information session for caregivers and preschool teachers giving an introduction to healthy foods, oral hygiene and the progression of ECC before screening the children for caries.

Dental screening at a large preschool in Colombo, Sri Lanka.

Preschool children waiting to have their teeth screened.

Caregivers and children lining up for a dental screening.

Screenings took place in one common room with children and caregivers lining up waiting for their turns. A mirror was used occasionally but no additional light was used, nor were teeth dried upon examination.

Join US for a NEW opportunity in Vilnius!

The ADEE "INSPIRED" Program for early dental career development!

ADEE "Inspired" Programme

ADEE is delighted to announce the formation of the INSPIRED programme. The proposed mission of the INSPIRED is to create a dental education community that embraces and encourages new entrants through mentorship, support and the fostering of a sense of collegiality from early in the dental educator's career.

The INSPIRED achieves this mission through the provision of a forum for discussion (both virtual and real), mentorship (online and one-to-one) and advice for early career dental educators as they progress through their careers in dental academia.

INSPIRED will serve as support for EDSA students interested in academic careers or specialisation as many residency programs require teaching in various capacities as a mandatory component.

INSPIRED will have a practical framework focus based on individual interests. In particular, areas of focus will include:

- Research activities
- Clinical and preclinical teaching
- Didactic teaching
- Basic scientists
- Management and administrative roles
- Recommending/assigning mentors

The formation meeting of INSPIRED will be held at ADEE 2017 in Vilnius on Thursday 24th August 2017 at 13:00. At this meeting INSPIRED will develop a 3 year programme of activity.

If you are interested in attending the formation meeting please contact: administrator@adee.org.

GoPerio : a mHealth concept towards personalized, reliable and easy to use oral hygiene motivation with video dentistry

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A few words

GoPerio is a telemedicine and mobile Health (mHealth) initiative investigating the use of video dentistry and automated two-way SMS for oral health promotion and oral hygiene education. It is both a novel concept and an ongoing clinical trial.

The project relies heavily on new technologies, such as cameras, cloud servers and smartphones. The underlying idea is keep accompanying the patient even after he left the dental office in order to keep him on track for a positive health behaviour change.

The concept

The core idea was to develop a new paradigm allowing the dentist to perform efficient and customized oral hygiene education in his daily practice. The concept is versatile and can be used for primary, secondary and tertiary prevention: from routine check-up patients to the prevention of relapse of periodontally maintained patients.

First, the dentist uses behaviour change techniques, based on motivational interviewing, to inform, train and motivate the patient for oral hygiene.
Motivational interviewing, a technique described by Miller and Rollnick in 1983 is a « collaborative conversation style for strengthening a person's own motivation and commitment to change » (Miller and Rollnick, 2003). This ensures a patient-centered approach: the key to success in periodontology is really long term patient motivation and empowerment.

Second, the dentist records a customized video of the oral hygiene routine he recommends to the patient.
This video is captured thanks to a loupe-mounted miniature camera. The video summarizes the key pieces of information for a patient to maintain a good oral hygiene such as a) how to use a toothbrush, b) how to perform interdental care (interdental brushes or floss) and c) how to spot gingival inflammation. This solution provides the patient with a « watch and follow » video that he can refer to during the learning phase of his new oral care routine.

Third, here come the new technologies. The video is uploaded on a secure cloud server and made accessible only by the patient. Thanks to this architecture, the patient has a permanent access to his personalized video and can use it as a reference.
Also, the patient is registered in a computer program operating an automatic SMS system. After registration, the patient benefits regularly from SMS reminders about oral hygiene. These SMS feature information about oral health, contain the link to his personalized video and offer the possibility to confirm adherence to his new oral health routine. If the patient confirms his adherence, he receives a positive feedback. If the patient does not confirm his adherence, additional help is proposed by the means of a new appointment. Because patients can answer SMS, this system is called a two-way SMS system. Over the course of the first 8 weeks, the patient is sent 12 reminders about oral hygiene.

Genesis

The project has been in development since 2015, was awarded a scholarship from the ADEE early 2016 and started recruiting patients from March 2017.

It is DDS thesis project for both authors who graduated in July 2017 from the University of Lyon, France with the highest distinctions. Both theses will be introduced to compete for national prizes and related scientific articles are currently under being drafted.

Experimental design

In order to assess the GoPerio mHealth concept, a randomized controlled trial was designed and implemented. It is a multi centre trial with two hospitals involved: Hospices Civils de Lyon, Lyon, France and Centre Hospitalier Universitaire de Liège, Liège, Belgium.

The trial features a prospective, parallel arms design with two groups. In the innovation group, patients benefit from an oral hygiene motivation, a personalized video and cloud access, and the automated two-way SMS system. In the control group, patients solely benefit from the oral hygiene motivation.

The follow-up is established at 8 weeks as this is a proof of concept study. 3 visits are necessary. The first visit is for patient motivation and recording of the video. The second visit is for supra-gingival scaling and polishing. The third and final visit is to gather last clinical data for the study.

Main patient criteria include : ≥ 20 teeth, ≥ 4 premolar-molar interdental spaces, ≥ 18 years, possession of a smartphone, no history of active periodontal therapy less than a year ago, last tooth scaling more than a month ago, no ongoing orthodontic treatment, no removable prosthesis, no antiplatelet drug, no anticoagulation drug.

Patients are randomized and a stratification on gender, tobacco and research centre is used. Allocation ratio is 1:1. All data are maintained in an electronic case report form operated by data managers.

The primary outcome is the between group comparison of plaque index (Plaque Control Record, O'Leary 1972) after 8 weeks of follow-up. Secondary outcomes include bleeding on probing, chair side time spent, patient overall satisfaction, patient motivation. Patient-reported outcomes are measured using questionnaires previously described in the literature.

Accounting for all parameters, including patients expected to be lost to follow-up, the sample size if of 86 (43+43) with the hypothesis that the novel mHealth strategy allows up to 15% of plaque reduction.

Dentists performing oral hygiene motivation are blinded until the end of the first visit. Outcomes assessor are blinded until the end of the trial. Participants are not blinded.

The trial is registered online on the database ClinicalTrials.gov under the identifier NCT03109808. More information can be obtained from this database.

Current status

The clinical trial is ongoing since March 2017 and 22 patients are involved as this magazine goes to press. Both centres in Lyon and in Liège are actively recruiting patients.

The project is supported by over 30 collaborators or sponsors from a dozen of academic institutions or companies.

First elements from patient satisfaction are very positive. Patients favour the mHealth solution because the video is self-explanatory and the two-way SMS system delivers interesting pieces of information on oral health.

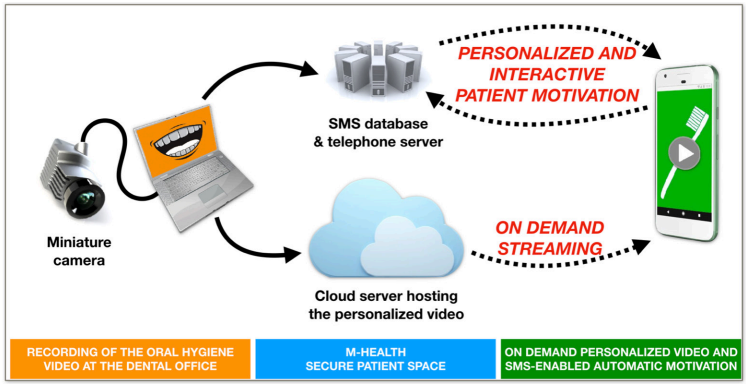
The concept was welcomed positively by younger students as an opportunity for informal learning as sessions of patient education are open to younger students to observe and learn the skills.

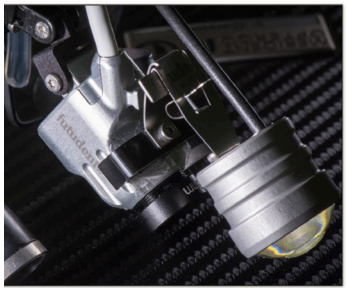
Next moves

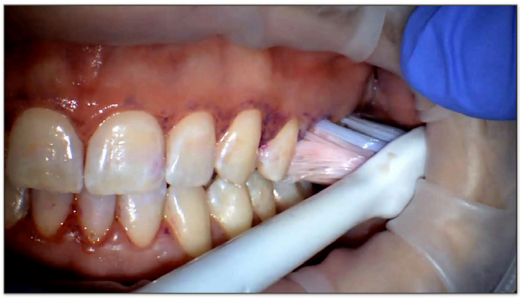
To pursue development of the GoPerio concept, we aim at reinforcing our two-way SMS system. It will be enriched with more messages, developed in collaboration with patients and experts in behaviour change. Additional risk factors will be integrated into the program, such as nutrition, physical activity, tobacco and substance abuse, and alcohol abuse. The approach is that of the common risk factors between general health and oral health.

Eventually, it could lead to the development of an elementary chatbot capable of providing real-time advice for the preservation of oral health and general health, such as smoking cessation.

For more information, follow us online at:
Facebook.com/GoPerioTrial







7th Virtual World Congress of Dental Students

Tina Tomić
School of Dental Medicine, the University of Zagreb

This year's 7th Virtual World Congress of Dental Students was held from 17-19th May 2017 via the virtual room provided by the University Computing Centre SRCE. The offline and online opening ceremony were hosted by Ema Prohić (president of USDM) and Tina Tomić (member of the Organising Committee).

On the first day associate professor from School of Dental Medicine, Zagreb University, Ivica Pelivan gave a lecture on the topic **"CAD/CAM superstructures in implant dentistry"**. Following that lecture, Deniz Findik, a student from Yeditepe University Istanbul shared her story in a presentation called **"Journey of a Dental Student".**

On the second day of the Congress, Davor Ileš (assistant professor School of Dental Medicine, Zagreb University) delivered a lecture on the topic **"Effects of Mouthgards on Athletes Performance"**. Maja Sabalić from King's College London shared her perspective of research in dentistry **"Research as an alternative career in dentistry: Perspective of a KCL PhD Student".**

On the last day professor Pedro Colino- Gallardo from Miguel de Cervantes European University Valladolid Spain contributed to the congress with a lecture **"Facial orthodontic, how our clinical decisions can change the face of a patient".**

Representatives from dental student associations EDSA (Valentin Garyga), IADS (Lucas Caponi) and AfroDSA (Abanob Yosry) as well as the CEO of Dentisttheworld (Danijel Domić) also participated in the congress.

Participating students, undergraduates and postgraduates, presented their research papers and the best received awards. The international Jury members for this year's Congress were Professor Patricia Reynolds (King's College London) and Dr. Cagri Burdurlu (Yeditepe University Istanbul).

In the Undergraduate category:

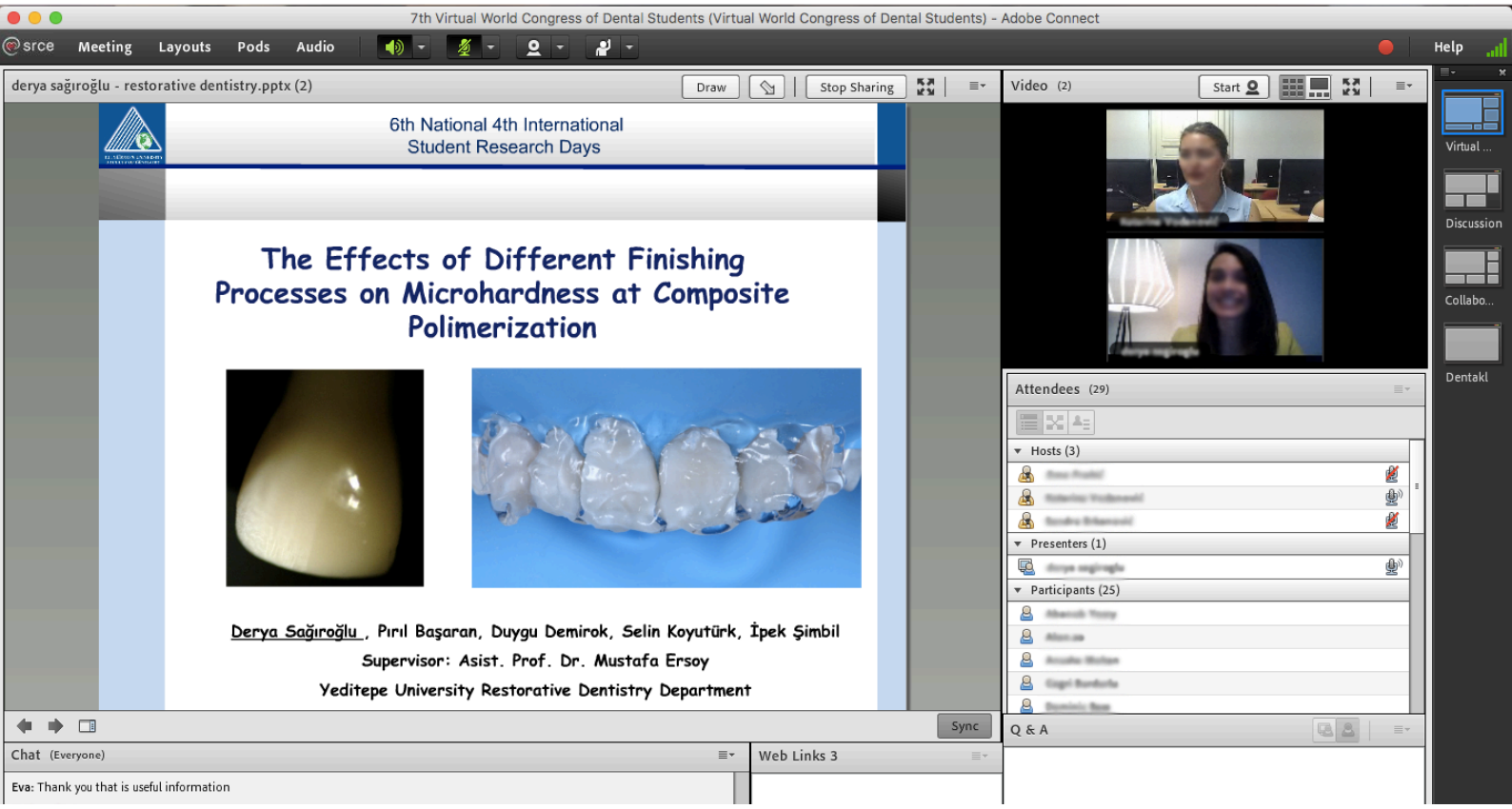
- the 1st prize won by Tatiana Cortes (Columbia) with the paper "In vitro Expansion of Human Stem Cells from Apical Papilla"

- the 2nd prize won by Mateja Suk (Croatia) on the topic **"The Efficacy of PIPS in the Removal of Filling Remnants from the Root Canal after Rotary Retreatment"**

- the 3rd prize won by Juan Sebastian Pinzon Afanador (Columbia) on the **"Viability and kinetic proliferation of hMSCs expanded in a hollow fiber perfusion bioreactor".**

In the Postgraduate category:

- the 1st prize won by Dr. Anusha Mohan (India) with the paper **"Dentists' Knowledge, Attitude and Practice in Treating Patients Taking Oral Antithrombotic Medications, A Survey".**



"MI" inspiring future oral healthcare?

Professor Avijit Banerjee
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King's College London Dental Institute

First published in British Dental Journal:
Banerjee A. "MI" inspiring future oral healthcare? Brit Dent J 2017; 223 (3): p133-135
Published online 11th August 2017

In 2013, my dear friend and BDJ editor, Stephen Hancocks kindly invited me to author an opinion piece outlining the concept of minimum intervention (MI) dentistry and the challenges it might face in gaining acceptance in mainstream dentistry1. Four years on, I am delighted and honoured to be asked to co-ordinate, co-author and present this MI-themed BDJ issue as its guest editor, with a selection of quality manuscripts from national and international renowned professionals and dear colleagues with an acknowledged expertise in MI Dentistry. As can be seen from the range of papers published in this BDJ MI themed issue alone, the clinical academic evidence for MI Dentistry is now widely accepted and considered to be mainstream in the profession. The advances in restorative biomaterials, clinical operative techniques / technologies, behaviour management and another form of MI, motivational interviewing, are all enabling oral healthcare teams to deliver successfully this contemporary approach to achieve and maintain oral health and long term wellbeing.

Minimum (or minimal) intervention (MI) oral healthcare, with particular respect to dental caries management, in 2017 is now clearly on the professional, public, industry, UK government and even international (FDI and World Health Organisation (WHO)), radar 2-5. As knowledge is continually expanding along with scientific and clinical evidence for the MI approach to patient-focussed, team-delivered oral healthcare, it is clear that all stakeholders (the oral healthcare profession, public, oral health / dental industry partners, dental educators and healthcare regulatory bodies) must now fully engage with each other to help implement its delivery and make "MI" the norm and eventually, the term "MI" itself, obsolete. As with instigating any major change within long-established systems, there is some understandable concern about how to implement MI clinical care logistically within the current National Health Service (NHS) and other regulatory contract frameworks. The practise of managing dental caries has evolved over recent times and nowadays requires an alternative professional skill set to be appreciated fully and used effectively. This is primarily due to two factors: a change in patient attitudes with regard to their expectations of desired outcomes and a better understanding of the caries process and its prevention and management within the profession itself.

Regarding the latter point, the traditional surgical approach of treating all patients with caries in the same fashion, cutting often over-sized cavities and placing restorations is neither a cure nor even the correct long term management strategy for this most prevalent of non-communicable diseases 6,7. The cure for dental caries, or its control, originates from long term preventive actions and behaviour change of the patient, guided and ably assisted by all members of the oral healthcare team (dentist, nurse, therapist, hygienist, extended duties dental nurse (EDDN – oral health educator), reception staff, practice manager) giving the same oral health message. Minimally invasive operative repair of the tissue defects/damage as a consequence of the continued, uncontrolled caries process of course plays an important part in overall management, but should not be the focal aspect of care provided.

"MI" definitions...

Minimum(al) Intervention care describes the holistic team-care approach to help maintain long term oral health with preventive, patient-focussed, behaviour-related care plans combined with the dutiful management of patients' needs, desires and expectations. The patient (and profession) must understand that dental caries is a lifestyle-related non-communicable disease which is ultimately the patients' own responsibility to control and prevent, aided and abetted to a varying extent, by the full oral healthcare team. The four overlapping and interlinked phases of the minimum intervention care plan have been published previously and include detection / diagnosis / risk assessment / care planning, disease control and prevention, minimally invasive operative management and recall phases. [1,6,7]

Minimally Invasive Dentistry is included as part of this minimum intervention care plan. Dental caries should not be "treated" as if it were gangrene, with its complete surgical excision (including provision of an extensive healthy margin), a tenet underpinning past traditional operative teachings. Giving carious tissues the opportunity to arrest, remineralise and, when uncontrolled progression is observed, the use of a biologically selective tissue-preserving surgical approach to caries removal must now be considered the norm[8,9] . This contradicts the traditional surgical approach of the iatrogenic creation of standardised, often unnecessarily over-sized cavity shapes whose dimensions are dictated by the mechanical properties of the materials used to restore them. Consideration must be given to the "golden triangle" of minimally invasive operative caries management, where the three factors of tissue histology, dental biomaterials science and clinical handling of the patient and materials, together will permit the successful implementation of minimally invasive dentistry in all patients.[1,6,7, 10-12]

It's all about "MI" behaviour and willingness to change!

Even though there is a burgeoning knowledge and acceptance of the MI philosophy in health care per se, there are persistent barriers blocking its successful implementation across the oral healthcare sector. If one assumes any "MI" change will occur incrementally, as opposed to a sudden radical overhaul to existing systematic frameworks, then solutions will lie in enabling small practical changes in both the profession and public mind-sets that will gain traction and ultimately, exponential rapid adherence across the board. Fundamentally, the primary barrier to MI implementation is behaviour change in both the profession and public, as well as other stakeholders including dental industry partners, educators and regulatory bodies. Even though all stakeholders understand and agree in principle with the MI rationale and approach, do people really want to change from the current system of oral healthcare delivery? An appraisal of behaviour management rationale indicates it can

be deconvoluted into the principle constructs of personal *capabilities*, *opportunities* and *motivation*, each being applied to all the relevant stakeholders listed above[13].

Are "MI" stakeholders capable of change?

From the dental profession's viewpoint, the answer is undoubtedly yes. Contemporary undergraduate curricula embrace "MI" teaching internationally, with a focus on risk assessment, patient behaviour / attitude management skills and non-operative prevention [14-16]. New MI technologies and techniques will also need to be experienced and practised on postgraduate continuing profession development (CPD) and degree courses for those working not having benefitted from the latest UG education. An innovative flexible-learning Masters programme in Advanced Minimum Intervention Dentistry (AMID) at King's College London Dental Institute at Guy's Hospital, London, UK now provides a comprehensive PG education, accessible globally to practising dentists and dental therapists (use internet search engines with the keywords "KCL AMID" for more information)[17]. It is hoped that this Masters programme will promote the development of an UK-wide / global MI practice-based research network to help provide the much-needed physical "real life" clinical evidence to corroborate this logical healthcare philosophy.

The public awareness of general health and wellbeing is ever-increasing with society taking greater interest and responsibility in overall fitness and preventive health measures. Oral disease distribution is being polarised gradually by demographics, affected by socio-economic determinants. National public promotions to publicise general health issues are resulting slowly in beneficial attitude change. This indicates the capability for change in this regard. Oral health, however, still tends to be given a low prioritisation by the public. Greater efforts are required by the profession and regulatory bodies to engage with, and obtain feedback from, the public, highlighting the significant quality of life improvements that good long term oral health would bring individuals directly and indirectly in populations. Bringing the public on board has to be seen as a long term goal for both the profession and the government. There must be a drive to increase the priority of maintaining oral health in the general healthcare stakes whilst at the same time diluting the premise of many who believe it is the dental profession's responsibility to do this, rather than their own. Ultimately, there is no simple panacea for all oral / dental disease and a collective, concerted effort is required from the public and profession. The MI team network approach centred on the patient's long term care and wellbeing must be emphasised along with the need for regular maintenance and review consultations to maintain the biologic success of treatments and continued favourable oral health.

Do "MI" stakeholders have the <u>opportunity</u> for change?

The National Health Service (NHS) continues to fund significant proportions of the dental care provided to the UK population. It attempts to provide a system to encourage the treatment of disease, to distribute as fairly as possible the provision of dental services to the wider community within the constraints of ever more stringent financial budgeting, to remunerate the healthcare providers and help regulate them for the safety of patients [18]. Remuneration models in the past have been based around numbers of patients treated / operative procedures carried out as these were quantifiable outcomes on which to base payments and regulate service. However, this approach risks actively

encouraging dentists to treat patients perhaps more frequently than necessary and operate too invasively to the ultimate detriment of patients, as it is these very outcomes that are rewarded. NHS dental contracts have come and gone, with the latest prototype practices under trial offering hope that the system will begin to value non-operative disease control and prevention in the general population at least as equally as operative interventions. A susceptibility (risk) assessment-based approach to disease prevention and targeted patient management should be heralded as a step in the right direction. However, care needs to be taken to ensure capitation and activity requirements are both achievable and practical, supporting both patients to improve and maintain their oral health as well as sustainable oral health practices. As patients and their oral health status are different and are prone to change over time, so the ideal contract framework should also be. For example, healthy, low-risk individuals should have different care pathways (with respect to the numbers/frequency of consultation appointments, use of different team members to manage their oral healthcare delivery, use of adjunctive home-care prevention-based products / technology etc) compared to varying high-risk groups of the population, who would require more targeted, practice-based, resource-intensive management. The profession should be regulated and remunerated accordingly, with a mix of capitation funding for longer term team care, as well activity payments in certain clinical circumstances. This has been trialled in the latest proto-pilot dental contract scheme where the UDA targets in practices have been reduced to allow more time to be given for prevention as opposed to interventive treatment, alongside blended capitation / activity models. "MI" oral healthcare clinics / teams should endeavour to change the risk level of their patients, from red (high risk) to green (low risk) patients by team-delivered, non-operative preventive regimes helping patients to take more care and responsibility for their own oral health. In so doing, team practices will be able to increase their patient list sizes, optimise patient throughput using all team members, with a concomitant reduction in the need to carry out NHS Band 2 and 3 treatment. Reducing the incidence of caries in their patients will ultimately limit the need to do further complex restorative treatments to those in specific need and caries prevention will become the primary goal. Workforce modelling will be required to enable this to occur along with suitable regulatory procedures in place to record accurately the patient care outcomes delivered. Sustainability will require honest professional self-reporting and the regulatory bodies working together with the profession, to help understand and appreciate the flexibility and complexity of such contracts when tailoring suitable oral health care to individuals as well as populations. A more blinkered, tunnel-vision approach in this relationship will surely fail. If MI oral healthcare is offered as the simple alternative to patients whilst being profitable and sustainable to the profession also, it will become the mainstay in general dental practice.

With the proposals discussed above, it is evident that the traditional dental practice business model must evolve in order to be able to support the successful MI oral healthcare practice of the future. The general dentist must learn to use the skills of their team: nurses with oral health education certification (EDDNs), hygienists, therapists and practice managers / reception staff must all communicate effectively the same MI message. The dentist co-ordinates patient-focussed care and devolves various aspects of non-operative prevention and control to those dental care professionals and EDDNs whose time may be better spent working with the patient in this regard. Surgery time is the most precious and costly commodity and this core business needs to be managed at a practice level. There are an increasing number of "MI practices" around the country that are utilising this model successfully both financially as well as clinically. Local and regional networks will enable the uptake

of best practice as well as communication to consolidate care delivery. The role and significance of dental payment plan specialists will surely increase as the long term patient-centred prevention of disease underpins their very existence.

Are "MI" stakeholders motivated to change?

This is, quite literally, an emotive subject depending on the viewpoint of the stakeholder! Why does anyone want to become an oral healthcare professional in the first place? One would hope the key response would be to provide high quality, appropriate, ethical care to those in need of it. The minimum intervention care philosophy fulfils this tenet. Practitioners also need to make a living, strike an optimal work : life balance and therefore must be rewarded financially for keeping their patients healthy, as opposed to simply "treating" disease. Industry partners work traditionally in a business where product sells, profits are made and shareholders are kept happy. Many forward-thinking dental companies, along with the British Dental Industry Association (BDIA) are encouraging promotion of the MI philosophy, working together with the profession in research and development of new materials / products to promote and benefit MI care as well as offering opportunities for patient and further postgraduate professional education. Clinical academic research is providing the evidence to support MI oral care and educators have the resources to challenge the traditional and often outdated views manifest in dentistry. Dental students are being actively encouraged and motivated to question the traditional approaches to oral disease management. The public are becoming gradually enlightened on the benefits of a preventive based approach to health care. Their demand and expectations for contemporary high-quality care will also fuel more long term change. The real question is whether the regulatory bodies / government are motivated to change. The absolute outcome of successful MI care is difficult to measure in monetary value alone, whereas the past and current system of itemising treatments is easy to monitor, regulate and cost. However, the outcome success of MI care is evident in the improved comfort, quality of life and the socio-economic benefits experienced by those with good oral health. It is clear that significant financial investment (or redistribution of existing funding) will have to be made at the outset of implementing MI oral healthcare, with the benefits only being evident several years down the line, indeed, a political lifetime [19-21]. The socio-economic improvements in quality of life and population wellbeing are nearly impossible to measure and cost quantifiably, but have a significant part to play in the successful outcomes of MID.

Summary

With the United Nations Minamata Convention entering into force on the 16 August 2017, these are very exciting times for the oral healthcare profession as a whole. Changes are coming thick and fast and minimum intervention oral care is a paradigm shift underpinning these changes. In the publications in this themed issue, experts in their disciplines have written about a series of MI-related topics, ranging from medico-legal aspects to minimally invasive restorations, business modelling for future practice to caries susceptibility assessment. The relevant stakeholders (oral healthcare service providers / educators / researchers, government healthcare regulators, public and dental industry) must work in partnership to move MI care forwards as the desirable goal for dentistry now and in the future. More use of public consultation by all stakeholders may be enlightening and highlight the triggers that patients will demand and expect to enable and maximise MI oral healthcare delivery. Indeed, prevention may be more appropriately termed, "engagement" to ensure stakeholders' responsibilities

are fully appreciated and valued. Its careful implementation into the mainstream will bring long-lasting rewards for both patients and all oral healthcare professionals and will lay down a secure foundation for optimising the oral and dental health of future generations.

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At War With Sugar

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According to Sheiham (1983), dental caries is the most common chronic disease in the world and is responsible for 6-10% of total health costs. Along the years there have been many studies carried out to uncover what causes this highly prevalent disease. In a study conducted by Turku in Finland in 1970, it was found that sucrose consumption is the main culprit for dental caries. Sucrose which is a naturally occurring carbohydrate that is refined in industrial processes and added to all kinds of food products and commonly referred to as sugar.

By focusing on changing a number of factors that affect a large number of diseases, will bring about a reduction in systemic conditions (Sheiham & Watt, 2000). Sugar not only causes tooth decay, but also cardiovascular complications, diabetes, and obesity. As health practitioners we need to promote healthy eating and a reduction in sugar consumption, not just for dental caries control but also for systemic health benefits. Our diet advice needs to be interdisciplinary and tackle the human body holistically.

It is important to adopt a **life-course approach** to assess physical and psychosocial exposures on chronic diseases at different stages of life. Children are not exposed to the same food and drink resources as an adolescent. Young children eat what they are given by their parents or carers, hence our advice should target mainly the parents or carers. However as children grow older and become more independent, they become exposed to a wide range of choices, and they need to know how to choose the healthy option. Hence it is crucial to adopt good primary prevention at an early age for a favourable trajectory and good behavioural capital (Nicolau et al. 2003, 2005).

Sugar is found in 80% of the food we eat hence it is not easy to fully abolish it from the diet. However it is important to know where to look and what to buy. Sugars can be hidden in plain sight, and that is when it gets tricky. **Hidden sugars,** are found in everyday items such as sauces, preserved vegetables, “healthy juices”, cereals and cereal bars, and frozen goods to name a few items. We need to change the false perception that sugar is found in just desserts and soft drinks. Our role is to address this issue with our patients and enable and encourage them to read food labels and actually realise that most food items both sweet and savoury, tend to contain sugars. When analysing ingredient labels one could find high levels of free sugars. **Free sugars** are added for various reasons, such as alteration of taste and texture, addition of colour and flavour, and also as a preservative to increase the shelf life.

Nutritional labels only indicate the total sugars, which include all mono- and disaccharides but omit oligosaccharides found in the so-called 'sugar-free' food items such as yoghurts and chewable vitamins. Studies indicate that these types of oligosaccharides are potentially cariogenic and so should not be excluded from food labels.

How much sugar should be consumed according to the WHO (2015)?

- Children up to 4 years: 16g of free sugar
- 4-8 year olds: 12.5g
- Adult: 25g

Our allies!

According to Marinho et al. 2009, toothpaste with fluoride reduces the DMFT (decayed, missing, and filled teeth) by 24% when compared to absence of fluoride. Fluoride works to control early dental caries in several ways. Fluoride concentrated in plaque and saliva inhibits the demineralization of sound enamel and enhances the remineralization of demineralized enamel. Since the introduction of fluoridated toothpaste, caries incidence has decreased worldwide despite the increase in sugar consumption. Other dietary factors that aid in prevention of caries include; the presence of buffers in dairy products, and sugar-free chewing gum (increased salivary flow and buffering action).

It is important to ensure that we give comprehensive dietary advice such as the consumption of sugary food after a meal rather than in between meals, to reduce incidence of caries. According to a study carried out in Sweden (Vipeholm, 1945-53), sugar intake even in large amounts had little effect on caries increment, if it was ingested up to a maximum of 4 times a day with meals. Sugar consumption between meals was associated with a marked increase in dental caries.

Primary prevention should be our go to aim when treating any patient, regardless of age and gender. Primary public health measures from a dental persepctive include the use of topical fluoride application, consumption of fluoridated water, the use of fluoridated toothpaste, fissure sealants and topical remineralising agents.

Lets win the war against sugar one tooth at a time!

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White Flowers, your scientific way to Russia.

Leisan Saleeva
Kazan State Medical University

Between the 11th-13th of April this year, Kazan State Medical University held the 5th All-Russian Scientific Medical Research Forum of Students and Young Scientists with International Participants - *"White flowers."* This forum united the best minds and talents from all corners of Russia and various European countries. The forum was rich with events, lectures and presentations.

Participants took part in an active discussion about problems and prospects of modern medical science at a round table which was one of the highlights of the forum. It was entitled "School of a young researcher: yesterday, today, tomorrow".

"The Olympic Games," is another major highlight. Six different teams of students competed in the subject of Medical History on the second day of the scientific forum. After a welcome speech by the the six teams battled it out to see who could answer the questions best, solve medical riddles and discover the mystery of the black box. The "Games" featured first ever All-Russian Olympic Games on Russian as a foreign language and the first Dental Olympic Games among Universities of the Middle Volga scientific and medical cluster. While the dental students were showing off their skills and competing in dental surgery art, our foreign students were fighting to prove their expertise on the Russian language.

During the final morning of the forum, ALL participants presented their research. Over 800 oral reports were heard and 87 posters were considered from students and young doctors from more than 30 Russian cities and other European medical schools.

The visiting guests were also treated to an informative excursion called "Historical Kazan." This even featured a literary competition *Notes of Young Doctors* in the museum of E.A. Boratynsky, where everyone could absorb the creative atmosphere and look at the world and the profession of the doctor from a poetic side.

For more information, or if you would like to take part in "White Flowers," get an invaluable experience and be impressed by Russia, then check out the "White Flowers" webpage: http://sno-kzngmu.ru/en/

“I have had the opportunity to travel around the world and share my experiences with many of my dental student friends whom I have met at different conferences: Istanbul, Szeged and finally, Coimbra - a magical place, where I heard my mother tounge in the school canteen. You are right - it was a girl from Russia, Leisan. After becoming friends and EDSA roommates she invited me to come to Kazan to take part in “White Flowers.”

In preparation for the conference, I worked on my research project for days and nights because I’ve heard that Russian education and research projects are on an impressive level. I was right, the presentations were incredible and I was inspired by many of the Russian students. I was shocked when I was rewarded with the second place diploma.

Besides the educational part of my trip, I fell in love with Kazan, a beautiful city. Traditional food endlessly filled our tables, we sang lots of karaoke and went on an excursion to the legendary mosques Kul-Sharif and Kazan Kremlin. These are some of the things I will never forget...

With Love,
Olga Palushina, Latvia”

“I have never considered travelling very far in order to attend a dental congress. Nevertheless, I accepted the invitation to “White Flowers” and despite the long train journey from Moscow to Kazan, I haven’t regretted it.

This congress is really popular amongst students and young doctors in Russia. I met a lot of young people eager to learn new things and share knowledge. We had oral presentations of our research work, but international students could also represent their country by giving certain insight to the audience about where are we coming from.

Besides the dental part of the congress, the organizers took us on a bus tour of the city. We were able to see the beautiful city of Kazan, and believe me, there are a lot of things to see. We even attended a cultural festival made by students from all over Russia.

The end of the congress was marked by an awards ceremony where the best works received awards and more importantly, we all got memories for life.

I hope I can visit Kazan and “White Flowers” again...

Zikret Smajlovic, Bosnia and Herzegovina”

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