DENTAL TRIBUNE

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Career development opportunities…

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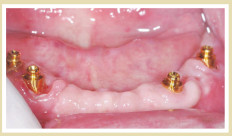

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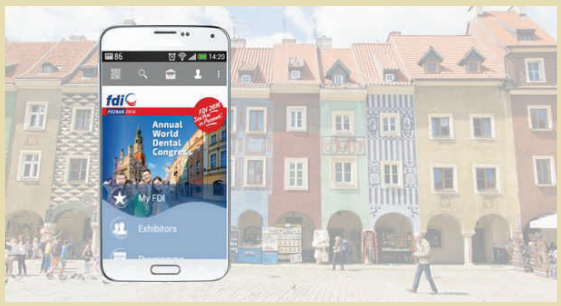
Mobile app for Annual World Dental Congress

DT International

POZNAN (POLAND) - One month ahead of its Annual World Dental Congress, the FDI World Dental Federation has introduced a mobile app exclusively for the event, which will be held in Poland this year. According to the organisers, it is a useful and convenient tool that will provide participants and exhibition visitors with all of the necessary information about the congress and help them structure their event experience individually. The smartphone app will give attendees access to information about the scientific programme and allow them create their own schedule, add notes on the sessions in advance or in real time, and find their way around the exhibition area. It is available in several languages, including English, Dutch, French, German, Italian, Polish, Portuguese, Spanish and Swedish.

The 2016 Annual World Dental Congress will be held at the Miedzynarodowe Targi Poznanskie, the Poznan International Fair, from September 7 to 10. **SYMPOSIA**: Dental Tribune Study Club has



organized a symposia at the FDI Annual World Dental Congress, Poznan.

All lectures to be delivered at the symposia by experts in the field provide an invaluable opportunity to learn from opinion leaders, while earning ADA CERP C.E. Credits.

In this regard, a programme has been developed that is both diverse and engaging, with every lecture offering the practical guidance that one seeks to take

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IAMRA urges PMDC to improve quality of education or face the music

DT Pakistan Report

ISLAMABAD - Thousands of Pakistani doctors face a threat of a comprehensive ban on practice and study in the United States and Europe in the wake of IAMRA's (International Association of Medical Regulatory Authorities) repeated warnings to the PMDC that it should help improve the quality of medical education and close down all illegal medical colleges in the country.

According to media reports, the IAMRA had, a few months, back asked the PMDC to improve the quality of medical education and shut all illegal medical colleges. The IAMRA had reportedly warned that in case of non-compliance, it would ask the governments of the United States and all the European countries to impose a ban on the Pakistani doctors' work or study in their respective countries.

Confirming that that the IAMRA had issued the warning, PMDC president Prof Shabbir Lehri said that the Council fought the case before the IAMRA and got one-year relaxation for improving the quality of medical education in the country.

Pointing out that the PMDC had sealed illegal or unauthorised medical colleges, he deplored that in the past those medical colleges were allowed to function, which brought international embarrassment to Pakistan. The IAMRA comprises almost all the medical regulatory authorities in the world. Hardly, any country can entertain the doctors from another country without the approval and authorisation of the IAMRA.

According to sources, the Pakistani negotiators spoiled the case before the IAMRA, as they concealed the fact that the PMDC was not actually functional since 2012. The PMDC, at that time, was being run by an ad-hoc committee. And, therefore, it did not have the authority to recognise or seal the medical colleges.

Moreover, taking an undue advantage of the situation, countries like India got a maximum number of its doctors adjusted in the US and the Europe. The Pakistani doctors had once been very influential and instrumental in IAMRA. Prof Syed Sibitul Hasnain was member of the management committee of the authority. Former PMDC registrar Dr Ahmad Nadeem Akbar was also the member of IAMRA and the World Federation of Medical Education.

Sources said problems surfaced

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Don't seek admission to unregistered medical & dental colleges: PMDC

DT Pakistan Report

ISLAMABAD - The Pakistan Medical and Dental Council (PMDC) has advised students to get admission in only recognised and registered medical and dental colleges.

According to an official of the PMDC, all such students could check the list of registered and authorised medical and dental colleges from the PMDC website. He said that no medical or dental institution was allowed to train students which was not registered with the PMDC.

He said that all the institutions which were advertising admissions of medical and dental colleges must follow the seat allocation prescribed by the council in order to avoid any inconvenience in future. He added that passed out medical dental graduates without having students registration with the PMDC would not be registered as medical and dental practitioners.

RCPS appoints Prof Ghani as Dental Adviser

DT Pakistan Report

PESHAWAR - The Royal College of Physicians & Surgeons, Glasgow (UK) has appointed Prof. Dr. Fazal Ghani as its Dental Adviser from Pakistan for a three-year term in recognition of his services in dental education, dental research and dental health. As such Prof. Ghani has become Dental representative from Pakistan as a member of the International Advisers Network of the prestigious Royal Surgical College in the United Kingdom.

A short biography of Prof. Ghani has been posted on the Website of the Royal Surgical College Glasgow. As an international adviser to the Royal College, Prof Ghani will frequently hold online meetings, besides undertaking visits to the Royal Surgical College, Glasgow.

Prof Ghani did his BSc and BDS from Peshawar, M. Sc, PhD (from London) and FDS & RCPS (from Glasgow). He is currently working as Professor and Head

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Career development opportunities and support in a corporate practice

By Dr Sarah Weston

Having worked for most of my career in the independent sector, I was aware of the negative press surrounding corporate dentistry before I joined the mydentist group, but I have to say that those rumours were all unfounded. In fact, I feel quite passionately that new graduates are still being given that negative message. As a company we should try to give the next generation the facts and engage them directly.

Corporate dentistry is better than its image, says Dr Sarah Weston.

It has been 20 years since I qualified from Guy's Hospital. Since then, I have worked in Australia, New Zealand and the UK and across most areas of the profession, be it as a house officer in New Zealand, in NHS and private practices, or as a partner and an associate. At my current practice in the small market town of Woodbridge in Suffolk, we predominately perform NHS dentistry, but do offer a range of private services.

With an interesting demographic of patients, we have the opportunity to utilise all our skills. We routinely see 25–30 patients a day and I am lucky that I work with a really great team and most of us have worked together for a while now. It is good to be with other people who understand the stress and strains of the job and can have a good laugh together at times.

I work full time, so my days tend to be fairly similar. I start with a coffee then move on to checking day lists, patient records and laboratory work, etc. I hate surprises so I like to know what the day will hold.

Most of my days are spent performing a mix of examinations and treatments, with the odd interesting case thrown in. I also offer facial aesthetic procedures and have recently been on the Denture Excellence course. It is great to be able to offer such a wide choice of treatment options to patients and the denture excellence has really taken off. It is an area I really enjoy, as a good denture can make so much difference to someone's quality of life. I am hoping to undertake an implant restoration course soon as well, so I will be able to restore the implants placed by colleagues at local practices in the group.

Since working for the company, I have become a mentor too, which has definitely been a highlight for me. It is a role I really enjoy, as after 20 years in the job, it is satisfying to pass on some of my experience to the younger generation. I had a great vocational training instructor when I started and I hope I can be as good to new associates as he was to me. It is a job that is mutually beneficial: it is extremely rewarding to see a mentee improve and gain in confidence and it does the same for the mentor.

Within the company, we are fortunate to have a high level of support from practice and area managers through to clinical support managers and clinical directors. They are there to help prevent small problems from becoming larger ones. It is true that the red flags and key performance indicators can feel intrusive at times, but I do feel they are there to help clinicians above everything else. A visit from the clinical support manager should be seen as a positive thing and I am fortunate to have a great manager in my area. One thing I have learnt is that it can be lonely in the independent sector and there is no one looking out for you in the same way. I think the support network available is the real strength of corporate dentistry.

Furthermore, we are incredibly fortunate to have the online academy and the reminder to complete CPD when it is required. This can be a burden for dentists and if there is any way to make it easier then we should be grateful. My practice manager keeps us up to date on when our CPD is due and the opportunity to complete it online is

Continued on page 15

Taking brushing selfies could help improve oral health

DT International

OHIO, USA/CHENNAI, INDIA - Smartphone video selfies are a popular means of communication today and they are increasingly being used in the medical field to assess, monitor and determine the progression of disease. For the first time, the findings of a new study have suggested that recording video selfies while brushing could help patients improve their oral health care techniques, even within a short period.

In the study, four dental student interns recorded five video selfies each while brushing at home over a period of 14 days using smartphones mounted on stands.

At baseline, several surfaces within sextants were not being brushed—notably the lingual surfaces of maxillary and mandibular anterior teeth and the palatal aspect of the right maxillary posterior sextant. After the intervention, all four participants had developed toothbrushing strokes that covered all their tooth surfaces.

Overall, the researchers saw an increase in the accuracy of brushstrokes, an increase in number of strokes and an overall 8 percent improvement in toothbrushing skills.

"Often, toothbrushing is learned and practiced without proper supervision," said Dr. Lance T. Vernon, a senior instructor at the Case Western Reserve University School of Dental Medicine and co-author of the study. "Changing toothbrushing behaviors—which are ingrained habits tied to muscle memory—can take a lot of time and guidance."

"Our study suggests that, in the future, recording these selfies can help shift some of this time investment in improving brushing to technology," Vernon added. "Patients can then receive feedback from dental professionals."

Recording video selfies while brushing could help improve toothbrushing skills.

The researchers concluded, however, that further investigation using a larger sample size is needed to thoroughly assess the effectiveness of this approach in order to improve toothbrushing skills and better understand the role of proactive interference (when learning a new behavior is hindered by knowledge and habits associated with an old behavior).

The study, titled "Using smartphone video 'selfies' to monitor change in toothbrushing behavior after a brief intervention: A pilot study," was published in the May/June issue of the Indian Journal of Dental Research. It was conducted at the Case Western Reserve University School of Dental Medicine in Ohio in collaboration with the Ragas Dental College and Hospital in Chennai.

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To floss or to brush—that is the (interdental) question

By Marc Chalupsky

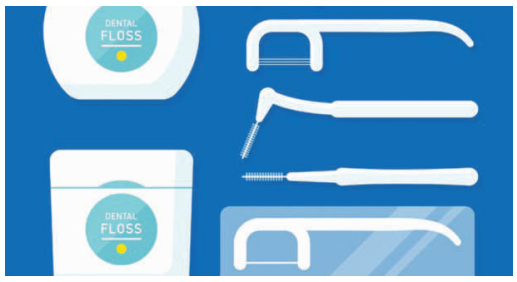
LEIPZIG, GERMANY - Should dental floss still be used as a tool to combat plaque, caries and periodontal disease? After almost 40 years, the US Department of Health and Human Services and Department of Agriculture have removed their recommendation to use dental floss from their latest Dietary Guidelines for Americans. And the dental world discussed a recent report which made worldwide headlines and concluded that no scientific evidence has proven the effectiveness of flossing. So: What are alternatives for dental professionals? Dental Tribune Online posed these questions to three dental hygienists.

For a long time, dental professionals have recommended daily flossing as a necessary part of health care. However, the Associated Press reviewed 25 prominent studies that compared the combination of toothbrushes and floss and their effectiveness in plaque removal. As Dental Tribune Online reported earlier, the investigation found only weak and unreliable evidence. According to the article, some studies were not valid since they included very few participants and had a short duration of only a couple of weeks. When asked for a statement, dental floss manufacturers were not able to provide scientific evidence even though many of the previously mentioned studies were funded by this industry. In the meanwhile, manufacturers have already announced new funding for comprehensive research to determine the effects of flossing on oral health. As periodontal disease and caries develop over months and years, future research will have to focus on a larger study population over a longer period in order to measure periodontal health effectively. In the meantime, how should dental professionals deal with this issue? Do they have an alternative to dental floss?

Are interdental brushes another solution?

According to Swiss oral health care provider Curaden, not cleaning interdentally would be going too far. Choosing a suitable interdental cleaner and using the proper technique are always important. Floss is appropriate for anterior teeth, where long, flat approximal surfaces and narrow spaces make access with an interdental brush difficult. Ideally, one should use dental floss for the narrow interdental spaces between the anterior teeth and interdental brushes for the posterior teeth. According to the Swiss company, interdental brushes are very effective and extremely easy to use compared to dental floss, but must be used gently in order not to injure the gums. Interdental brushes help prevent build-up of plaque between teeth and that causes bleeding gums, gingivitis and periodontitis and dental caries. In addition to interdental brushes, the company produces toothbrushes and toothpastes under its CURAPROX brand and supports educational prophylaxis training called iTOP for dental professionals.

CEO and owner of Curaden Ueli Breitschmid said, "Since 1972, our company has been the pacesetter for interdental brushes, which remove both food residue between the teeth and—more importantly—dental plaque. Since they do not damage tissue, our interdental brushes are not only recommended by the dental professionals globally, but are also prescribed to their patients and their use taught to each patient individually." According to Curaden, the advantages of interdental brushes over flossing have been demonstrated in numerous studies. For example, in a study titled "Comparison of different approaches of interdental oral hygiene: Interdental brushes versus dental floss", patients with periodontitis used dental floss and interdental brushes to reduce plaque over a six-week period. Interdental brushes were found to remove significantly more plaque than dental floss did. Furthermore, patient acceptance seemed to be higher with interdental brushes.



Despite the recent dental floss discussion, patients should not conclude that less thorough dental care is advised. But what interdental cleaners should dental professionals recommend?

"Everyone knows dental floss, but only few like to do it—because they do not know how," according to Edith Maurer, a Swiss-based dental hygienist with 40 years of experience. She added: "A very short thread should be kept between the fingers, moving up and down the sides of the teeth. But most of the time, it slips away, cuts into the gums and so constantly injures the structure of the gingivae. Dental floss should be used if something is stuck between your teeth but not for cleaning below your gums. After all, it has been a razor-sharp tool for over 200 years and is quite dangerous if you do not use it correctly. Imagine cutting a pudding with floss. It will work perfectly, nothing will be attached to the floss. But if you use a fine interdental brush, it will take away more of the pudding. Interdental brushes should be the preferred tool if you want to clean your gums at least in the posterior region."

Individually trained oral prophylaxis is the key

According to dental hygienist Catherine Schubert, the space below the contact area should be the focus. "We need to carefully differentiate between gum disease and dental caries. Interdental brushes are more effective for the prevention of gum disease owing to their space-filling properties. However, a thin shaft and longer bristles are necessary to reach below the interdental contact point where caries mostly develops. Interdental brushes can prevent interdental caries if applied correctly, which is below the interdental contact point. Of course, floss also cleans below the contact point. However, using floss just because it is normal, without thinking about the right technique, will not lead to the prevention of caries. At the same time, using an interdental brush without proper instruction will not lead to the prevention of gum disease. After all, it is not a government or institution that should decide about one's oral hygiene, but the dental professional needs to choose which cleaning technique is most efficient for each of his patients. Individually trained oral prophylaxis has always been the key to one's health."

Elizabeth van der Ham, a South African dental hygienist, agrees that one has to choose carefully between flossing and interdental brushing: "Dental floss throughout the years has been a saving grace for many patients overcoming oral health issues.

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Review challenges dental health recommendation to avoid dried fruits

DT International

BETHERSDEN, UK - Dental health associations worldwide, including the British Oral Health Foundation, usually advise against snacking on dried fruits. Owing to their stickiness, they adhere to the teeth and are thus considered to be detrimental to dental health. By reviewing scientific literature on this topic, a nutrition expert from the UK has now found that this assumption might not be founded on scientific evidence.

A new study has cast doubt on the common perception that eating dried fruit can cause dental problems

The review was undertaken by Dr Michèle Sadler, a registered nutritionist. "There is a lack of good quality scientific data to support restrictive advice for dried fruit intake on the basis of dental health parameters and further research is required," she concluded.

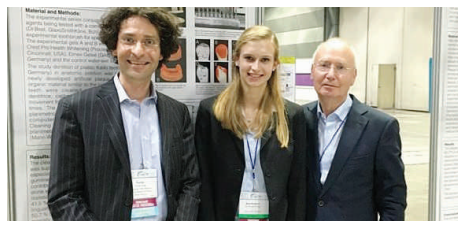
However, she found that there are a number of potential benefits of consuming dried fruits for dental health. For instance, eating dried fruits requires substantial chewing, which encourages salivary flow. In addition, they contain antimicrobial compounds and sorbitol.

Furthermore, Sadler pointed out that advice

Student develops artificial dental plaque

DT International

WITTEN, GERMANY - As part of a research project, a dentistry student from Germany has developed a new formula to synthesise dental plaque, which could help facilitate research on oral biofilm significantly in the future. As the first dental student ever to speak at the congress, she presented her findings at the 94th General Session and Exhibition of the International Association for Dental Research, which took place from 22 to 25 June in Seoul in South Korea.



From left: Dr Tomas Lang, CEO ORMED - Institute for Oral Medicine at the University of Witten/ Herdecke, Ann-Kathrin Flad and Prof. emeritus Peter Gängler

"These results are important for the development of toothbrushes and other devices because their effectiveness has to be tested,"

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new

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Value chains being transformed by new digital dental technologies

By Friedhelm Klingenburg, CEO Merz Dental GmbH

The definition of 'value chain' depicts the stages of production as an ordered series of activities. These activities create values, consume resources and are linked to one another in Processes. According to the approach taken by Michael E. Porter[1], 'Every firm is a collection of activities that are performed to design, produce, market, deliver, and support its product. All of these activities can be represented using a value chain'. Another definition describes the value (adding) chain as 'the stages of the transformation process that a product or service passes through, from starting materials to final use'.[2] Value added is the difference between the income that the product generates and the resources employed.

To be specific, this means that the value chain is represented by the sum of all values added (margin) of each individual market participant. All market participants who wish to participate in a value chain together make up the value chain system of an industry. If this is applied to our industry, we must consider the specific situation of the market participants, 'industry, dental lab, dental practice and patient'. All those involved are part of the value chain. In the past, industry generated its value added by manufacturing consumables or equipment for the dental technician or dentist, the dental technician generated his value added by making traditional dental restorations and the dentist generated his value added by rendering services for patients. The chain has changed more and more over the past 20–30 years, mainly due to the introduction of digital technologies. The following outline presents selected developments based on use of digital technologies, plus a future-oriented project for the integration of total prosthetics into digital technology.

Analogue meets digital (change in occupation profiles)

The whole field of digital technologies in dentistry has now become so extensive that not all aspects can be covered in this article. For example, digital technology has an impact on the following.

- The profile of a dental technician's occupation, which is no longer a 'plaster room' job but rather a computer workstation position. As a result, however, the requirements change for candidates because the modern-day 'skilled trade' calls for future applicants to be interested in computer aided design (CAD) for crowns, bridges, telescopes, abutments, etc and the programming of milling strategies for transforming the CAD design into an end product that is made by subtractive or additive processes. It is advisable and essential to integrate such requirements into dental technician training at an early stage.
- The rendering of dentistry services is calling for increasing use of state-of-the-art digital instruments and methods. In future, a dentist will not only make a diagnosis but chiefly focus on treatment preparation, surgery and the insertion of a dental restoration (conservative or prosthetic). The other activities will be replaced by digital work processes.

There would probably have not been any change in the value chain that had applied for decades (see Fig. 1) if companies like Sirona had not introduced the first digital technologies to dental practices and dental labs in the 1980s. And even though the concept of the shift in value added was already an integral part of the system, initially only work steps and work processes in the dental lab were facilitated, speeded up and thus made more efficient in implementation at the beginning of this digital evolution, by using scanners and CAD/CAM milling machines. Only in a subsequent step were other market participants included, e.g. milling centres in Germany and abroad or also industrial companies that want to participate in the value added (Figs. 2 & 3).

Digitisation—an opportunity for the dental lab?

For a long time now, innovative and marketing- oriented dental labs have recognised the advantages of digitisation and been benefiting from their timely entry to the world of CAD/CAM. Their wide range of services covers the entire dental technology portfolio with modern, stateof-the-art framework materials and veneering materials. Standard restorations in particular, such as crowns and bridges are made by CAD/CAM—nowadays that is already state of the art. But what impact have these change processes had in the dental lab? The fact is that there has been a shift in the focuses of activity in in-house production towards more services in the digital planning and coordination process and the process chain has been minimised. In terms of quality not much has changed, even though it may have been expected. Without doubt, material quality is perceived by the patient only in terms of shade (from gold to white) and the fit/security of a dental restoration is still dependent on the job instructions that have been received from the dental practice. Process quantity has seen a major change—nowadays only half of the original dental lab processes are necessary in the lab in order to produce a functional, highly aesthetic dental restoration. Although in economic terms it means high capital investment costs for the dental lab owner, it also means that, depending on the amortisation period and the quantities to be made, he is able to make competitive prices when faced with market participants who attempt to penetrate the market by price dumping.

These days, the dental lab is—more than ever—a service provider for the dental practice and less and less a skilled trade. That naturally involves risks for the skilled occupation, but it also offers substantial opportunities. A dental lab owner can highlight his locational advantage and provide his special services and cooperation in a spirit of partnership.

What type of dental lab are you? Do you rank among the dental labs that are still highly characterised by

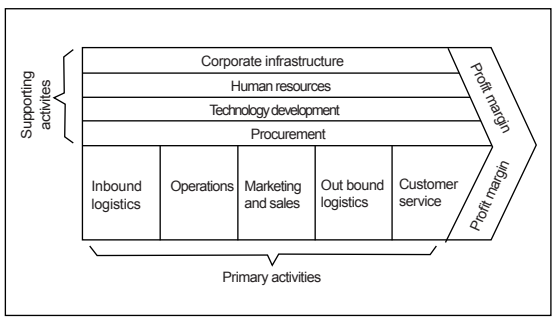

Fig 1: Basic model of Porter's value chain.

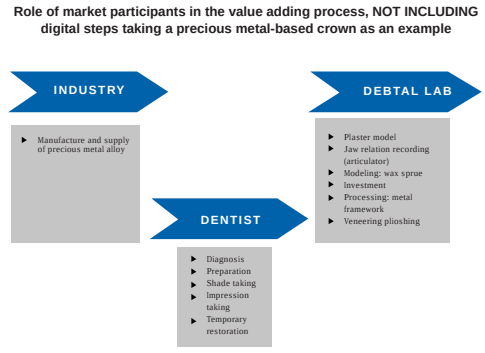

Fig 2: Basic model of market participants in the value adding process, not including digital dental technology.

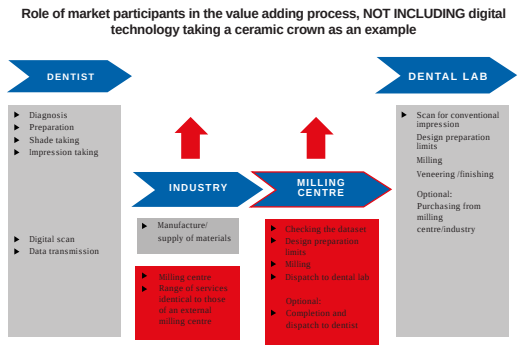

Fig 3: Basic model of market participants in the value adding process, not including digital dental technology.

Fig 4: Mandibular BDLoad, after milling process.

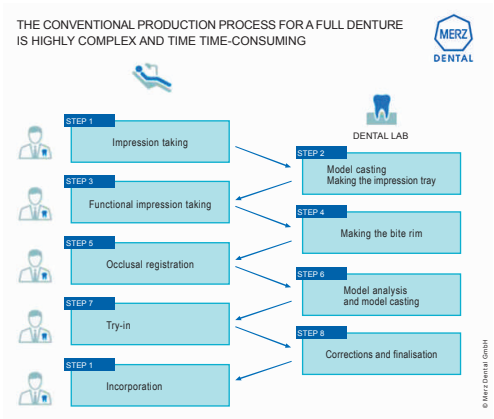

Fig 5: Illustration of the conventional method of production and treatment.

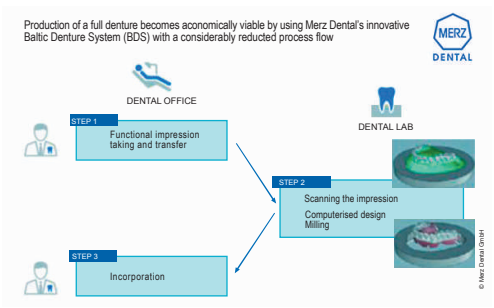

Fig 6: Innovative digital method of treatment and production.

craftsmanship? Are you extremely uncertain and waiting to see what happens or do you lack the required knowledge of economics or marketing to also embark on the path of digitisation? The fact is that anyone who fails to have an open mind about digital technology will no longer have a major player role among the dental labs. The more dental practices invest in digital workflow and exchange relevant data, the more dental labs have to adapt and serve it technologically. It is still the responsibility of dental labs to support the dentist, and hence the patient, by providing optimal process chains. That is why dental labs should regard digitisation as an opportunity.

From stand-alone solutions to value chains

At the beginning of the digital dental world there were stand-alone solutions, single work steps, but nowadays there is more and more consideration of complex dental lab processes that can be implemented on a totally digital basis. It all started with implant navigation, digital function diagnostics, and the production of aesthetic dental restorations in the form of crowns and bridges, and nowadays these have already become mainstream, so to speak, in an innovative, modern-day dental lab. The next step in a dental world that is becoming increasingly digital is advancement towards the consideration of entire value chains—including the process of making full dentures.

Backward planning for full dentures—the digital value adding process in reverse!

While in the past the introduction of digital technologies chiefly aimed at indication-related solutions for individual work steps, the focus of digital dental technologies is now on entire value adding processes. One of the last groups of topics and areas of indications, which, in digital terms, has so far only been dealt with in passing, is total prosthetics. Here in particular, though, there are innovative digital approaches that will simplify and speed up production. This is where pioneering digital revolutions are accounting for yet another milestone in digital dental technology. The future scenario is depicted in Figure 6.

After all, total prosthetics does not merit the reputation of being an 'unloved child'. For dentists and dental technicians it still does not have the same level of importance as other prosthetic restorations. But why? It is certainly not due to the fact that patients are so difficult, or total prosthetics generally is so unattractive to dentists and dental technicians. On the contrary. Production of a precision-fit, functional and aesthetic prosthesis is often a major challenge to dentists and dental technicians. Especially because with edentulous patients important information is frequently missing to be able to achieve an optimal reconstruction of the jaw and mouth. The main reason is rather that the dentist's and dental technician's services to be rendered for a full denture are both extensive and elaborate and the fee chargeable for the service cannot cover the costs incurred. In Germany, between 300,000 and 400,000 full dentures are still being made every year.

And according to expert opinion, the figure will tend to remain constant in years to come owing to a longer life expectancy and sociodemographic change. With an average total fee rate of approx. €1,000–1,400 per full denture this market segment has a volume of over €300 million—and that only applies to Germany. Consequently, total prosthetics still ranks as one of the most important areas of prosthetics.

The complexity of today's production process for a full denture is illustrated by the following flow chart.

Production of a conventional prosthesis is currently based on complex interaction between the dentist, dental technician and patient. In an idealised process flow, there are at least five appointments for the patient and dentist, which can take several days or even a few weeks. From the very first appointment the work starts to be dispatched, from the first impression, functional impression and occlusal record to the first wax model, until, after much to and fro between the dental practice and the dental lab, the final denture can be fitted in the last appointment. The dentist's net treatment time in the chair can then total about 2.5 hours. Quite often another one to two more appointments are required. Per appointment there is a calculated preparation and follow-up time of at least 5 minutes so if there are five appointments another 25 minutes have to be added on. Consequently, dental practice time soon totals 3 hours or more for a full denture.

At the dental lab end, the level of complexity is even higher. From initial model impression taking to final completion the dental lab can expect to have dental lab work amounting to 6–8 hours. This does not include pick-up and delivery times for commuting between the dental lab and the dental practice. Even after denture incorporation there is often rework, which is time-consuming and not included in the service fee.

The conventional workflow (Fig. 5) for making a full denture therefore positively cries out for an approach to address the last bulwark of the conventional dental process chain and make a digital solution available.

The future of the full denture is digital

That is definite. Although nowadays there are ways of simplifying individual work steps with a scanner and a CAD/CAM milling machine (prosthesis baseplate or basing arches made from industrially prefabricated blanks), consideration of the process chain as a whole has so far been missing. This is the approach adopted in the following illustrated solution with a full denture based on completely digital development and production. The entire solution concept is based on the principle of backward planning. In real terms this means that a full denture completed by a master craftsman is customised to suit the patient's oral situation, with just one appointment! Very soon the production of a full denture will take place in a fully digital process—from digital impression taking to production, completely devoid of dust and plaster. Unfortunately the digital scanning systems available at present are not yet able to provide the option of comprehensive collection of oral situation information in a single appointment, but it is definitely only a matter of time. Until then the jaw relation, palate, centric relation and aesthetics will be recorded by analogue means and then transferred to the digital system. By this method, all the data for making the prosthesis later is collected in just one appointment.

The process is followed by comparing the digital data with a prosthesis database, selecting the appropriate milling blanks with previously polymerized dental arches, and the modelling of the gums, which vary from patient to patient. After transferring it to the CAM module all that has to be done is mill the respective maxillary/mandibular pair. That is followed by finalisation in the dental lab and a second appointment at the dentist's for the purpose of incorporation. The finished product is a functional, precision-fit, highly aesthetic dental restoration of master craftsmanship quality, made in Germany!

This new future-oriented method called Baltic Denture System uses digital technologies to make the production of a full denture economically profitable again for the dental practice and the dental lab, for the first time in years. Despite digitisation, market participants remain the same and the value adding process takes place within the familiar, implemented structures.

Digital technology as an option for additional business

With the aforementioned method of production and by focusing on a small number of analogue processes in the dental lab there is more scope for new lines of business for dental labs. The dental lab of the future will no doubt regard itself increasingly as a partner and service unit for its dentist and be capable of taking 'troublesome' issues off his hands. In addition, the dental lab can manage the data stream for its client to ensure optimal results. Another field of activity that presents itself as a result of digital techniques is that of dental aesthetics! One example is the concept of lächeln2go (smile to go), which, with its volunteers, first developed the concept of dental aesthetics as a new line of business. What is impressive is the use of a two-dimensional aesthetics check that makes it easy to record dental status and aesthetic deficits.

Fig 7: BDLoad (maxillary and mandibular milling blank in occlusion, available in various sizes) before milling process.

Fig 8: BDLoad (maxillary and mandibular milling blank in occlusion, available in various sizes) before milling process.

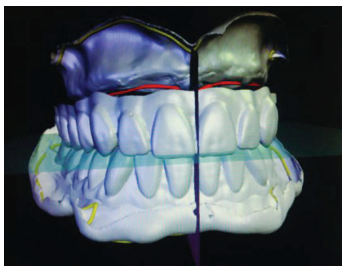

Fig 9: Process-integrated BDCreator CAD Software.

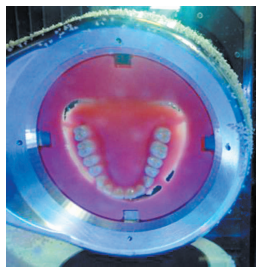

Fig 10: BDLoad, during milling process.

Fig 11: BDLoad, after milling process.

Fig 12: BDLoad, after milling process.

Conclusion

It remains to be seen who the winners and losers of increasing digitisation will be. The fact is that we are not yet at the end of optimal digital workflow. It is still important to modernise and develop digital processes. However, the opportunities are quite clearly in the majority, and due to optimisation in the process chain the resulting work has a higher

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Most of hospitals lack anaesthesia facilities: Prof Tipu Sultan

Criticises CPSP for compromising quality of trainers and trainees

By Azizullah Sharif

RENOWNED anaesthetist, Prof Tipu Sultan said that it was an irony that although owners of most of hospitals across the country are doctors, majority of them have compromised the quality in their healthcare facilities, whether it is their surgical, gynaecology, anaesthesiology or any other ward or department.

He was also critical of College of Physicians and Surgeons of Pakistan (CPSP), saying that the college controlling 64 disciplines of post-graduation by conducting examinations and overviewing their training programmes which are supposed to be structured throughout the country, yet the quality of both the trainers and trainees in most of the disciplines have been compromised. "In fact, there is an internal management crisis in the CPSP," he deplored.

Prof Tipu Sultan, who was unanimously elected as the maiden chairperson of Sindh Healthcare Commission at its meeting held recently, expressed these views in an interview with the *Dental Tribune*.

Prof Tipu Sultan, who is commonly known as *'Baba-e-Anaesthesia'* in the medical profession, did his MBBS from Dow Medical College, received D.A. (Diploma in Anaesthesia) in 1973, got training in anaesthesia from England's Charing Cross Hospital and fellowship from Royal College of Anaesthesia in early 1976, joined his alma mater (DMC) as assistant professor in 1976 where he established anaesthesia department and later converted it into a post-graduation centre which has, so far, produced 300 anaesthetists. Of them, he has the singular honour of producing as many as 218 anaesthetists which is highest in Pakistan under one person and under one department. It means that of around total 1,250 anaesthetists available in the country, about one-fourth of them have been trained and produced by Prof Tipu Sultan alone, and it for this very reason that he is known in the medical profession as *'Baba-e-Anaesthesia'*. Half of the anaesthetists produced by him are working in Karachi while remaining are serving in different parts of Sindh, Balochistan, Saudi Arabia, Muscat, Dubai, etc.

He had also served as medical superintendent of Civil Hospital, Karachi, elected councilor of CPSP from Sindh and the founding principal of Bahria Medical and Dental College. During his association with the Bahria Medical College, he was also instrumental in establishing its faculty and getting the college's building shifted to Defence Housing Authority's Phase-II from its previous location which was near Dalmia Cement Factory.

The most interesting, rather cherished aspect of Prof Tipu Sultan's life was that when he entered into the premises of DMC in 1962, the premier medical college of the country, to do his MBBS, his mother Dr Atia Saheba was already there to greet him as a final-year student of the same institution.

Asked what measures he intends to take in his capacity as chairperson of Sindh Healthcare Commission against the specialists who are charging exorbitant fees from patients, Prof Tipu said that he will, definitely, like to rationalize their fee so that people belonging to low-income group could also benefit from their expertise.

To another query, whether the provincial healthcare commission would ensure that all medical practitioners must display their PMDC's (Pakistan Medical and Dental Council) registration numbers conspicuously on their clinics' boards as well as on their letterheads used as prescriptions, he said that though it was already mandatory under the PMDC's rules, the provincial healthcare commission would ensure that the council's rules are implemented in letter and spirit.

Asked when the healthcare commission would start implementing its terms of reference (ToR) which include accreditation and registration of all healthcare centres (both private and public), all medical stores, laboratories and bringing an end to the menace of quackery, etc., he said that it will start functioning as soon as its chief executive officer is appointed from amongst grade 20 officers and its head office and regional offices are set up. Both the provincial health minister and secretary health are making their endeavours in this regard, he added.

DUHS: About the DUHS which is without vice chancellor for the last 10 months or so, Prof Tipu Sultan remarked: "Law of the land has become a mockery as in the case of appointment of DUHS vice chancellor rules and regulations of PMDC, HEC, Sindh and federal governments' are being openly flouted."

Replying to a question, he said that it was mandatory upon anaesthetists to remain present at hospitals as long as the patients whom they administer anaesthetic recover from the effects of anaesthesia and become stable.

ILL-EQUIPPED: Asked if all the hospitals of the country are equipped with necessary anaesthesia monitors, gadgets and proper recovery rooms, he replied in the negative, saying that except for a few major hospitals, rest of healthcare facilities are without such facilities. He also admitted that portable anaesthesia machines that an anaesthetist carry to a hospitals lacking necessary anaesthesia equipments usually did not work properly and as such their results cannot be relied upon.

Asked that why a huge number of doctors used to prefer to become anaesthetists under his supervision, he replied that since there is no glamour and no money in the field of anaesthesiology as compared to surgery and other specialties only the `dropouts' used to become anaesthetists as well as due his open door policy of accepting graduates from any college of Sindh.

Prof Tipu Sultan

Talking proudly about his students, he said that they still come to him for doing refresher courses which he organizes twice a year for them at his family's farm, located in Koohi Goth, Malir, Deh Landhi.

Prof Tipu Sultan in whose family there are 42 doctors, starting from her mother Dr Atia, her children and their children. His two brothers - Prof Sirajudaula Syed, Dr Shershah Syed - are prominent pathologist and gynaecologist, respectively, while his five sisters - Chand Bibi, Shaheen Zafar are gynacologists at Malir's Atia Hospital and Liaquat National Hospital (LNH); Afia Zafar is the head of Aga Khan University's Pathology department; Safia Zafar (Professor of Anaesthesia at Dow University of Health Sciences) and Ghausia is housewife and whose husband is an assistant professor at LNH. Besides, Prof Tipu's two sons are also doctors - one of them is an anaesthetist and the other is an orthopaedic surgeon.

Son of late Syed Abu Zafar, who in 1948 established Ghazi Mohammad Bin Qasim School in Lyari's Agra Taj Colony for imparting free education to the children of the poor locality, Prof Tipu Sultan and his family members have now set up Malir University of Science and Technology (MUST) at Koohi Goth, Malir-Landhi.

The university of which he is chancellor will kick off in September and despite being in private sector its fee structure will be at par with Karachi University's evening programme's fees.

Happiness is your dentist telling you it won't hurt and then having him catch his hand in the drill.
~ *Johnny Carson*