UK dental schools come out on top in global ranking

By DTI

LONDON, UK/SHANGHAI, China: In a new global survey, four schools in the UK have been ranked as some of the world’s top institutions for dental education. Among the top 50 dental schools worldwide, as ranked by Shanghai Ranking Consultancy, were departments from the University of Birmingham, the University of Manchester, the University College London and King’s College London (KCL) whose Dental Institute was ranked seventh—the highest of all the UK-based institutions.

In a similar survey published by QS World University Rankings in London last year, KCL was ranked among the four best dental schools in the world. According to the institute’s executive dean, Professor Mark Woolford, these new results reaffirm the institution’s position as a world-class institution and reflect the dedication, commitment and innovation of their academic and professional staff, students and alumni.

“King’s places great importance on the research carried out in the Dental Institute,” Woolford commented. “It is the clear top dental school for research outside North America using metrics that are based on measurable outcomes.”

“I am very pleased the work of many colleagues receives the recognition it so richly deserves,” Woolford said.

Based in Shanghai, China, Shanghai Ranking Consultancy is a fully independent organisation, which, in its own words, is dedicated to researching higher education intelligence and consultation. Since 2009, it has been the official publisher of the Academic Ranking of World Universities, which measures several indicators of 4,000 universities worldwide, including research quality and productivity, as well as the extent of international collaboration.

The amount of research published in top journals and the number of significant academic awards the faculty receives from professional organisations. They currently rank 52 academic subjects in five categories, including medicine, which comprises both dentistry and oral sciences.

This year’s ranking of dental schools saw an overwhelming dominance of American institutions, with eight out of ten of the highest-ranked schools based in the US. Besides the KCL Dental Institute, the only other dental school not based in the UK that was ranked in the top ten, was the University of Sao Paolo in Brazil. In addition to the UK, Brazil, the Netherlands and Canada saw a significant number of their dental schools ranked high in the survey.

The University of Michigan School of Dentistry, which is also one of the oldest dental institutions in the world, was named the top school globally.

DDU: Mobile devices pose security risk in dental practice

By DTI

LONDON, UK: The Dental Defence Union (DDU) in London has cautioned dentists not to take and store clinical photographs on mobile devices like smartphones or tablets. In view of the recent cyber-attacks on NHS systems in the country, the organisation also advised practices to have an information security policy in place on all their computers, as well as a designated person appointed to oversee data protection.

Back in May, a global ransomware attack brought disruption to NHS systems nationwide. Although patient data was not exposed, according to authorities, details of thousands of NHS staff were stolen in the process.

While taking clinical photographs can be useful for treatment planning and protecting oneself from patient complaints, storing them on a mobile device could be a breach of the Data Protection Act, even if that data is subsequently transferred to the patient record system and deleted from the personal device, explained dental-legal adviser David Lauder in an editorial published in the latest DDU journal issue.

Instead, he said practices are advised to use a dedicated clinical camera that can be stored away securely in the practice and to always seek written consent to the use of the photographs from their patients in order to avoid possible legal consequences.

“The impact that mobile devices have had on society is undeniable. As they become an increasingly common part of our daily lives, it is understandable that many practitioners use them in the dental surgery,” Lauder wrote. “But because of the legal considerations associated with the protection of personal data, and the potential for mobile devices to be lost or stolen, it would be wise to avoid taking clinical photographs on a mobile phone.”

Under the Data Protection Act 1998, clinical photographs of patients, even when unidentifiable, are considered personal confidential data. A breach can lead to fines being issued by either the General Dental Council or the employer.
“Say cheese!”

Glaswegians attempt Guinness record with world’s largest smile

By DTI

GLASGOW, UK: Contrary to common belief, research suggests that people in Glasgow are among those in Britain who smile the most. This surprising finding was recently underlined by students and staff of the University of Glasgow who joined pupils and teachers from the area in an attempt to set a new Guinness record by forming the world’s biggest smile.

The event in June brought together over 1,000 participants at the Scottish Event Campus, formerly the Scottish Exhibition and Conference Centre, in an effort to raise awareness of oral health. Participants wore red and white ponchos in order to form the lips and teeth of a giant smile. The attempt is now awaiting verification for record status.

According to the head of the University of Glasgow dental school Prof Jeremy Bagg, the event successfully highlighted the important message of maintaining oral health. “The event has been a huge amount of fun to organise and our sincere thanks go to all of the many partners and organisations involved who helped to make this happen. I am delighted that we were able to achieve our aim of assembling 1,000 participants in the shape of a big smile as Glasgow’s contribution to National Smile Month and I sincerely hope that Guinness World Records will verify this as the world’s biggest smile,” he said.

Congratulations to the organisations on their achievement. Head of the Evidence for Action Team at NHS Scotland Health and consultant in dental public health Dr Cohnyn Jones observed that while oral health has improved throughout Scotland through programmes like Childsmile, children living in poorer areas are still more likely to suffer from dental caries. “Events like the one organised today allow us to remind people that tooth decay is almost entirely preventable,” he said.

Organised by the university’s School of Dentistry, the Guinness World Record attempt received support by the city of Glasgow, NHS Scotland and the British Endodontic Society, among others. It was part of this year’s National Smile Month, which is run by oral health charity the Oral Health Foundation in London and took place from 15 May to 15 June with plenty of activities centring on oral health throughout the country.

Study confirms virtual reality improves patient satisfaction

By DTI

DEVON, UK: Though the use of virtual reality (VR) in dentistry is steadily growing, variation in its efficacy due to differing VR environments has rarely been measured. A new study conducted by a team from the universities of Plymouth, Exeter and Birmingham—in conjunction with Torrington Dental Practice in Devon—has found that dental patients enjoy an overall better experience when engaged in a VR walk in a coastal area than in a city.

Patients who agreed to the study were randomly assigned to three separate situations: conventionally performed procedures without VR, a walk around a virtual, but anonymous city or a walk along the coastline of Devon’s Wembury Beach. Patients chosen for the last two groups were provided with a headset and handheld controls.

The study found that the group who virtually walked along the coastline experienced the least amount of pain and recollected their treatment as such. These findings were not evident in the group who engaged with the cityscape VR.

“The use of virtual reality in health care settings is on the rise but we need more rigorous evidence of whether it actually improves patient experiences,” said Dr Karin Tanja Ojijkstra, lead author of the study.

“Our research demonstrates that under the right conditions, this technology can be used to help both patients and practitioners.” The study authors emphasised that the VR environment patients engage with is crucial to reducing their pain and anxiety when visiting the dentist. “That walking around the virtual city did not improve outcomes shows that merely distracting the patients isn’t enough; the environment for a patient’s visit needs to be welcoming and relaxing,” said Dr Sabine Pahl, co-ordinator of the study at Plymouth University.

“It would be interesting to apply this approach to other contexts in which people cannot easily access real nature such as the workplace or other healthcare situations.”
WHITE TEETH
STRONG ENAMEL
FRESH BREATH

WHITE TEETH DUE TO
HYDROXYLAPATITE

WHITE TEETH IS WHITE
CHEW FOR WHITE
WITH ACTIVATED CHARCOAL

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#chewinggum
#whitening

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Surge of honours for dentists in Queen’s list

By DTI

LONDON, UK: A former Deputy chief Dental Officer, a prominent orthodontist and a dental philanthropist have been named in the 2017 Queen’s Birthday Honours. Appointed to the Order of the British Empire, among other dental professionals, were Prof. Nigel Hunt from the UCL Eastman Dental Institute in London and Dr Linda Greenwall in Hampstead.

An authority on tooth whitening and aesthetic dentistry, Greenwall lectures extensively, in addition to running a multidisciplinary private practice. She is also founder of the British Bleaching Society and the Dental Wellness Trust charity, which aims to promote good oral health in less fortunate communities around the world.

Hunt has been a professor and Head of the Department of Orthodontics at the UCL Eastman Dental Institute since 1998. There, he also leads a research team in the field of craniofacial reconstruction and tissue engineering. Previously, he served as President of the British Orthodontic Society and Dean of the Faculty of Dental Surgery of the Royal College of Surgeons of England.

Also recognised for her contributions to dentistry was Dr Serbijt Kaur from Park View Dental Practice in Leicester. She served as Deputy Chief Dental Officer for England under Dr Barry Cockcroft from 2008 to 2015. Further honours recipients were Margaret Katherine Ross, Programme Director for the Bachelor of Science in Oral Health Sciences at the Edinburgh Dental Institute, and Dawn Ailsa Adams, Clinical Director of Community Dental Services at NHS Fife.

Every year, the Queen’s Birthday list recognises members of the public in Britain for their contributions to various fields. This year’s list saw honours awarded to over 1,000 people, including Sir Paul McCartney, MBE, J. K. Rowling, OBE, and comedian Billy Connolly, CBE, among others.

State-of-the-art dental education centre opens in Bradford

By DTI

BRADFORD, UK: A £500,000 state-of-the-art education and training facility designed to enhance and further the skills and knowledge of dental health care staff has just been completed at Bradford College. Offering training and continuing professional development courses for dental professionals on topics such as fluoride application, oral cancer awareness and impression taking, the Northern Dental Education Centre (NORDEC) will also provide apprenticeships for those seeking employment in the dental industry.

The high-spec facility is a joint enterprise between Bradford College and the Leeds City Region Enterprise Partnership (LEP) and is housed in the college’s £10 million Advanced Technology Centre on Randall Well Street in the city centre. The facilities include a classroom set up like a dental surgery, a room filled with phantom heads and realistic open-mouthed manikins that offer the opportunity to practise in close to real-life conditions. It also has a decontamination suite and space for lectures, conferences and workshops.

Andy Welsh, CEO of the Bradford College Group, said: “We are delighted to be working with the LEP in establishing a dental training base in Bradford that will deliver high-quality training to the dental profession. NORDEC is dedicated to the task of training healthcare professionals, driving clinical standards and improving clinical leadership through opportunities for continuous personal and professional development.”

Susan Hinchcliffe, head of the LEP and leader of Bradford Council, praised the completion of facilities and expressed her confidence that the new centre would provide a fantastic boost to the dental industry nationwide.

The centre was opened by MP Judith Cummins and attended by key figures from the dental industry, and education, politics and health departments. Apprentice dental nurses will be among the first to benefit from the new facilities.

DSC appoints Sheffield dental school dean as new chair

By DTI

LONDON, UK: The Dean of the University of Sheffield’s School of Clinical Dentistry, Prof. Chris Deery, has been appointed as the new chair of the Dental Schools Council (DSC). He is succeeding Prof. Calum Youngson, the head of the School of Dentistry at the University of Liverpool, who has been leading the organisation since 2014.

Commenting on his appointment, Deery said owing to an increase in the number of clinical dental academics, as demonstrated by a recent survey, the opportunities to conduct dental research must be increased. More must also be done to provide support for those who work in clinical academia, which will require collaboration from organisations across the sector, according to Deery.

“Professor Youngson has done a fantastic job leading the Council for the last few years,” he said. “I look forward to continuing this work alongside my dental school colleagues and our colleagues from across dental healthcare.”

“We have seen great strides in public dental health over the last decade and these strides are in large part down to the quality of our dental school graduates,” he added.

Also working as Programme Director for the MClinDent in Paediatric Dentistry, the Clinical Lead for Paediatric Dentistry and Associate Clinical Director at the Charles Clifford Dental Hospital, Deery joined the University of Sheffield as paediatric dentistry professor in 2006. Since 2015, he has been holding the position of Dean at its dentistry department.

Among other positions, Deery also serves as the Editor-in-Chief of the International Journal of Paediatric Dentistry published by John Wiley & Sons and as Chair of the Consultants in Paediatric Dentistry Group.

The Dental School Council represents all 18 dental schools in the UK and three in Ireland.
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2. Full-strength BruxZir zirconia molar crowns at 6 years show
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   - Transformation toughening that stops cracks as demonstrated by scanning electron microscopy
   - Tolerates minimal tooth preparation
   - Tolerates bruxing/etching
   - No negative influence on occlusion over 6 years (no changes in muscle, joints, or local muscle mobility)
   - Low biofilm retention
   - Zero debonds at 6 years with simple wash/day after try-in and RMG cementation (Rohr J Dent Res Vol 35:3)
   - Esthetics adequate, but not excellent
   - Excellent bio-compatibility
   - Receives some wear from all types of dental materials and foods consumed; receives more wear than it delivers on opposing dentition (per measurement and monitoring of wear facets over 3 years; Christiansen, R, et al. J Dent Res Vol 93(A):3106,275, 2014)

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UK’s first professional dental network expands further

**By DTI**

BIRMINGHAM, UK. One of the highlights of this year’s Dentistry Show in Birmingham was undoubtedly the after-party organised by Dental Circle. Over 250 of the UK’s finest in dentistry took to the Genting Hotel near the National Exhibition Centre for a night of fun, celebration and professional networking. The event was an all-out success for the young network, according to founder and CEO Dr Dev Patel, so much so that it plans to hold an even bigger one next year.

The Next Generation Conference, with sessions specifically that ran concurrently throughout the show in May, was also sold out completely. There, young dentists had the opportunity to obtain valuable insights into a variety of subjects, including starting to place implants and how to manage tooth wear, by well-known national experts, like Dr Dev Patel, Dr Til Qureshi and Ashley Larter.

Patel said that membership for the Dental Circle platform, which was founded in 2014, has received a significant boost over the last 15 months. According to him, over 7,000 dental professionals are currently registered on the site, which facilitates communication and networking within their specific field or area through a convenient members map. On the site, a personal profile page allows each member to add his or her interests and achievements and upload images of his or her clinical cases and share them with the rest of the Dental Circle community. Furthermore, members can join special interest groups led by mentors to explore or deepen their knowledge of various aspects of the profession.

Significant updates were recently introduced with a new job section, among other things, that is aimed at helping dentists to find work more easily in an increasingly challenging marketplace.

In addition to its website, Dental Circle remains highly active in hands-on education. Among four courses to be held within the year, a one-day course titled “How to Grow your Dental Practice” is scheduled for October in London. Other well-known market competitors, such as Henry Schein Medical, Dentply Sirona and Nobel Biocare, have come on board to support these events, which are planned to be extended next year.

There are also plans, Patel said, to port these events, which are planned to be extended next year.

“Gaining US approval is critical to approach dental schools and universities in order to allow students to join the network. At present, only dentists who are registered with the General Dental Council are able to sign up.

“We want to make sure that all members of the profession will be able to join our website,” Patel emphasised.

More information about Dental Circle and registration on the site is available at www.dentalcircle.com. There, visitors can also find information about the network’s educational offering.

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**CURAPROX Black Is White Chew it!**

By Curaden

KRIENS, Switzerland: Health begins in the mouth—and not just health: freshness and beauty start with an open, confident smile. That’s what CURAPROX, the oral hygiene brand from Swiss company Curaden, stands for. Brand-new for the UK market is its Black Is White activated charcoal chewing gum. Black, subtly citrusy and minty, this effective whitening product boasts five amazing ingredients.

Containing activated carbon for a gentle whitening effect, there’s no chewing gum like it. This natural ingredient simply absorbs particles that cause discolouration, removing stains without damaging the enamel.

Hydroxyapatite, a natural mineral that is the main component of dental enamel, fills micro-porations in enamel and is starting to form. It remineralises the dental enamel and seals dental tubules, thereby giving the chewing gum protective and sensitivity-relieving properties. Hydroxyapatite is also a main ingredient of the well-known Black Is White toothpaste.

Glucose oxidase promotes a healthy balance of bacteria in the mouth. This completely natural enzyme turns glucose into hydrogen peroxide and simultaneously activates the salivary lactoperoxidase system. The result: no bad bacteria and no possibility of dental caries, gingivitis or periodontitis.

And the chewing gum wouldn’t be complete without xylitol. This special sweetener is extracted from trees and has an anti-bacterial effect. Saliva-stimulating, xylitol remineralises the dental enamel and is clinically proven to reliably prevent dental caries.

“Black Is White chewing gum is a wonderful product that promotes beauty and oral health,” according to Ueli Breitschmid, CEO of Curaden. This gum also symbolises the CURAPROX mission of offering design-oriented and highly effective products that make a difference. “As part of our successful Black Is White line, including the Black Is White toothpaste, Hydrosonic Black Is White sonic toothbrush and Black Is White manual toothbrush, we are now offering something unusual and exclusive.”

Buy Black Is White chewing gum at www.curaprox.co.uk.

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**Caries detection tech close to launch**

By DTI

EDINBURGH, UK: A novel system developed in Scotland for immediate and accurate measurement of dental caries on teeth could soon make its way abroad, as the developer CALCIVIS has recently announced the completion of a premarket approval study that is intended to make the promising technology available to US dentists in addition to clinicians in the UK.

The study was conducted among 111 patients in several dental practices in Edinburgh over the past six months, and the first read-out of data will be available over the next few weeks. If successful, premarket approval by the US Food and Drug Administration for the technology is expected in the second half of 2017. According to CALCIVIS CEO Adam Christie, the US regulatory body has already been consulted on the study design and statutory approach as part of the regulatory pre-submissions process.

“Gaining US approval is critical for us to maximise the commercial potential of the CALCIVIS imaging system which we believe will transform the management of enamel demineralisation associated with caries and erosion and support the wider adoption of preventive dentistry,” he said.

The system, which has received over £8 million in funding from the EU and the Scottish Investment Bank, among other institutions, has already gained approval by European regulators and is anticipated to be launched in the UK later this year. Originally developed by researchers at the University of Dundee, the CALCIVIS imaging device allows the real-time detection and visualisation of calcium ions released by demineralising carious lesions in routine dental practice. In order to achieve this, it makes use of bioluminescence with a special solution containing a photoprotein applied to the tooth surface. Photographic mapping with CALCIVIS then provides clinicians with accurate information about the location of active caries or other problems, like acid erosion, in patients.

In addition to helping to detect those conditions in advance, the system is intended to work as a communication tool between patient and dentist, the study’s principal investigator and orthodontist at Dundee, Harper and Shanks Dental Practice in Edinburgh, Dr Neil Shanks, explained.

“It will also provide a clear explanation and justification of preventive management approaches to patients, helping to ensure their compliance,” he said.

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What would Dr Mo Lar do? Part 4
How to legally reduce one’s tax bill

By Richard Lishman, UK

Over the course of this series, the dentists group will explore ways to tackle a number of personal and professional challenges by providing advice and guidance to fictional character Dr Mo Lar. In this article, the fourth in the series, we look at how he could legally reduce his tax bill.

Lar operates as a sole trader. In other words, he is classed as the exclusive owner of his own business and is entitled to keep all profits after tax and National Insurance. 

What he takes home will depend on which Income Tax bracket he falls into. Now that he has some experience as an associate, his earnings will be in the region of between £60,000 and £100,000, which means he falls into the Higher Rate Threshold (HRT). Once he starts earning above £100,000, however, his Personal Allowance – the level at which Income Tax begins to be paid – will be reduced by £1 for every £2 of income above this limit. For the tax year 2017/18, the Personal Allowance is £11,500.

As for National Insurance, Lar falls into the Class 4 category, which means he is required to pay 9 per cent on profits between £8,060 and £43,000. As from April 2018, this will rise to 10 per cent and again to 11 per cent in 2019. Anything above £43,000 will be taxed at 2 per cent.

One way in which Lar can pay less tax and save money is to make sure he claims all of his tax-deductible expenses, such as subscriptions and technical journals, lab costs and hygienists fees, course costs, payments to charity, equipment, uniforms and accountancy and management consultancy fees. As a sole trader, Lar is also eligible to claim a percentage of the running costs of a car as long as he keeps detailed mileage records. It is important to note, however, that travel between home and the surgery is not classed as a business journey.

If Lar plays it smart with his tax payments, he could minimise his tax even further. Because he is self-employed he is able to select when his accounting year ends. Choosing a date early in the tax year would give him more time to prepare his accounts and longer to pay the amount of tax due. If in the event it looked like Lar would be earning less than the year before, he could apply to reduce any payments on account due to HMRC – in other words, any advance payments towards his tax bill. For the best results it is always best to utilise the services of a specialist dental accountant.

There are a number of savings that can be made outside of work too. At this stage in his life, Lar is not married and has no children, which means if he wanted to make some extra cash he could rent a room in his property. The Rent a Room relief would mean he could receive up to £7,500 in rent each year from a lodger, completely tax-free. When he does decide to marry, he could consider transferring his investment assets to his spouse, if they are in a lower tax bracket.

In the meantime, the best option for Lar would be to mitigate tax through maximising his pension and Independent Savings Account (ISA) Annual Allowances (AA). For the tax year 2017/18, the pension AA is £40,000, so to get...
the most from his money with no tax implications. Lar should think about investing some of his earnings into his pension pot. If in the event he were to exceed this amount, he would be taxed on the excess at his highest marginal rate.

If his salary is increased and he starts earning above £150,000 he would be subject to the Tapered Annual Allowance. At £210,000 for instance, Lar’s AA would be reduced to just £10,000. As such, it is worth considering how he could leverage his money to his advantage, especially as he plans on purchasing his own practice in the future.

In regard to Lar’s ISA, he should ensure that he makes full use of the AA, which is £20,000 for 2017/18. With the added benefit of no income tax on the interest or dividends and all profits from ISA investments are exempt from Capital Gains Tax, this is a great way to legally reduce a tax bill.

While there are a number of ways in which mitigation can be achieved, the process can be extremely complex and confusing. As such, it is always best to employ the help of specialist accountants and Independent Financial Advisers such as those at the 4dentists group. Dentists like Lar may have to invest in help from the experts, but it will save him money in the long run.

Next issue: Dr Mo Lar gets married and starts a family.
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Establishing fire safety measures in dental practice

By Stuart Collyer, UK

Being a dentist, you will be familiar with the need to carry out regular checks on your patients to spot potential problems before they become major ones. This preventative approach should be applied to your fire safety procedures and equipment too, just like any other business, complying with fire safety regulations, like the Regulatory Reform (Fire Safety) Order 2005 here in the UK, is an obligation. By carrying out a fire risk assessment, you can secure the longevity of your business by reducing the likelihood of a fire starting, as well as preparing for the worst.

In fact, studies have shown that over 70 per cent of businesses that have been involved in a major fire either do not reopen or subsequently fail within three years. Fire prevention is far easier than trying to recover from a fire.

More importantly, a fire risk assessment ensures the safety of your staff and patients. Thankfully, fully meeting the regulations is not as difficult as one might expect, but failing to do so comes with the risk of a large fine and even a prison sentence.

The five stages of a fire risk assessment

By completing a fire risk assessment, you will gain a full understanding of your business in terms of the activities that are carried out and the risks present. By going through the five steps, you will have made your dental surgery safer and compliant.

– Step 1: Identify all potential combustibles and possible sources of ignition.
– Step 2: Consider all the relevant people who are at greatest risk from fire.
– Step 3: Remove or reduce the risks of fire as far as possible and take precautions.
– Step 4: Prepare for an emergency with fire safety equipment, by providing correct training and having a plan of which everyone is aware.
– Step 5: Record any findings and regularly review the assessment to keep it up to date.

The risk assessment should be recorded at all stages, including the actions you have taken along the way. If you hire five or more members of staff, it is a requirement to have written proof that you have fulfilled your duty as a responsible business owner.

Fire prevention is far easier than trying to recover from a fire.
Evaluate and act

Having now identified all of the potential problems and hazards that are present in your dental surgery, you can now take the relevant action to take precautions to reduce those risks as far as practically possible. The most reliable solution is installing fire detectors throughout the building and using smoke and heat detectors, along with call points, as part of a fire alarm system. When the alarm sounds, fire exit signs will then direct people to safety while emergency lighting illuminates that route to keep people safe, no matter what.

Having the correct fire extinguishing equipment installed throughout the premises is one of the best ways you can prepare. Fire blankets in the kitchen area will help tackle small fires with little mess or hassle, while fire extinguishers are best in waiting rooms, corridors, offices and treatment rooms. Water extinguishers are suitable for general fires, including paper, cardboard, rubbish and furnishings, whereas foam extinguishers can be used for flammable liquids. Powder extinguishers are versatile, lighter and safer to use around electrical equipment and flammable liquid and gas. However, they can affect visibility and breathing, so should be mitigated by a health and safety risk assessment if specified for indoor use. On electrical equipment, carbon dioxide extinguishers are the safest method and will prevent further damage to the electronics.

Each extinguisher needs to be partnered with an extinguisher identification sign and should be commissioned upon installation and then serviced annually by a trained professional.

Record, plan, inform, instruct and train

In order to deal with any fire situation, you need to have an emergency plan. This means that all staff will know what to do and ensure the premises are safely evacuated. Further ensure all new staff are informed of this and that it is easily accessible for anyone to view.

You will need to select at least a few members of staff you trust to take on fire warden responsibilities. Once they have received the appropriate training, you should then have plenty to ensure there is always a fire warden present in spite of sickness and holidays. The purpose of fire wardens is to help educate the other staff, besides taking charge in the event of an emergency. Their training will help them to act appropriately and calmly in a fire situation and to oversee the evacuation. They will also be on hand to help you with your fire safety duties, such as preparing visual checks of equipment and leading fire drills to test the effectiveness of your procedures, and to help familiarise staff with the plan.

Lastly, inform all staff on how to use the fire extinguishing equipment in your surgery.

Review

A risk assessment is never finished, and you should constantly monitor what you are doing to see how effectively the risks are being controlled. It also needs updating should there be a change in building layout or the activities that are carried out. Acquiring a new piece of equipment may seem like just a small change, but together, a few small changes can have a significant effect. That is why many fire services recommend reviewing the assessment at least once a year so you know it is up to date.

The ultimate responsibility for complying with the Regulatory Reform (Fire Safety) Order 2005 falls to the owner of the dental practice. He or she can either carry out the fire risk assessment herself or himself or ask a competent individual to assist. Many business owners choose to hire professional risk assessors to complete it on their behalf. This not only saves them time and effort, but also gives them the peace of mind that it has been done correctly and that no risks have been overlooked.

Stuart Colley is a staff writer for Fire Protection Online in Hersden near Canterbury in the UK. He can be contacted at stuart@fireprotectiononline.co.uk.
Professionalism in dentistry

By Tim Bradstock-Smith, UK

Professionalism has been defined as the conduct, aims or qualities that characterise or mark a profession or a professional person. Literature pertaining to health care suggests that professionalism is a competency that can be taught, developed, measured and assessed. Nevertheless, it can be argued that professionalism extends beyond the scope of clinical knowledge and skills and is most certainly multifaceted.

Professionalism includes working within a regulatory framework with adherence to ethical practice; situational judgement and awareness; the ability to interact and communicate with patients as well as inter-professionally; and the commitment to continually enhance and improve the knowledge, values, skills and understanding required to provide consistently high-quality dental care.

As every dental professional is aware, continual development and progression are essential in every part of the industry. However, with the rapid advancements we are seeing year on year, it may not be possible to keep abreast of everything. As such, practitioners should at least make the effort to be familiar with clinical and technical innovations that may potentially affect their practices. While this may seem like being a perpetual student, it is the personal responsibility of every dental professional to remain up to date with all the relevant skills and experience they need to maintain clinical competency, as well as gain confidence in those acquisitions in order to strengthen their professional judgements.

Continual development and progression also enable practitioners to build on their abilities and capabilities to pursue a particular area of interest or to strengthen their treatment portfolio. For example, the demographic of a practice may reveal high periodontal disease rates, which would mean that enhancing skills in this area would be advantageous for both the clinician and the dental practice. Alternatively, with the rising demand for areas of dentistry such as short-term orthodontics and aesthetic solutions, some practitioners may wish to extend their expertise into these areas. Nevertheless, learning how to apply skills, knowledge and experience to treatment with sound judgement is critical to the provision of professional dental care.

Judgement, at its simplest, is forming an opinion. Yet, when applied to dental care, it becomes part of a process that involves weighing up all the clinical facts and treatment options with their advantages and risks, as well as interaction between the practitioner and the patient, to come to the most appropriate method for treatment.

Most would agree that well-informed, engaged patients are in a stronger position to decide between treatment options and are more likely to take ownership of the final treatment decision and results. Research suggests that patients seem to prefer this collaborative approach, with the patient and the dentist equally sharing responsibility for decision-making. Consequently, practitioners require interpersonal competency to communicate with and relate to patients by listening, understanding, and providing complete and honest information. For instance, discussing a treatment plan step by step can help the patient to understand and appreciate the reasons for and the health benefits of each procedure. Fundamentally, this enables the patient to make an informed decision before consent and, by developing a plan of action together, the patient–practitioner relationship is enhanced with trust and confidence, and this is more likely to result in patient satisfaction.

This does not necessarily mean that one practitioner should be able to perform all areas of treatment. Part of acting with professionalism is the ability to recognise our individual capabilities and knowledge that there will always be cases that are beyond our skills or the technological parameters of a practice. This could be due to the particular needs of the patient or the complexity of the treatment required. Yet, whatever the reason, having the professional judgement to refer a patient to another dental professional with the relevant skills and facilities is essential. By requesting the skills and services of clinicians that perhaps specialise in a specific area of dentistry or by utilising the advanced technology of another practice, it is possible to add value in terms of accuracy and outcome, but it also extends the scope and professionalism of the practice.

When it comes to referring patients, it is of course imperative to work with dental professionals that can be trusted to deliver first-class dentistry. It is a good idea to look around. The London Smile Clinic, for example, is a dedicated referral practice with a team of highly qualified dentists that strive to provide a five-star dental service to referring dentists and their patients. As a centre of excellence in dentistry, the clinic offers an efficient and streamlined pathway for all types of complex treatment, including endodontics, orthodontics, prosthetics and implants.

Developing the trust of patients is one of the most important attributes of professionalism, according to Bradstock-Smith.

Learning how to apply skills, knowledge and experience to treatment with sound judgement is critical to the provision of professional dental health care.

Editorial note: A complete list of references is available from the publisher.
Straumann successfully concludes digital dentistry roadshow

By DTI

MANCHESTER, UK: Swiss company Straumann has massively expanded its digital workflow solutions over the past few years. At the recent International Dental Show in Cologne, for example, 3D printers, which were created through a partnership with German developer Rapid Shape, were added to its already extensive portfolio. At a roadshow recently held in several locations throughout the UK, dentists and technicians had the opportunity to get their hands on the company’s new products and find out how these could benefit their practices.

In addition to the new P Series 3D printer, which garnered the most interest according to Straumann’s Marketing Director Justin Annett, the company had all of its digital equipment on display, including the Straumann CARES IO Portable Intraoral Scanner, the desktop lab scanner and the milling system series. Participants were also able to get their hands on the TRIOS intraoral scanner from 3Shape, which is used for taking powderless chairside impressions and has been available from Straumann since March, thanks to a new distribution agreement. Overall, the 10-day digital performance roadshow took place in seven locations across the UK including London, Coventry and Leeds. The roadshows consisted of product demonstrations presented by Straumann staff and clinical experts inside a purposely built 2,000 horse power truck.

“The feedback to this has been extremely positive,” Annett told Dental Tribune at the event in Manchester last week. “In addition to a high number of labs and technicians who are already using our equipment and are looking for new areas to invest in, we had a lot of participants who are completely new to the digital workflow.”

According to Annett, however, the tour was about far more than having products on display. “With this roadshow we are able to not only showcase our latest solutions for a digital workflow, but also explain in detail how it can benefit every single practice. And we offer some great deals on the products too,” he said.

Straumann has invested heavily in digital solutions in the last few years. Under the CARES umbrella, equipment, state-of-the-art materials and digital technology have been combined with the aim to offer dental professionals an efficient and validated workflow, whether they just need something for their case planning or want to produce customised dental prosthetics in-house. The compact, yet powerful Straumann CARES M Series milling and grinding system, for example, allows the dentist to mill almost any kind of prosthetics from a wide range of materials, including zirconia, glass ceramic or PMMA. With its comprehensive portfolio that also includes an outsourced scan and design platform, Scan & Shape, the company is now able to offer a digital workflow for almost any practice or lab in the country.

“Dentistry always used to be a bit behind in the implementation of digital technology. In the last few years, however, we have seen a real explosion of interest,” Annett said. “Straumann is well-positioned for the future as it not only offers a full digital portfolio, but also the support that, especially beginners, need.”

Straumann already has plans for another tour that will probably take place next year. Dates will be announced on the Straumann website, where professionals can also find more information about the company’s digital portfolio and product offering.

Join the largest educational network in dentistry!
CARDIFF, UK: Together with the Norwegian biopharmaceutical company AlgiPharma, researchers at Cardiff University have been working on new drugs to combat antibiotic-resistant diseases and infections. In the study, the team at the School of Dentistry has shown how alginates—found in seaweed—can disrupt the formation of microbial biofilms. Biofilms form when a community of bacteria assemble in some form of watery environment, begin to excrete a glue-like substance and adhere to a surface. Biofilms have been found to be involved in a wide variety of microbial infections in the human body. An example is dental plaque, which can lead to caries and periodontal disease if undisrupted.

In an interview with Dental Tribune International, study leader Prof. David Thomas explained that specialised alginates work in two ways: “Firstly, they directly interact with the ‘sticky’ biofilm matrix, which encases the bacteria, and modify the biofilm’s structure by binding to calcium. These effects make the biofilm less robust and more easily disrupted. Secondly, they work directly on the bacteria themselves, changing their expression of quorum-sensing molecules (which control biofilm development) and making them more sensitive to the effects of conventional antibiotic therapy.”

The researchers have used the information about how alginates work to develop an inhalation therapy being tested on cystic fibrosis patients. If successful, the treatment could be applied to help clear mucus obstructions in the lungs and potentially slow the progression of the disease. In addition, it could be used in other, more common respiratory diseases, such as chronic obstructive pulmonary disease. The studies are also paving the way towards improved treatment of chronic skin wounds and combat of organisms that cause periodontal disease, for example.

Thomas explained that “the alginates may be useful in dentistry as an adjunct in the management of chronic biofilm infections”, such as “peri-implantitis, where the non-toxic agent may be applied directly to aid disruption of biofilms and stop biofilms reforming on treated surfaces”.

The project was launched with funding from AlgiPharma in 2007 for exploratory microbiology studies, but developed into a nine-year collaboration between the university’s Advanced Therapies Group (ATG), AlgiPharma, and Cardiff and Vale University Health Board. The ATG’s collaborative network helped attract researchers with expertise in specialist areas, paving the way for human clinical studies across the EU and Scandinavia.

Dr Philip Rye, Research and Development Director at AlgiPharma, said: “The collaboration has enabled us to make significant advances in the development of a new drug, which is now in human clinical studies, and has recently been included in the US Cystic Fibrosis Foundation drug development pipeline.”

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The project was a winning finalist in Cardiff University’s 2017 Innovation and Impact Awards.
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Digitising your implant practice

By Dr Ross Cutts, UK

Undoubtedly, digital dentistry is the current topic. Over the last five years, the entire digital workflow has progressed in leaps and bounds. There are so many different digital applications that it is sometimes difficult to keep up with all the advances. Many dentists are excited about the advantages of new technologies, but there are an equal number who doubt that the improved clinical workflow justifies the expense.

I have many times heard the argument that there is no need to try to fix something that is not broken. It is so true that impressions have their place and there are certainly limitations to the digital workflow that anyone using the technology should be aware of. For me, however, the benefits of digital far outweigh the disadvantages. In fact, the disadvantages are the same as with conventional techniques.

Chairside CAD/CAM single-visit restorations have been possible for over 20 years, but it was only recently that we became able to mill chairside implant crown restorations after the release of Variobase (Straumann) and similar abutments. I made my first CEREC crown (Dentsply Sirona) back in 2003 with a powdered scanner, and the difference from what I remember then to how we can make IPS e-max stained and glazed restorations (Ivoclar Vivadent) now is amazing.

An investment not an expense

The results of a survey regarding the use of CAD/CAM technology were published online in the British Dental Journal on 18 November 2016. Over a thousand dentists were approached online to take part in the survey and the 385 who replied gave very interesting responses. The majority did not use CAD/CAM technology, and the main barriers were initial cost and a lack of perceived advantage over conventional methods.

Thirty per cent of the respondents reported being concerned about the quality of the chairside CAD/CAM restorations. This is a valid point. We must not let ourselves lose focus that our aim should always be to provide the best level of dentistry possible. For me, digital dentistry is not about a quick fix; it is about raising our performance and improving predictability levels by reducing human error.

In the survey, 89 per cent also said they believed CAD/CAM technology had a major role to play in the future of dentistry. I really cannot imagine that once a dentist has begun using digital processes that he or she would revert to conventional techniques.

What is digital implant dentistry?

Many implant clinicians have probably been using CAD/CAM workflows without even realising it, as many laboratories were early adopters, substituting the lost-wax technique and the expense of gold for fully customised cobalt-chromium milled abutments.

One of my most important goals in seeking to be a successful implantologist is to provide a dental implant solution that is durable. We have seen a massive rise in the incident of peri-implantitis and have found that a large proportion of these cases can be attributed to cement inclusion from poorly designed cement-retained restorations.

Even well-designed fully customised abutments and crowns can have cement inclusion if the restoration is not fully fitted. This has led to a massive rise in retrievability of implant restorations, with screw-retained crowns and bridges now being the goal. However, making screw-retained prostheses places even greater emphasis on treatment planning and correct implant angulation.

With laboratories as early adopters, we have been milling titanium or zirconia customised abutments for over ten years. What has changed recently in the digital revolution is the rise of the intra-oral scanner. We now have a workflow in which we can take a preoperative intra-oral scan and combine this with a CT scan using coDiagnostiX (Dental Wings) in order to plan an implant placement accurately and safely. We can also create a surgical guide to aid in accurate implant placement, have a temporary crown prefabricated for the planned implant position and then take a final scan of the precise implant position for the final prosthesis.

Accuracy of intra-oral scanners

Figures 4–13 show the workflow for preoperative scanning, which includes the implant design, guide fabrication and surgical placement of two fixtures. Intra-oral scanners have improved over the last few years, and their accuracy and speed provide a viable alternative to conventional impression taking. The digital scan image comes up in real time and you can evaluate your preparation and quality of the scan on the screen immediately. Seeing the preparation blown up in size no doubt improves the technical quality of your tooth preparations.

While we do not think of intra-oral scanners as being any more accurate than good-quality conventional impressions, there are many benefits of scanning, such as no more postage to be paid for impressions, vastly reduced cost of impression materials, almost zero re-impression rates and absolute predictability.

Of course, there are steep learning curves with the techniques, but once a clinician has learnt the workflow, there really is no looking back.

We have three different scanners in the practice: the iEVO (Align Technology), the CEREC...
Omnicam (Dentsply Sirona) and the Straumann CARES Intraoral Scanner (Dental Wings; Fig. 14). The CEREC Omnicam is fantastic for simple chairside CAD/CAM restorations, such as IPS e.max all-ceramic restorations on Variobase abutments. For truly aesthetic results, we, of course, still have a very close working relationship with our laboratory, but, undoubtedly, patients love the option of restoration in a day. Being able to scan an implant abutment and then an hour later have their tooth being milled in the lab, while watching the production process as it occurs, and then see their tooth being milled from an IPS e.max block, is a game-changer. Patients also love the option of restoration in a day.

Choosing your workflow

Choosing your digital workflow. We invest in the iTero scanner five years ago and have used it for everything, from simple conventional crowns and bridges to scanning for full-mouth rehabilitations. When fabricating definitive bridgework, we use Createch Medical frameworks for screw-retained CAD/CAM-milled titanium and cobalt–chromium frameworks. Even though intra-oral scanning appears extremely reproducible and accurate, I still use verification jigs where needed to ensure our frameworks are as accurate as possible. There are many intricacies that we consider and tips and techniques that we employ to make the scans more accurate. There are many different systems on the market now, each offering for stents, temporaries and definitive restorations, and now orthodontic planning software. I am convinced there will be yet more advances with time. The size of the camera is critical — some can be very cumbersome — and it is worth asking the salesperson what developments are underway.

Figure 20 shows a CBCT volume to aid in planning for mandibular implant placement and realising the implant placement (Fig. 23). We exposed the fixtures and placed Straumann Mono Scanbodies (Fig. 22). Then, we took an iTero scan of the fixtures in situ (Fig. 23) and made a verification jig from this (Fig. 24) to ensure passive implant positioning. The iTero models were made (Fig. 25) and a Createch titanium framework was used to support porcelain in a screw-retained design (Fig. 26). The last two figures show the excellent outcome and accurate framework seating (Figs. 27 and 28).

Software. We extract our files into CT planning software, model production software, chairside milling for stents, temporaries and definitive restorations, and now orthodontic planning software. I am convinced there will be yet more advances with time. The size of the camera is critical — some can be very cumbersome — and it is worth asking the salesperson what developments are underway.

Some companies are more on the cutting edge than others. My favourite at the moment is the Straumann scanner. Its design is light and user-friendly and it synchronises perfectly with coDiagnostiX implant planning software. Furthermore, while it offers a chairside milling unit, it also synchronises perfectly with my laboratory for larger cases.

To conclude, digital implant dentistry is the future and so why not take advantage of it and help improve your clinical outcomes?

Dr Ross Cutts is the principal dentist at Cirencester Dental Practice in Cirencester in the UK. He can be contacted at cuttsrg@aol.com.
Dynamic navigation for precise implantation in cases of critical anatomy
By Dr David Burgess, UK

Introduction
Using the CBCT image as a map, dynamic navigation guides surgeons just like a GPS guides drivers. The clinician virtually plans where implants should be placed. During surgery, the navigation system dynamically tracks the drill and the patient’s jaw, providing guidance and visual feedback to ensure the implants are placed according to plan.

There are several advantages with dynamic navigation. The technology allows clinicians to place implants more accurately than free-hand. This results in improved safety and aesthetics, as it helps the clinician to anticipate and to avoid potential complications. Other advantages are the ability to have more minimal invasive treatments, which means less chair time, less patient discomfort and less recovery time. This treatment option has generally been seen as a “blind” procedure in the past, but the ability to avoid delicate anatomical structures due to the real-time surgical feedback makes so-called flapless surgery a valuable option.

In the following case report, Dr David Burgess describes how using computer-guided dynamic navigation helped him overcome clinical challenges for dental implant placement in the lower posterior region.

Case report
A 75-year-old male patient had endured a gap for five years, following removal of his lower left second molar, due to an acute apical infection. He was finding mastication increasingly difficult and sought advice about the treatment options available.

Planning for optimum implant positioning
As there was no tooth distal to the space, conventional fixed bridgework was not possible. The treatment options were either a unilateral single saddle lower partial denture or restoration of the space with two dental implants. The patient chose to have dental implant treatment as he did not wish to have any form of removable prosthesis.

What makes Navident dynamic navigation stand out is it precisely guides the surgeon to prepare and place the implant in a pre-determined position (Fig. 1). This allows me to achieve greater accuracy and certainty than I have previously been able to, using conventional protocols. Whilst there is no physical guide, a simple scanning template (NaviStent) is used to hold the fiducial in place whilst taking the CT scan, and secure the jaw reference (JawTag) for the navigated osteotomy.

In this case, the NaviStent was fabricated, the fiducial marker attached and a CBCT scan taken two weeks prior to surgery (Fig. 2). The treatment plan was created immediately after the scan (Fig. 3), with the patient present. He was able to see the proposed treatment displayed by the Navident software and appreciated that great care was being taken to achieve the optimum implant positioning, with minimal risk of potential complications (Fig. 4). The patient was impressed with, and reassured by, the state-of-the-art technology.

Confidence from continuous feedback
Treatment was carried out under local anaesthesia. Prior to preparation of the implant sites,
Dr David Burgess
BDS DPDs MScConSed
has been principal of Carbis Bay Dental Care in Cornwall since 1988 and has placed over 2,000 implants. Throughout his career, David has striven to combine clinical perfection with the ultimate in patient care. He has been a willing pioneer of new technology, particularly in the field of digital dentistry. David was the first UK clinician to introduce the Navident dynamic navigation system into his implant treatment workflow, with the objective of achieving a higher degree of precision and greater patient comfort. David Burgess is also a member of the Dynamic Navigation Society as a Master Clinical Trainer, providing courses for implantologists who wish to experience how dynamic navigation can help to simplify their digital workflow. More information can be found on http://dns.claronav.com.

Fig. 1: An illustrative image of Dr Burgess using Navident.

Fig. 2: A CBCT scan was taken two weeks prior to surgery.

Fig. 3: The treatment plan was created immediately after the scan.

Fig. 4: The patient was able to see the proposed treatment displayed by the Navident software.

Fig. 5: The author was able to achieve the best buccal and lingual position of the implants, and their relation to each other and to adjacent teeth.

Conclusion

The clinical outcome was excellent. The planned placement was restoratively driven and the implants were well positioned, with good primary stability. Having used the Navident dynamic navigation system for more than a year, the author would not want to go back to preparing and placing dental implants without its 3-D visual guidance. The patient was comfortable and reassured, with no postoperative pain, swelling, bruising or paraesthesia. He was delighted and, if he needed any implant treatment in the future, would insist on dynamic navigation.
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