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Editorial

WITH BRUCE OXLEY, EDITOR →
Get in touch with Bruce at
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CREATING A SAFE SPACE ONLINE

How the internet can be a force for good in dentistry

The internet age has brought about innumerable advances, some good and some bad. On the one hand, it can make the world seem a much smaller place and help us communicate with people no matter where they are on the planet. On the other hand, it has given rise to things such as cyber bullying, trolling and other nefarious online activities.

And, while dental professionals can take advantage of the wonders of the web to book appointments, refer patients, send digital files from intra-oral scans to labs, collaborate with colleagues across the globe etc, there are other benefits and pitfalls to be considered.

There are a number of dental-only forums, message boards and Facebook groups that have been created to give dentists the opportunity to chat, discuss and in some cases argue. Some are small and niche, while others try to include as many dental professionals as possible.

The topics are not always dental related but, for many clinicians, these sites provide a way of expanding horizons and keeping the feelings of isolation at bay. Some use them to let off steam, others to ask for and give advice, while others try and create debates about clinical issues, problems in practice, personal problems or even to discuss the news of the day.

However, when dentists Nicola McMillan and Lauren Harrhy got chatting online, they realised that there wasn't a site, group or forum specifically designed for dentists with problems. Nicola, who is based in Glasgow and Lauren, who hails from Newport in south Wales, both had similar experiences witnessing colleagues in trouble and they both knew of and had been in contact with dentists who had subsequently taken their own lives, seemingly as a result of the pressures of the job.

So, they decided to create a closed Facebook group for dentists, a place where they could go to air concerns, talk about worries and highlight problems in their lives. Lauren installed Nicola as the first admin and there are now 15 dentists looking after the group and even helping dentists post anonymously so they can speak freely and not worry about any potential repercussions.

Both had similar experiences witnessing colleagues in trouble and knew dentists who had taken their own lives

The group has grown quickly and now has more than 2,100 members, proving there was a genuine need for a safe space where they can discuss and get perspective. The group acknowledges that it isn't the place for professional mental health or legal advice, but just as a place to share stories and experiences, it has proven to be absolutely invaluable.

WE COULDN'T HAVE DONE IT WITHOUT...

1

ALAN WHITTET
(ON HIS NEW ROLE AT PSD)
Alan qualified from Edinburgh Dental School in 1984 and has spent the majority of his time in practice as an NHS-committed dentist.

2

ALAN WALKER
(ON HIS CAREER IN DENTISTRY)
The recipient of this year's Scottish Dental Lifetime Achievement Award worked for 27 years in general practice and more than 20 at NES.

3

KYLE ANDERSON
(ON HIS DCP STAR AWARD)
Kyle Anderson has come a long way since he was taken on as an apprentice dental nurse in 2013. He is about to start a degree in oral health science.

4

SAMANTHA RUTHERFORD
(ON SDCEP GUIDANCE)
Samantha is a research and development manager for guidance development within the Scottish Dental Clinical Effectiveness Programme.

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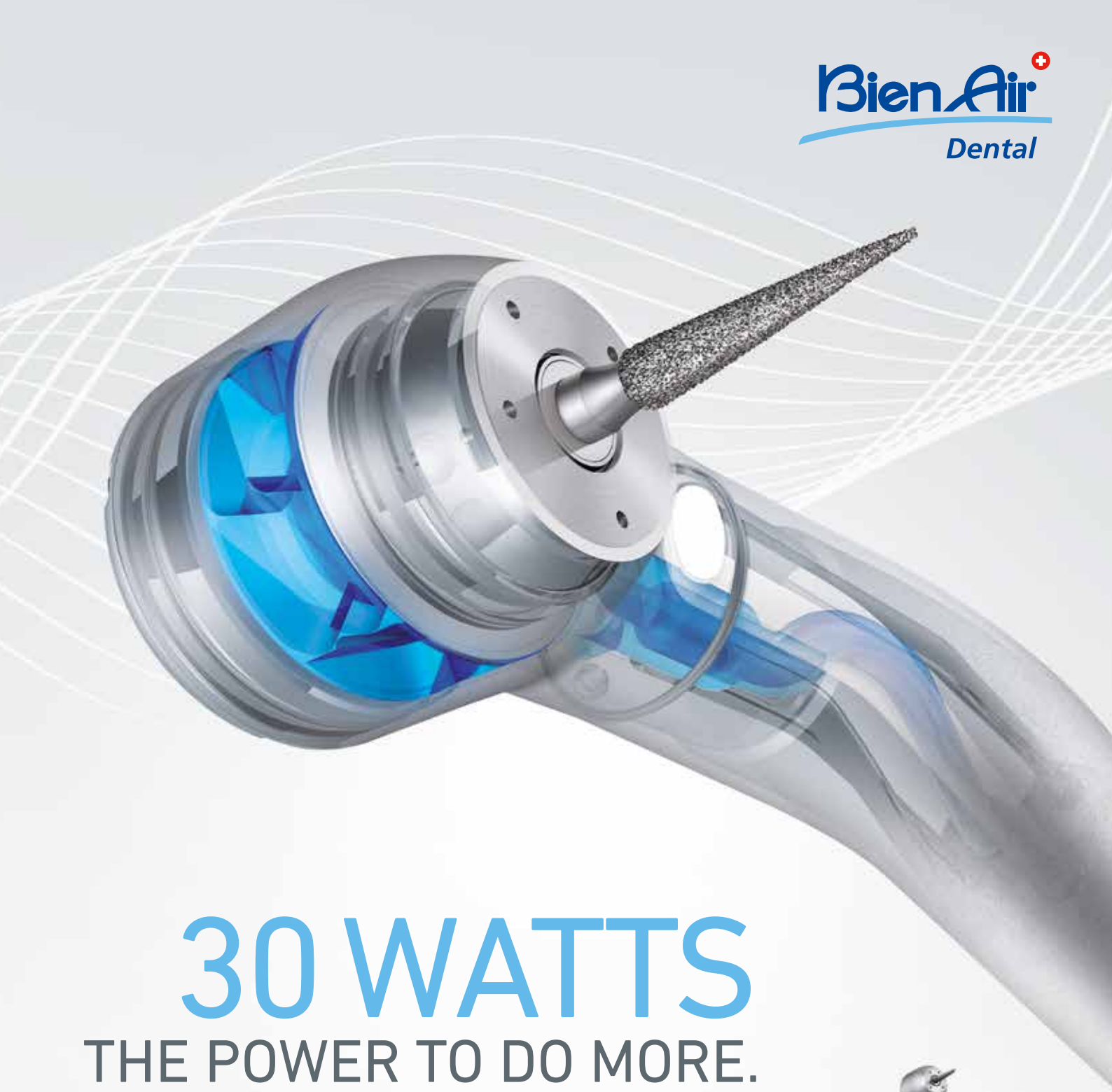

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HAVING HIS SAY →
Arthur Dent is a practising NHS dentist in Scotland
arthurdent@sdmag.co.uk

WHY STAND FOR ELECTION?

Arthur ponders the many and varied reasons why dental professionals decide to stand for election to committees and representative bodies

Sometimes it can be for a genuine desire for the common good, sometimes for advancing one's own cause, and probably sometimes a combination of the two. A desire for power and advancement can also be an influence.

With the current electoral system for general elections, many people feel that their vote will not make a difference. Fife North East was won by the SNP with a majority of just two over the Liberal Democrats. This was a general election where every vote mattered. And it appears that we all enjoyed it so much it is predicted we will have another in the next year.

Dental politics are different. I hope.

There are two ways in – through Local Dental Committees (LDC) and through the British Dental Association.

Depending on your constituency, your LDC may be looking for more members. This would give you a good foothold into what is happening locally – and Scottish Dental Practice Committee (SDPC) has seats from each LDC constituency (slightly different from health boards). If there is no LDC, perhaps you could start one? Every health board must have an Area Dental Committee, and if you are in a geographically disparate area you could consider holding these online. Greater Glasgow and Clyde LDC historically holds a great deal of power as it is by far the biggest constituency – and many of the dental big hitters over the years started their political career there. They also send the largest number of delegates to the LDC conference.

As with general elections, if you don't get involved, you can't complain

The Scottish Conference of LDCs also sends some members directly – current chair of conference, chair elect, and one member directly elected from conference.

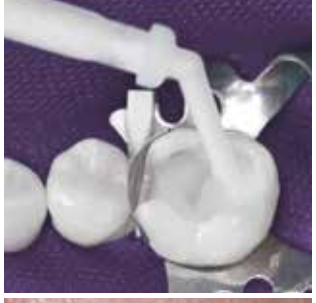
Those who attended LDC conferences will note that there is an almost even split between men and women, quite a number of dentists under the age of 35, and some dentists from black and minority ethnic groups. Prior to this year's conference, SDPC had two women. Happily this has increased due to elections from conference. A recent quote I heard (in reference to the new *Wonder Woman* film) was "if she can see it she can be it". No-one looking around the usual SDPC makeup of white middle aged men would think it would be welcoming to the above groups. However, we look forward to the change, and hope that SDPC becomes increasingly inclusive.

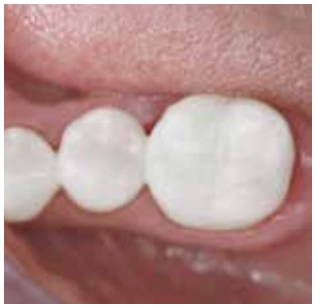
Another area in which it could become more representative is in the number of dentists who carry out a high proportion of NHS work – many who sit on SDPC carry out a lot of private work.

What I would like to see on SDPC are seats that can only be held by someone for three elections before they are forced to come off. I would like to see a set number required to have an NHS commitment of more than 90 per cent. I would like to see at least 50 per cent women. I would like better representation of associates and the corporates.

Unfortunately none of this is possible when few seats on SDPC are fought at an election – and some remain unfilled. Getting involved with dental politics can let you help change the profession, for the better, for everyone. As with general elections, if you don't get involved, you can't complain. We need you!

Every vote counts when electing our committees and representative bodies





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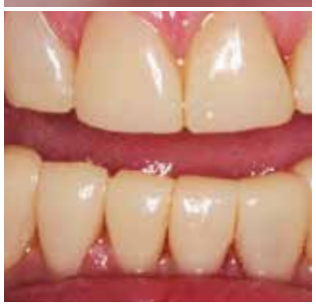

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Professor Brian Millar

BDS (Dundee) FDSRCS(Eng) PhD (Lon) FHEA

Professor of Blended Learning in Dentistry at King's College London and NHS Consultant in Restorative Dentistry at the King's College London Dental Institute at Guy's, King's and St Thomas' Hospitals. Specialist in Prosthodontics and in Restorative Dentistry. Programme Director for the internationally popular MClinDent (Fixed & Removable Prosthodontics) and in the past set up the highly successful MSc programmes in Aesthetic Dentistry and also Advanced General Dental Practice by blended learning at the KCL Dental Institute.

Over 35 years experience in clinical practice and currently an active specialist clinician in both hospital and private practice, particularly in treating tooth wear, aesthetic and occlusal problems utilising MI philosophies where possible.

Experienced teacher to undergraduates and postgraduates and well-known provider of postgraduate education nationally and internationally at conferences through lectures, seminars, webinars and hands-on courses.

Published over 180 papers, supervised over 200 PhD and Masters students, involved in setting up MOOCs with over 20,000 students. As well as the silencing the dental drill, research includes management of occlusal problems using MI techniques, bringing together aesthetics and function with a focus on tooth preservation.

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ORAL HEALTH PLAN PLEDGED THIS YEAR

Scottish Government promises to publish new vision of the future direction of NHS dental provision

A new Oral Health Improvement Plan will be published by the end of the year according to the Scottish Government.

Chief Dental Officer Margie Taylor announced the intention in her introduction to the government's recently published document outlining the results of the Scotland's Oral Health Plan consultation. She said: "The next step in addressing these challenges will be to produce an Oral Health Improvement Plan which will provide NHS dentistry with a new overarching approach. Prevention must be at the forefront of these plans, recognising that stakeholders – individuals, carers, parents, teachers at all levels, health and social care staff and the dental team – all need to contribute to good oral health outcomes.

"The Oral Health Improvement Plan will be about addressing new challenges so that patients and service providers have confidence there is strategic leadership and direction from the Scottish Government for the future of NHS dental provision."

The consultation, which ran from September to December last year, received a total of 427 responses, 347 from individuals and 80 from organisations. Of the individuals, 245 were dentists, 32 were dental care professionals and 45 were members of the public.

When the consultation closed, Robert Donald, chair of the Scottish Dental Practice Committee, argued that, despite having 33 proposals, it was "short on detail". He supported the government's focus on prevention and stated that: "We have an opportunity to deliver a real UK first with preventive pathways... However, it is unclear how further breakthroughs can be achieved without appropriate funding."

The results of the consultation seemed to reflect this, with funding and remuneration being highlighted regularly in the comments section. However, while the results document only published a summary of the comments for each question and not the comments in full, answers from respondents who gave permission have been published online at consult.scotland.gov.uk/dentistry-division/oral-health-plan/

NOW TRENDING

20%

FACT
A fifth of over 45s in Scotland have false teeth *

* Source: March 2017 survey of 1,000 adults aged 45+ conducted by 72 Point on Behalf of Oasis Dental Care

SD SHOW WINNERS GET SMART

The winners of the Scottish Dental Show 2017 registration prize draw have been announced, with two practice managers from England and Scotland each receiving an Amazon Echo smart speaker.

Aline Michaels from Bovingdon Dental Practice in Hemel Hempstead made the near 400-mile trip to Braehead Arena in May and her name was the first to be pulled out of the hat. She was joined by Susie Anderson-Sharkey, of Dental fx in Bearsden, who said: "I am absolutely delighted to have been the lucky winner of the Amazon Echo through the recent Scottish Dental Show. Never having used an Echo, I was excited to set it up and start asking Alexa to perform various tasks. The novelty has still not worn off, hubbie has a new pal to talk to all day and my friends visiting are more interested in engaging with Alexa than with me!

"A huge thank you to the Scottish Dental Show and I'll see you again next year."

Susie with her new Amazon Echo

FIRST DENTAL NURSE DEGREE COURSE

New College Lanarkshire pioneers qualification

The first degree course for dental nurses in the UK has been launched in Scotland in an effort to increase professionalism and future proof careers.

The BSc Dental Nursing course has been created by New College Lanarkshire and validated by the University of the West of Scotland (UWS) in response to demand from within the industry.

The degree programme will be offered to students who have a HND

or equivalent in dental nursing in partnership with UWS – the first model of its kind for its School of Health, Nursing and Midwifery.

Jennifer Lowe, assistant head of faculty for care and science at New College Lanarkshire, said: "The BSc Dental Nursing was developed in response to demand from dentists as employers, dental nurses and dental nurse training providers that dental nurses should be qualified to degree level and beyond."

Karen Wilson, dean of UWS's School of Health, Nursing and Midwifery, said: "The university enjoys extremely close links with New College Lanarkshire and we are delighted to have validated this programme which has been developed in response to demand from the dental sector."

The part-time course is held over two academic years and learners will attend New College Lanarkshire's Coatbridge Campus for one day per week spanning two academic years – allowing students to study while on the job.

ONLINE MENTAL HELP FOR DENTISTS

Facebook group established to provide support for colleagues in crisis

A dentist from Glasgow has been instrumental in setting up an online dental forum aimed at helping dentists in mental health crisis.

Nicola McMillan, a Glasgow graduate who works as an associate in NHS general practice, was installed as the first administrator of the Facebook support group 'Mental Dental – A Group For Dentists in Crisis' by the founder, Welsh dentist Lauren Harrhy.

The group was created after Nicola and Lauren realised there were precious few places where dentists could easily find support if they were feeling stressed. Nicola revealed that she is aware of at least three dentists who have taken their own lives, one a victim of alcoholism. She had also heard of numerous dentists who had left the profession due to its pressures. She said: "I was speaking to Lauren about this and she said 'I can't do this anymore. I can't watch our colleagues die or leave the profession due to stress or even suffer like this. We need to do something about it.' So, she started Mental Dental and put me as the first administrator."


Nicola McMillan

In just two weeks, the group attracted more than 1,700 members, and at the time of writing there are now 2,100 members signed up. Nicola said: "The aim is basically to support dentists in their mental health but never to advise, because we are not in a position to advise. Just simply to support, provide reference or collate data on different places that can help dentists. Basically, we provide an ear to whinge at or a shoulder to cry on."


Lauren Harrhy

Asked if she was surprised by the group's success, she said: "I'm surprised by how quickly it grew; the word of mouth was quite impressive. But, I'm not surprised that there are this many dentists feeling this way. This is not a shock to me at all."

MORE INFORMATION
To find out more about the group, search for 'Mental Dental' on Facebook.

GOVERNMENT FAILS TO FOLLOW THROUGH ON REFORM PROMISES

BDA criticises absence of regulatory shake-up from new parliament's legislative programme

The BDA has expressed its disappointment over the UK Government's failure to deliver on promises to reform the systems of patient protection in the lifetime of this parliament.

The Conservatives' 2017 manifesto pledged to introduce primary legislation on healthcare regulation, but it was conspicuously absent from the 2017-2019 legislative programme.

BDA chair Mick Armstrong said: "Ministers have again failed to make time to fix a broken system overseeing a million health professionals serving tens of millions of patients. After making unambiguous commitments to deliver new legislation, the government has chosen to kick needed reform into the long grass.

"Healthcare regulation remains grotesquely inefficient and ineffective, and when complaints arise patients and practitioners can be left in limbo for years. We urgently require a system that can command professional and public confidence.

"Britain's health watchdogs have presided over failure, secrecy, and ballooning budgets. Ministers will need to explain why they have failed to act on patient protection, when needed reforms could have commanded cross-party support."

The association continued by saying that the GDC has "routinely languished at the bottom of the league table for performance of health watchdogs".

Recent surveys have shown that as many as 87 per cent of dentists lack confidence in the regulator's ability to reform itself.

NEVER BRUSH YOUR TEETH AGAIN

A revolutionary "fully automatic' toothbrush that can brush your teeth in just 10 seconds has been launched on Kickstarter – and was fully funded within an hour.

The Amabrush was launched on 5 July in San Francisco and reached its $50,000 target in less than 60 minutes. At the time of writing the project has more than 10,000 backers who have all pledged a total of more than €1.2 million.

The new toothbrush was designed and developed by a team of biotech engineers and healthcare experts including Dr Hady Hariran form the Medical University of Dentistry in Vienna. Founder and CEO Marvin Musialek said he wants to "simplify the toothbrushing routine many people are annoyed with". He continued: "Amabrush is a true game changer since the toothbrush itself. We all will never ever have to brush our teeth anymore."

MORE INFORMATION
To find out more, visit www.amabrush.com

TEAM SCOTLAND APPOINTS OFFICIAL DENTIST FOR COMMONWEALTH GAMES

Glasgow practice will make sure athletes are in peak dental health for Gold Coast 2018

A Glasgow clinic has become the first official dental practice for Team Scotland and will be supporting athletes in the build-up to the 2018 Commonwealth Games in Australia.

The Park Practice in the West End will be tasked with making sure the athletes selected for Gold Coast 2018 are in peak dental health and that those taking part in contact sports have the best and most appropriate dental protection in place.

Practice principal Mike Blackie launched the partnership with a briefing at Scotland's Commonwealth Youth Games Team Camp in June ahead of the event that took place in the Bahamas in July.

He said: "The opportunity to work with Team Scotland combines my dual passions of dental health and sport in an exciting way. I am looking forward to developing the partnership over the next few years and seeing how I can support Scotland's Commonwealth Games athletes to optimise their dental health."

Mike Blackie and boxer Megan Gordon

A former rugby player with GHL and Glasgow Hawks, Mike also worked as part of the medical team for the London 2012 Olympic Games supporting combat sports, was involved at Glasgow 2014 with the rugby sevens and has also worked with two premiership football clubs.

He said: "My role has developed to include oral health assessments, education on the potential impact of sugar levels on performance and increasing the understanding of the impact of trauma injuries. While we are still some way off from persuading all athletes in contact or combat sports to wear proper dentally fitted sports mouthguards, thankfully awareness of the benefits is increasing.

"More sporting bodies are realising the importance of looking after the 'whole' athlete to improve chances of success and I feel that this link-up with Team Scotland will be one of the extra percentage points the athletes need to fulfil their performance potential."

GDC ANNOUNCES CPD OVERHAUL

New system introduces personal development plans and amends number of hours each dental professional needs to complete

The GDC has announced a raft of changes to CPD requirements that will move towards a system based on quality rather than quantity.

Enhanced CPD, or ECPD, will come into force in 2018 and will also see the introduction of a personal development plan for each member of the dental team. The regulator says that this plan will be a "tool that can identify areas for further development and encourage lifelong learning".

As part of the changes, there will also be a change to the number of hours that dental professionals must complete during a five-year cycle. Dentists will need to complete 100 hours of verifiable CPD; hygienists, therapists, clinical dental technicians and orthodontic therapists will need to complete 75 hours; and dental nurses and dental technicians 50 hours.

Ian Brack, chief executive of the GDC, said: "The public has a right to expect that dental professionals will keep their knowledge and skills up to date.

"The introduction of a personal development plan helps to meet our aspirations of supporting lifelong learning and development.

"Having a better system for continuing professional development – with a much clearer emphasis on planning development, reflecting on learning and embedding that learning into current practice – ties in with the prevention of patient harm element which was one of the principles set out in *Shifting the Balance*."

INTERVIEW ON PAGE 28

My initial reaction was one of surprise and bewilderment. On reflection, I was really chuffed to even be considered

ALAN WALKER

GDC FTP PROCESSES TO BE OVERHAULED

Annual report sets out regulator's plans for coming year

The coming year will see an "end-to-end" review of the GDC's entire fitness-to-practise process as well as the introduction of an online tool for the "self-filtering" of complaints, according to the regulator's latest annual report.

The 2016 publication looks back on a year that has seen the council improve its performance in the eyes of the Professionals Standards Authority, achieving 21 out of 24 standards as opposed to just 15 in 2015.

It was also the year that it published *Shifting the Balance: a better, fairer system of dental regulation*, where it set out its plans to reform dental regulation.

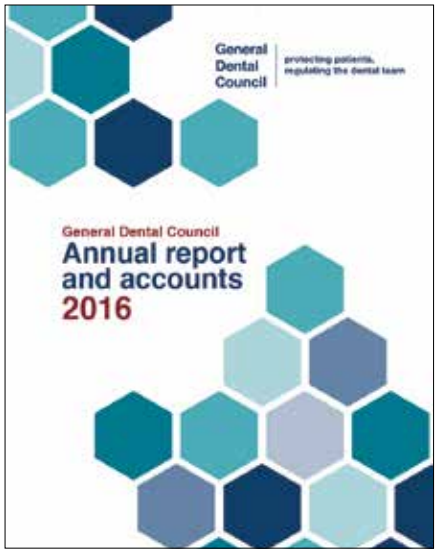
William Moyes, chair of the GDC Council, said: "In this period of political uncertainty, the GDC is planning for an improved model of dental regulation that is better for patients and fairer for dental professionals.

"The UK's withdrawal from the European Union and the effect on a range of issues from workforce planning to language testing and how to deliver care to patients with complex, long-term conditions – presents still unknown challenges for the delivery of dental care.

"This is at a time when all health professionals are trying to deliver care that is in patients' best interests, to populations that are increasingly elderly with multiple, complex conditions.

"And the GDC has faced its own challenges. We improved significantly over the past few years – new people, new processes, tighter controls and much more transparent and engaged with all our key stakeholders, who have generally welcomed the scale and pace of change and the direction in which the GDC has been taken.

"I look forward to working with these



stakeholders to deliver our vision of improved dental regulation."

In the coming weeks, the GDC has announced it will introduce a digital tool that will signpost patients and others to the organisation that is best placed to help them as well as an end-to-end review of its fitness to practise function to "identify further ways to improve those processes".

APOLOGIES LEGISLATION COMES INTO FORCE

Saying sorry will not be seen as an admission of liability, thanks to new Act

Dentists in Scotland have been assured that apologising to patients, outside of legal proceedings, will not be seen as an admission of legal liability.

The Apologies (Scotland) Act 2016 came into force at the end of June and provides legal protection for dental professionals when apologising to patients. The Act defines an apology as: "...any statement made by or on behalf of a person which indicates that the person is sorry about, or regrets, an act, omission or outcome and includes any part of the statement which contains an undertaking to look at the circumstances giving rise to the act, omission or outcome with a view to preventing a recurrence."

Angela Harkins, DDU dento-legal adviser, said: "Saying sorry to a patient when something has gone wrong is the right thing to do and is an ethical duty for dental professionals. The Apologies (Scotland) Act provides


Angela Harkins

further reassurance to dental professionals that apologising is not an admission of legal liability. In the DDU's experience, a sincere and frank apology and explanation can help restore a patient's confidence following an error and help to rebuild trust. This is important for a patient's future healthcare and can help to avoid a complaint or litigation."

Dental professionals have a professional duty of candour, set out in the GDC's standards for the dental team which states that when dealing with complaints: "You should offer an apology and a practical solution where appropriate."

NOW TRENDING

65%

FACT
Teenagers who were subjected to verbal bullying in school were almost four times more likely to grind their teeth*

*Source: Serra-Negra et al, Journal of Oral Rehabilitation, 2017;44(5): 347-353

QUARTER OF A CENTURY FOR BRAEMAR FINANCE

Dental practice finance specialist Braemar Finance is celebrating its 25th anniversary, with managing director and founder partner David Foster leading the praise for his colleagues, customers and suppliers.

David founded the business in 1992 and he grew the business into one of the premier providers of finance for the professions in the UK, before it was acquired by Close Brothers in 2000. He said: "We are one of the few funders to the professions that have demonstrated this level of longevity and commitment to businesses and individuals in the professions sector. While much has changed since 1992, our business model has remained consistent and simple.

"Our team's level of industry knowledge is unmatched and is key in helping our customers understand the value of their investment."

David has recently announced his retirement, effective 31 July this year with Aileen Boyle named as his successor.

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SEDATION GUIDELINES BROUGHT UP TO DATE

Third edition takes into account recent developments

The Scottish Dental Clinical Effectiveness Programme (SDCEP) has released an updated version of its *Conscious Sedation in Dentistry* guidance.

First published in 2006 and revised in 2012, the third edition of the publication has been updated using SDCEP's NICE-accredited methodology and takes into account specific developments in sedation practice in recent years. This includes collaboration with the Intercollegiate Advisory Committee for Sedation in Dentistry regarding its 2015 report, *Standards for Conscious Sedation in the Provision of Dental Care.*

The guidance provides advice on various aspects of sedation, including: facilities, equipment and staffing; preparation for sedation; sedation techniques and staff training. It promotes good clinical practice through recommendations for the safe and effective provision of conscious sedation. All of the dental faculties of the Royal Colleges in the UK and the Republic of Ireland have endorsed it. In addition, the Royal College of Anaesthetists has expressed its support for the guidance and will be promoting it among its members.

The chair of the SDCEP Conscious Sedation in Dentistry guidance development group, Professor Vince Bissell, said: "Dental teams are highly skilled in using various approaches to help alleviate the anxiety that some people experience when attending for dental care. In certain circumstances, using conscious sedation is an appropriate means of helping anxious patients cope with dental treatment. It also enables some patients with additional support needs to access dental care. Drawing on the most recent developments, the guidance provides clear and practical advice on how to provide sedation safely and effectively."

HEATHER IS THE FACE OF NATIONAL SMILE MONTH

A grandmother from Stranraer was chosen as one of the faces of National Smile Month after being nominated by her local dental practice.

Heather Ferrol, 58, was named as the winner of the charity campaign's Nominate a Smile competition, which was looking for inspirational figures who have the ability to put a smile on somebody's face. The former dinner lady, who received a liver transplant four years ago after being diagnosed with primary biliary cirrhosis, was selected from hundreds of entries from across the UK. She said: "The transplant has given me a new lease of life and since that day I have gone from strength to strength. I now have lots to smile about and be thankful for."

Heather was nominated by the team at Southwest Smile Care Centre. Practice manager Liz Alexander said: "She is a wonderful lady with a such a positive attitude towards life and has kept smiling throughout her battle with a devastating disease, a fight she has now won."

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THE CLASSES OF 2017

Another year, another cohort of dental graduates who will be starting their careers in Scotland and further afield. See below for a full list of all the 2017 graduates from Aberdeen, Dundee and Glasgow

ABERDEEN BDS GRADUATES 2017

Alexander, Matthew
Coffield, Sinead
Cook, Laura
Jenkins, Ryan
Kemp, Louise
Ley, Ellie
McGennity, James
Miller, Natalie
Murray, Rachel
Nasser, Mohammed
O'Neill, Aoife
Patel, Paayal
Rae, Rebecca
Riaz, Nadeem
Ritson, Zoe
Tan, Kim
Taylor, Lisa
Vringas, Nikolaos
Welsh, Elizabeth

DUNDEE BDS GRADUATES 2017

Blair, Stephanie
Bin Ahmad Ridzuan, Abdul
Binti Khalid, Noor
Blair, Anna
Blair, Chiara
Burns, Stuart
Carslaw, Rebecca
Clark, Katrina
Coates, Scott
Connelly, Andrew
Connelly, Claire
Coyle, Aidan
Cromar, Dale
Dickson, Pamela
Doherty, Kathryn
Donovan, William
Dunbar, Hannah
Elliot, Kathryn
Garland, Shona
Graham, Bradley
Gray, Cameron
Green, Ross
Hameed, Merriem
Handy, Patrick
Hunter Whelan, Megan
Ireland, Katriona
Ivatt, Heather
Jack, David
Jetty, Juliana
Jordan, Christopher
Kennedy, Morag
Khader, Susan
Laorerkuthai, Kanokporn
Lim, Yu Chen
Lipski, Paige
Lister, Graham
Manning, Kathryn
Marley, Kathryn
Mayeux, Hugo
McKirdy, Lauren
Meldrum, Katy
Miller, April
Mitchell, Amber
Muir, Hannah
Munro, Ross
Murray, Samantha
Neil, Jennifer
O'Neil, Bebhinn
Parr, Robbie
Paterson, Miranda
Rashid, Haris
Ratcliff, Clare
Razali, Nadia
Robertson, Sarah
Robson, Emma
Safdar, Saira
Sands, Valerie
Scott, Louise
Southam, Jack
Stewart, Lee
Sweeney, Jill
Szyk, Aleksandra
Tan Li Phing, Felicia
Taylor, Sarah
Toner, Rebecca
Tong, Jennifer
Turner, Nicola
White, Lori
Wilson, Gregor
Young, Michael
Young, Ramsay

GLASGOW BDS GRADUATES 2017

Andrew, Kerry
Arthur, Olivia Jane
Aslam Pervez, Abdulahad
Ayoub, Fahad Khalid
Bain, Jordan James
Bamdad, Darius Stephen
Bannister, Megan Yvonne
Barr, Andrew
Basi, Gurveer
Billimore, Katherine
Blair, Francesca
Boags, Cameron
Brown, Ciaran
Brown, Hamish Bruce
Brown, Michael Graeme
Buchan, Sarah
Burns, Kimberley
Burns, Maria
Chandran, Anupam
Cheyne, Leon
Chung, Michael
Cook, Hannah Elizabeth Helen
Cousins, Matthew
Cruickshank, Rachel
Devlin, Colin Robert
Dolan, Jacob Elliot
Dolan, Sean Alexander Reilly
Dunaway, James Edward
Edmondson, Jennifer Grace
Findlay, Stuart
Frankgate, Jordan Alexander
Gangi, Hamza
Girvan, Alexander
Glackin, Colin
Goldsmith, Rachel Catherine
Gormley, Conal Patrick
Higgins, Aoibheann Ann
Howard, Laura Anne
Hoy, Clare
Jadeja, Sagar Pankaj
Javed, Aqib
Lang, Kirsty
Lee, Amy Jane
Lee Zhiyuan, David
Little, Alistair James Coutts
MacDonald, Blair
McDowall, Melissa Christine
Macfarlane, Grant Alastair
McGowan, Lydia
Mackle, Mary-Kate
McMahon, Dean
Mahmood, Niha Aamina
Malley, Kirstie
Matthews, Dawn
Nadig, Kuber
Naeem, Hiba
Pang, Jacqueline Jenny
Patel, Anouska
Patterson, Jayne Stephanie
Quach, Henry
Rafiq, Iqra Parveen
Railton, Mischa
Ramsay, Megan Elizabeth
Rizvi, Ali Obaid
Shankar, Medha
Sharkey, Lawrence
Sheikh, Raeed Mohammed
Shum, Dean
Siu, Kenneth
Skimming, Claire Elizabeth
Swann-Price, Rhiannon
Taylor, Craig Veitch
Todd, Elizabeth Jayne
Underwood, Hannah Rachel Helen
Ur-Rehman, Hammaad
Waller, Edward Oliver
York, Hannah
Zia, Aadam

Aberdeen's Class of 2017

Dundee's Class of 2017


Glasgow's Class of 2017

WHITE GLOVES AND WHITE WELLIES

Dental school tradition is turned on its head in Aberdeen

It is traditional in most dental schools to award a pair of white gloves to the dean in the event that every single final year student passes their exams at the first sitting.

This year, the final year at both Aberdeen and Dundee all passed at the first attempt but the two schools celebrated in markedly different styles. Dundee Dental School dean Professor Mark Hector received his second set of white gloves after being presented with a pair in 2015.

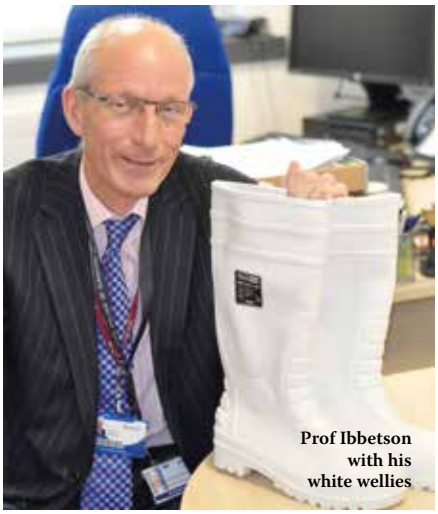
However, Professor Richard Ibbetson at Aberdeen received an altogether more unusual gift. A member of Aberdeen staff said: "Richard didn't really want any fuss about him during the students' graduation when the focus should be on what they have all achieved.

"They duly ignored him and got him a pair of white wellies, as he likes to inform people he's been drafted in to the wettest dental school in the UK. Apparently it rains too much up here!"

Prof Ibbetson said: "The staff at the dental school are delighted that in, May 2017 100 per cent of the students presented for the BDS final examinations were successful, graduating in June 2017. We offer our congratulations and best wishes for their futures and we look forward to watching their careers within the dental profession with interest."

Prof Hector said: "It is always a special occasion to be presented with the white gloves as they represent the achievements of all of our graduates. The class of 2017 have excelled themselves and my colleagues and I in the dental school are delighted to extend our congratulations to them all."


Prof Hector with the white gloves


Prof Ibbetson with his white wellies

UPCOMING EVENTS

WE'VE GOT THIS COVERED

29 AUGUST TO 1 SEPTEMBER
FDI Annual World Dental Congress
Madrid
Visit www.world-dental-congress.org for more.

1 SEPTEMBER
BDA Scottish Scientific Conference and Exhibition 2017
Crowne Plaza, Glasgow
To find out more, visit bda.org/bdascottishdental

14-16 SEPTEMBER
British Orthodontic Conference 2017
Manchester
Visit www.bos.org.uk/BOC-Manchester-2017

15-16 SEPTEMBER
Identex
Citywest Hotel, Dublin
Find out more at www.idta.eu

22 SEPTEMBER
Complete Composites – Professor Brian Millar
DoubleTree West, Dundee
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6-8 OCTOBER
Lindsay Society Annual Conference
Portsmouth
Find out more at bda.org/museum/lindsay-society

19-21 OCTOBER
BDIA Dental Showcase
NEC Birmingham
See www.dentalshowcase.com for details.

3 NOVEMBER
Royal College of Physicians and Surgeons of Glasgow
Mouth Cancer Conference
To find our more, visit rcpsg.ac.uk/events/orcan

3-4 NOVEMBER
Orthodontic Society of Ireland Autumn Meeting
Dublin
For more information, visit www.orthodontics.ie

3-4 NOVEMBER
BSDHT Oral Health Conference and Exhibition 2017
HIC Harrogate International Centre
Visit www.bsdht.org.uk to find out more.

9-11 NOVEMBER
BACD Annual Conference 2017
London
To find out more, visit www.bacd.com

24-29 NOVEMBER
Greater New York Dental Meeting 2017
New York
For more information, visit www.gnydm.com

8 DECEMBER
British Society for Disability and Oral Health Winter Conference
Royal College of Physicians, London
Find out more at bda.org/events/conferences

6-8 FEB 2018
AEEDC Conference and Arab Dental Exhibition
Dubai
Visit www.aeedc.com

20 APRIL 2018
Osteology UK
Royal College of Physicians, London
To find out more, visit www.osteology-uk.org

27 APRIL 2018
Scottish Dental Awards 2018
Hilton Glasgow
Visit www.sdawards.co.uk for more information.

27-28 APRIL 2018
Scottish Dental Show 2018
Braehead Arena, Glasgow
For more information, visit www.sdshow.co.uk

10-12 MAY 2018
British Dental Conference and Exhibition
Manchester
Log onto bda.org/conference for more.

20-21 JULY 2018
World Dental and Oral Health Congress
London
Find out more at www.worlddentalcongress.co.uk

11-13 OCTOBER 2018
EAO 2018
Vienna, Austria
For more information, visit www.eao-congress.com

ENDODONTIC INFECTIONS AND SYSTEMIC HEALTH

THE BRITISH ENDODONTIC SOCIETY'S EDINBURGH MEETING FEATURES AN INTERNATIONAL CAST

The 2017 Regional Meeting of the British Endodontic Society will feature an international line-up of speakers from New Zealand, Germany and Finland when it heads to Edinburgh in November.

The two-day event, which will take place on 17 and 18 November at the Sheraton Grand Hotel and Spa, will also feature speakers from London and Manchester with the conference theme of 'Endodontic infections and systemic health.'

The Friday programme will begin with a choice of four 90-minute masterclasses. Professor Nick Chandler from the University of Otago in New Zealand will present on 'Can you see it? Can you measure it? Can you fix it?'; Prof Michael Hülsmann, from the University of Göttingen, Germany, will look at root canal instrumentation; and Dr Martin Kelleher,

from King's College, will explore 'More sensible solutions for perennial problems.' Finally, Dr Jimmy Makdissi, from Queen Mary University of London, will look at the current status of CBCT in endodontics.

The Friday afternoon will feature two lectures from Prof Martin Thornhill from the University of Sheffield, firstly on focal infection theory and then on antibiotic prophylaxis and endocarditis.

The conference dinner will then take place at the Royal College of Surgeons of Edinburgh.

The conference programme continues on the Saturday with a quartet of Finnish speakers from the University of Helsinki. Prof Leo Tjäderhane will speak about systemic diseases and endodontology, Dr John Liljestrand will explore oral infections and cardiovascular diseases, before Prof Pirkko Pussinen looks at the mechanisms behind chronic infection-induced cardiovascular diseases, and then Prof Jukka Meurman will explain how oral infections may affect systemic health.

The final talk will come from Dr Riina Rautemaa-Richardson from the University of Manchester who will deliver a talk entitled 'Antibiotics in dental treatment: A comprehensive overview.'

MORE INFORMATION

For more information and to book your tickets to the British Endodontic Society's Regional Meeting, visit www.britishendodonticsociety.org.uk

ONE STEP AHEAD

THE DENTAL UPDATE THEATRE AT THIS YEAR'S DENTAL SHOWCASE PROMISES A DIVERSE RANGE OF TOPICS WITH SOMETHING FOR EVERYONE

At this year's Dental Showcase, 19-21 October at the NEC in Birmingham, there will be a range of lectures, all guaranteed to extend your skills and competency with practical knowledge that you can reapply in practice.

RELEVANT AND INSPIRING

CPD should not be a simple 'tick box' exercise. You're investing your time, so you need to ensure you get the most out of it. The lecture programme in October will cover a diverse range of topics, where it's guaranteed there will be something for everyone. On the Friday and Saturday the Dental Update Theatre will host a range of experts, all of whom will offer practical guidance on a range of clinical and non-clinical topics.

DR LOUIS MACKENZIE

Opening the session on Friday and Saturday will be Louis Mackenzie. As a lecturer at Birmingham School of Dentistry, as well as a dentist in general practice, Louis knows the importance of being able to apply science and research into general dental practice. He will be reviewing the latest materials, equipment and clinical techniques for predictable and enjoyable aesthetic restorative dentistry. The latest innovations in both posterior and anterior composites will be explored as well as options for direct restoration of endodontically treated teeth. Louis is passionate about minimally invasive dentistry and, practising what he preaches, he will look at ways in which you can conservatively place crowns, veneers and bridgework.

PROF ED LYNCH

Prof Edward Lynch will start the afternoon session on the Friday by examining the 'One Visit Crown' (OVC) from Rhondium. There's no reason why a permanent dental crown/onlay cannot be placed in a single appointment. In his session, he will explain how the OVC combines a pre-formed occlusal layer and an uncured layer of hybrid ceramic. This futuristic concept obviates the need for impressions, dental labs and CAD/CAM machines. Unbelievably, this treatment can be completed in 40 minutes or less and Prof Lynch will show you how and will explain the clinical suitability of the OVC so that you can be confident in your case selection.

LUKE MOORE AND PAUL WILKINSON

In the last session on Friday afternoon, Luke Moore and Paul Wilkinson, directors from Dental Elite, will review market movements and its impact on practice valuations. Change is the only constant in life and if we're prepared for it, we can embrace it. Whether you're planning to buy or sell, or haven't yet thought of either, you'd be wise to look at factors affecting market trends in the dental acquisitions world. 2017 has been a year of change and we're only half way through. It's never too early to start planning ahead and understanding how market valuations are calculated, and how subtle changes can be made which will affect your practice's valuation.

DR BEN ATKINS

Dr Ben Atkins will be exploring how the evolution of oral healthcare has given us better tools than ever to meet patients' needs. He will explain how he has overhauled his high need patients' oral healthcare, to change their lives for the better. Healthy smiles are achievable while managing a practice and maintaining a profit.

DATES FOR YOUR DIARY

Aesthetic Restorative Dentistry: A Practical Guide
Speaker: Louis Mackenzie
Day: Friday 20 October and Saturday 21 October
Time: 11.45am-12.30pm both days

Revolutionise your practice with the One Visit Crown (OVC)
Company: J&S Davis
Speaker: Professor Edward Lynch
Day: Friday 20 October
Time: 1pm-1.45pm

The Buying & Selling Game
Company: Dental Elite
Speaker: Luke Moore and Paul Wilkinson
Day: Friday 20 October
Time: 2.15pm-3pm

The Evolution of Oral Healthcare
Company: Philips
Speaker: Dr Ben Atkins
Day: Friday 20 October
Time: 3.30pm

MORE INFO
These are just some of the lectures taking place. For the full programme, visit www.dentalshowcase.com

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ESSENTIAL EDITORIAL CONTENT FOR DENTAL PROFESSIONALS

NEW PLANS

ALAN WHITTET EXPLAINS HOW HE AIMS TO CHANGE PERCEPTIONS

See page 24

READY TO ENGAGE

COMMUNICATING THE 'PATIENTS FIRST' MESSAGE OF PRACTITIONER SERVICES IS TOP PRIORITY FOR SCOTLAND'S NEW SENIOR DENTAL ADVISER

STEWART McROBERT MARK K JACKSON

There's a new senior dental adviser in place in Scotland who is out to engage with the profession with a view to improving collaboration between Scottish dentists and Practitioner Services.

Alan Whittet took up his role in April and brings with him a lengthy track record, both as a practising dentist and dental adviser. He first qualified in 1984 and subsequently spent 28 years as a full-time GDP, first becoming a practice inspector in 1994.

As he outlines, one of Practitioner Services' tasks is to act on behalf of the Scottish Dental Practice Board. It has the responsibility to assess cases submitted for prior approval by dentists and determine, on the basis of the information dentists have provided, if it is appropriate to give that approval. He insists decisions are made on clinical grounds and in the best interests of patients; financial factors are never a consideration.

According to Alan, the idea that Practitioner Services are the dental police is a misconception. He says: "While we are here to promote and ensure good clinical practice, we also need to identify poor practice and take corrective action when required, or communicate with others who have that responsibility.

"This has led to a perception in some quarters that we are the dental police, are out to get dentists and are targeting them unfairly. I don't think that's the reality and my aim is to fix that perception.

"I am determined that we, in particular the clinicians here, engage more with the profession and its representatives. We want to do that in a way that makes them understand that the term dental adviser means exactly that – we are here to provide advice and support, and to help dentists work within the regulations in the best interests of their patients."

Perhaps his determination to engage stems from the fact that Alan still sees himself as a dentist first and foremost, and has seen the benefits of communication. "I became a dental practice adviser in NHS Lothian in the late 90s and have only recently resigned that job.

> "THERE IS A PERCEPTION IN SOME QUARTERS THAT WE ARE THE DENTAL POLICE. I DON'T THINK THAT'S THE REALITY AND MY AIM IS TO FIX THAT PERCEPTION"
>
> ALAN WHITTET, SENIOR DENTAL ADVISER

"I loved the role and the best thing about it was getting to meet other dentists, usually on their territory, and chat about things of mutual interest. It was good to have the chance to explain and advise on things that dentists were uncertain of or even annoyed about having to do. If you can explain the purpose or background people are more understanding."

This is his second stint at Practitioner Services. He first joined the organisation on a part-time basis in 2010 and became a full-time adviser in 2012. In 2015, he moved to a professional indemnity firm as an associate dento-legal adviser. However, when the senior dental adviser post was advertised he found it impossible to ignore. "I missed being here, and when I was given the opportunity to come back I grabbed it," he says.

EDUCATION

Looking forward, Alan believes the changing nature of the profession will see he and his team assume a more educational role. For illustration, he cites the increasing number of dentists practising in the country who qualified elsewhere and have inadequate experience of the system.

"They can make innocent mistakes because they misinterpret the Statement of Dental Remuneration and the Regulations,"

CONTINUED OVERLEAF>

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*91% of payment plan patients go at least every six months compared to 52% pay as you go. Source: Simplyhealth/YouGov Survey, February 2017. Online survey of 5,025 UK adults. All respondents who are regular attenders that pay privately (585), who have a dental payment plan or pay fee per-item (266).

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CAM2136 05-17

"WE ARE HERE TO PROVIDE ADVICE AND SUPPORT, AND TO HELP DENTISTS WORK WITHIN THE REGULATIONS IN THE BEST INTERESTS OF THEIR PATIENTS"

FROM PREVIOUS PAGE>

he says. "If we don't put education in place early we are leaving them to make these errors. It costs them and it costs us to correct them."

With that tutoring role in mind, Practitioner Services is linking with NHS Education for Scotland (NES). Among other things, it contributes to mandatory induction training for dentists who have not undertaken vocational training in Scotland. The mandatory training includes "understanding of the rules and regulations", which is where Practitioner Services offers advice.

"We are also linking with NES to provide training directly to vocational dental practitioners (VDPs). In the past, courses have been provided by different people and may have given different messages. I think it is important that VDPs receive a consistent line so that they avoid mistakes," says Alan.

STIRLING TO SENIOR ADVISER

Alan Whittet, Scotland's new senior dental adviser, qualified from Edinburgh Dental School in 1984. He went straight into general dental practice and worked in three different practices over the course of 28 years. The majority of the time was spent in the NHS. He was an associate at a Stirling practice for two years before moving to another in the west end of Edinburgh. After five years he headed down the coast to East Lothian and a practice in Longniddry. During his 20 years there he bought into the practice and contributed to a series of changes.

Another part of its communications drive is a planned series of dental roadshows which will visit different parts of the country.

"My number one priority is engagement with the profession. We need to make sure they know why we are here and what we are doing."

Meanwhile, several developments promise to bring further change, not least the Scottish Government's recent consultation on Scotland's oral health. Although the outcome won't be known until later this year, Alan speculates that there will be opportunities for Practitioner Services to increase the scope of its services. He believes there are activities that take place across the country that are managed differently by different health boards. It could make sense in terms of efficiency and effectiveness for some of these to be carried out centrally by National Services Scotland (NSS), of which Practitioner Services is a part.

"We will need to see what emerges, but it may well be there's greater emphasis on preventive activity, which has to be a good thing. If that does happen, we will need to be ready to monitor preventive activity as well as treatment."

He also suggests a simplification of the payments and prior approval systems would make sense. "It would be good to have a set-up where it's harder to make mistakes and dentists can get on with their work without having to worry too much about lots of different codes and so on."

Other factors add to the sense of flux within the profession. Alan highlights the greater diversity of dentists compared to 20 years ago, and the increasing number of corporates involved in the sector. In addition, the Minamata Convention will lead to a gradual phasing out of the use of amalgam, which will present a challenge for the NHS.

PATIENTS FIRST

Whatever happens, Alan and his team expect dentists will do their best for their patients, comply with the regulations and professional standards and work in accordance with any laws that affect their practice. "Above all," he says, "patients are our priority; our objective is to support the provision of safe, effective and person-centred care."

Looking forward five years, Alan hopes by that time the profession will see Practitioner Services in a different light and there will be a far more collaborative relationship. "Among other things, I would hope that all of the projects that we have on the go to introduce electronic processes – eDental, ePrior Approval and eOrtho – will have been a success.

"If we can have all that working efficiently and smoothly I would hope that we spend less of our time on paper chasing and administration and far more of our time engaging directly with dentists, as well as getting more involved with education.

"I'm excited about the challenges ahead. I'm under no illusions about the work that's needed, but it's great to be back and I'm looking forward to working with colleagues throughout the profession."

A LEADING LIGHT IN DENTAL EDUCATION

THE RECIPIENT OF THE 2017 SCOTTISH DENTAL LIFETIME ACHIEVEMENT AWARD PLAYED A KEY ROLE IN THE DEVELOPMENT OF POSTGRADUATE DENTAL EDUCATION IN SCOTLAND

BRUCE OXLEY SCOTT RICHMOND

Alan Walker's career has seen him influence, either directly or indirectly, the lives of literally thousands of young dentists in Scotland for more than 20 years.

And now, in retirement, the recipient of the Scottish Dental Lifetime Achievement Award for 2017, says he wouldn't have changed a single thing in his near 40-year career. He said: "Looking back I have no regrets at all. I've loved the variety of my various jobs. Every move to another area of dentistry gave me a difficult decision because I was leaving something that I still really enjoyed. I consider myself lucky to have had these dilemmas."

Alan qualified with BDS in 1979 from Glasgow Dental School and gained his MGDS in 1989. He worked as a house officer and then, over the next 22 years, as both a clinical assistant and a hospital practitioner at Glasgow Dental Hospital and School (GDHS). He was a general practitioner for 27 years and, for 23 of these, he was a practice owner and a successful one at that. Within the first seven years of ownership, he had doubled the size of the practice.

In 1995 he gained accreditation in hypnotherapy and delivered regular sessions at GDHS where he helped patients with intractable gagging difficulties and needle phobias. Alan's close friend and colleague Jimmy Boyle, who was his "right hand man" for many years at NHS Education for Scotland (NES) said: "If you ever get a chance to speak with Alan, ask him about the time he was explaining hypnotherapy for smoking cessation to a patient and the packet of fags fell out of his top pocket."

Jimmy, who is the current associate postgraduate dental dean and national VT lead at NES, introduced and presented Alan with his award at the recent Scottish Dental Awards 2017 ceremony, which was held at the Glasgow Hilton. He said: "His understanding and empathy with 'real dentists' was grounded in his involvement with general practice.

"But it is probably for his involvement in dental education that he is best known, to me and to most in the profession."

> "HIS UNDERSTANDING AND EMPATHY WITH 'REAL DENTISTS' WAS GROUNDED IN HIS INVOLVEMENT WITH GENERAL PRACTICE"
>
> JIMMY BOYLE

CHANGING THE FACE OF DENTAL EDUCATION

Alan became a CPD tutor for the Scottish Council for Postgraduate Medical and Dental Education (SCPMDE) in 1994 and then for NES in 2002. He said: "After a number of years involved with undergraduate teaching, I was getting itchy feet. SCPMDE was in its infancy and a CPD tutor post was advertised. It appealed to me and I was encouraged by a few more experienced friends to apply."

During this time, he introduced CPD courses across the west of Scotland as well as being involved in the introduction of the first CPD courses for DCPs. It was this involvement and interest in dental education and vocational training (VT) through being a past trainer, that saw his appointment as director of postgraduate dental education where he led VT locally and then nationally until his retirement in 2015.

Jimmy continued: "During this period, literally thousands of new graduates have

him to thank for the support given to them in their first year of practice and for the sound principles taught which enabled them to work independently.

"He was also significantly involved in a number of important developments in vocational training including, most notably, the period immediately following the introduction of legislative satisfactory completion and the development of a national workstream for VT, which he led.

"This resulted in his taking charge of a national team of assistant directors – of whom I was one – advisers, trainers and VDPs as well as all of those dentists and therapists in training posts and all of those students who applied to VT."

His experience in dental education didn't stop there. He was an examiner for the Royal College of Physicians and Surgeons of Glasgow (RCPSG) and served for more than a decade on the dental board and education committees. He is an experienced lecturer having delivered courses through the RCPSG, BDA and NES among others to audiences of GDPs, VDPs, DCPs, general nurses and doctors. He has been published in the *British Dental Journal, Dental Update, Rostrum* and *Scottish Dental* magazine.

Jimmy continued: "He has been an advocate throughout his career of common objectives in dental education and was pivotal in establishing regular interface meetings between postgraduate education in dental practice and undergraduate education at GDHS. These meetings are ongoing and are now extended to take place nationally."

THE HIGH POINTS

When asked about his career highlights, Alan said that he had enjoyed and valued every role he had taken on from GDP, GDHS and NES. He said: "I loved being in practice, missing particularly working with patients and the dental team when I stopped. Starting a bespoke hypnotherapy clinic and working with oral surgeons on post cancer patients were probably the Glasgow Dental Hospital and School highlights, although learning from consultants was great too.

"Introducing personal learning plans to CPD – badly as it turns out – and overseeing vocational training nationally were probably my NES highlights. A dental highlight since my retirement has been taking part in last year's Smileawi programme to provide much needed dental treatment to poor rural Malawians. It was hard work but a great experience."

Looking back, Alan picked out a few areas where he had seen significant change over the years. He said: "When I started in practice, and one with a good reputation, the practice had three surgeries, all of them suitable only for stand-up dentistry. A new seated-dentistry unit was installed for me and the staff at the time were somewhat amused by my seated dentistry.

"Each dentist had two full 'cons kits', sterilised by a hot air oven between patients, with instruments being cooled under running cold water if they were needed again in a hurry. Once a week there was there was a GA session for extractions and I saw as many as 20 patients being treated at a single session.

"Endodontics was reasonably predictable for upper anterior teeth but deemed a bit of a heroic attempt at saving a tooth if anywhere else in the mouth. The rigid reamers we used seemed like joiners' screws compared to today's hand instruments. Possibly the least changed disciplines of dentistry since those days are removable prosthodontics and oral surgery

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Alan was presented with his award by long-time friend and colleague Jimmy Boyle


Jimmy gave Alan an amusing and heartfelt introduction on the night

FROM PREVIOUS PAGE>

– exactly the two areas that I experienced as a house officer and continued to enjoy most for the next 30 years. Maybe that says a lot about my drive for innovation!"

And, he explained that the impact of postgraduate dental education was very different at the start of his career. He said: "In the old days it was not that uncommon for senior dentists in general practice to have progressed through their career having done little or no postgraduate education. Undoubtedly, the presence of mandatory CPD requirements and the development of education providers has not only given dentists an opportunity to advance and specialise, but also improved safety and treatment options for patients. It seems scary to think of the situation from my early years but I'm sure that in another 30 years, some of our current procedures will seem just as primitive."

RECOGNITION AND REFLECTION

Alan revealed that he couldn't quite believe it when he was told that he had been chosen as the recipient of this year's Scottish Dental Lifetime Achievement Award. He said: "My initial reaction was one of surprise and bewilderment. On reflection, however, I was really chuffed that someone had even considered me.

"It was particularly pleasing that Jimmy Boyle was selected to present my award. I had worked closely with Jimmy in NES for a number of years and he had been a great 'right hand man' and adviser during the period following my appointment as director of postgraduate dental education at NES. There were many others who also greatly supported me and deserve my gratitude, so a huge thank you to them also.

"Jimmy said some complimentary things about me on the night and managed to do so with elegance and poise – and a straight face – throughout his address."

And Alan explained that writing his acceptance speech gave him a welcome opportunity to look back and reflect on his career. He said: "Being the recipient of such an award inevitably produces different emotions. My first reaction was that I could think of a number of my colleagues who should easily have deserved this award and it was humbling to think that I had been chosen. Once I got over this train of thought, it dawned on me that receiving the honour would necessitate giving an address to the many people present at the dinner.

"Thinking about what I would say was an interesting process because it inevitably involved reflection about my life as a dentist and the various stages and incidents over the years. I was aware that those at the dinner would be enjoying themselves and would not relish sitting through a sombre speech spanning the years.

"However, through reflection, I realised that this was not a problem because the overwhelming feeling I had was one of genuine enjoyment. I hope the simple – and true – anecdotal tale I recalled on the night illustrated the fun I had over the years.

"Having to speak also provided a great opportunity to publicly thank all the people I worked with over the years in my different roles, and my patients, all of whom provided the environment on a daily basis for me to have this rewarding career and lots of fun along the way.

"I wasn't feeling at my best on the day of the dinner due to illness but being there brought me out of my dumps. So, in addition to being a fantastically organised event, the dinner was a great tonic.

"It was great to bump into old friends and chat with people who I hadn't met before. It was especially nice to come across people I had worked with in practice, taught as undergraduates or worked alongside at NES, most of whom I hadn't seen in quite a long time."

SETTING COURSE FOR A SUCCESSFUL CAREER

THE 2017 SCOTTISH DENTAL AWARDS' DCP STAR, KYLE ANDERSON, DESCRIBES WHAT HE LOVES ABOUT BEING A DENTAL NURSE

BRUCE OXLEY SCOTT RICHMOND

Kyle Anderson isn't the first person to have a disappointing experience with their high-school careers advisor, and he probably won't be the last.

Instead of words of encouragement, a 16-year-old Kyle was told that his long-held dream of being a nurse was a pipe dream and that his grades simply weren't good enough.

"I was told that I would never make it as a nurse of any kind," said Kyle "which was really crushing, and I felt really low about myself afterwards."

As a result he studied hospitality management at college but had what he describes as a "rough spell" with a couple of hotel firms and found himself reassessing his career again. It was at this point that he posted a message on Facebook and a family friend Liz Alexander got in touch. She is the co-owner and manager at South West Smile Centre and offered Kyle the chance to enter the apprenticeship scheme and become a dental nurse.

He said: "I jumped at it straight away. I had always wanted to work as a nurse and dentistry seemed really interesting. I have never looked back – now that I am in dentistry and a dental nurse, I feel like I'm where I belong."

Kyle was taken on as an apprentice by South West Smile Centre in Stranraer in 2013, qualifying at the beginning of 2015, and he is still at the same practice. However, Kyle is not just a dental nurse; he has also taken on many more roles such as reception duties and policy and HR file work. He explained: "I like to take charge of all the policies in the practice and I am responsible for updating the file regularly with new ones and also for looking after the HR file."

He is the secondary practice first aider and he has also helped to train two new apprentice nurses at the practice. As well as this he is the general handyman around the practice, painting, changing lightbulbs or fixing fixtures and fittings. His skills also extend to computers and especially social media. He helps Liz with the practice's Facebook and Twitter accounts and not only runs the website but was responsible for building it from scratch as well.

Kyle has also carried out various school visits, speaking to different age ranges of kids on their dental health and how to maintain it. He said: "I've also given a talk at the local high-school careers day about male dental nurses to try to encourage guys to go for it."

He has completed his OHE examination and a course in orthodontics, and has recently been accepted to study a bachelor science degree in oral health science. And, if that's not enough to be getting on with, Kyle is also a volunteer lifeboat crew member with the RNLI and he spent his summer holiday last year in Tanzania working with Bridge2Aid.

> "I HAVE NEVER LOOKED BACK – NOW THAT I AM IN DENTISTRY AND A DENTAL NURSE, I FEEL LIKE I'M WHERE I BELONG"
>
> KYLE ANDERSON, DENTAL NURSE

A GREAT HONOUR

Inspired by his passion and enthusiasm, Kyle was recently chosen as the winner of the DCP Star award at the Scottish Dental Awards 2017. He described his reaction when he found out: "I couldn't believe I had been shortlisted and I got quite excited, especially to be the only male on the list. There aren't very many of us male dental nurses around so it was nice to see my name on the list."

On the night, however, Kyle explained that at first he didn't realise he had won. He said: "When my name was read out, I had a brief pause for a moment and thought it was just in my mind until I realised that all my colleagues were cheering and clapping really loudly. It was a brilliant experience and a great honour to receive such an award for the whole of Scotland.

"The response from patients, colleagues and family has been amazing; it made the local newspaper and magazine, and patients coming in have been really kind having seen the newspaper and the practice social media accounts.

"Family and friends are really proud of me for gaining such an award and honour and getting recognition for the amount of work I do for the practice which I love. It's also been great showing people my award, which now sits on display in the practice,. Because, after all, it is thanks to the practice and my colleagues that I have been given the great opportunity of being a dental nurse and working at a great practice with great people helping some really amazing patients."

Kyle said that winning the DCP Star award has really given him and the practice a lift. He said: "Winning an award like this

Kyle with awards presenter and judge Nicola Docherty at the Scottish Dental Awards in May

has totally given me a boost in confidence. I also think the awards are great for recognising people for their achievements, and I think when local people see that you have won an award it makes you and the practice seem more attractive, and it is a great way to get more patients."

FROM STRANRAER TO TANZANIA

One of the most rewarding aspects of his job, Kyle said, was being able to help people who are anxious get treatment in the first place. He said: "I love the job I do, playing my part in helping people smile again. Some people haven't been to the dentist in a long time and are really nervous about treatment. There's nothing more rewarding than helping a patient get over their fear of the dental treatment and seeing them walk out the door with a smile. It doesn't matter what age they are, this is the best feeling I get from my job, and it makes me walk out the door at night and really feel like I've helped someone during the day."

Kyle explained that, as well as helping people, he really enjoys meeting new people and hearing their stories. He said: "Being a dental nurse gives you the chance to meet some amazing people and learn something new from them. Every day is a learning experience and I enjoy the fact that I'm always learning, even if it's something new about my colleagues."

It was this curiosity that led Kyle to give up his holiday allowance last year to travel to the east African nation of Tanzania to take part in Bridge2Aid's volunteer programme. He said: "I had worked with a

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Above and below, Kyle at work

Selfie while in Tanzania to take part in Bridge2Aid's volunteer programme

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dentist early on in my career who had been on a similar trip and he spoke endlessly about how rewarding it was. I told myself that, as soon as I was qualified, I would sign up. So, a year after qualifying I went for it. I decided to sign up to make a real difference to people in a position far worse than we are here. I really wanted to go out and see what it was like and help people smile in another country and continent."

Kyle raised the required £1,900 needed to take part through fundraising activities such as quizzes, a music night and other events, all helped by his friends and family. He travelled out in September 2016 and helped provide emergency treatment – mainly extractions – as well as training local health officers how to take out teeth and provide preventative lessons in nutrition and brushing techniques. In total, Kyle and his team treated more than 1,000 patients in just eight days and trained 11 out of the 12 clinical officers who were on the learning programme.

He said: "The experience was far more valuable to my career and me personally than I could have ever imagined. It was a learning experience I will never forget and it was beyond rewarding. Seeing some of the kids smiling was heart melting, and the way people thank you for relieving them of pain was very humbling."

The clinical experience was very much "back to basics" as Kyle explained: "As a nurse the sterilisation is done using pressure cookers on a naked flame stove. It was very much stripped back to basics, no electricity (or very little) meant holding a torch and no fancy chairs, just a little wooden dinner table chair. And the heat was so intense, you constantly have to ensure your water levels are high.

"I learned just how bad the issue is for people in rural Tanzania to get a hold of toothbrushes and toothpaste, and how to work with the very basics of instruments and equipment. We are so lucky here in the UK that we have the equipment that we have to do a good job. The people there are so thankful and happy that you were there helping, I learned a lot about myself as well, and it totally bettered me as a person."

BEYOND DENTISTRY AND THE FUTURE

Outside dentistry, Kyle seems to be just as active – if not more – than he is in his professional life. He is a volunteer lifeboat crew member and could potentially be called out any time 24/7. He said: "Doing this job is risky but it's also very rewarding like my day job. Saving lives at sea is a life commitment. I have been doing it for over a year and a half now and have been involved in some important call outs."

As well as this, Kyle is also involved in his local drama club as an actor, producer, sound crew and club secretary. He performs at least three times a year and his love of the stage doesn't stop there as he also plays in a band at a local pub every Friday night and gives guitar lessons to local kids.

> "TO ANYONE WHO IS LOOKING TO GET INVOLVED IN DENTISTRY I WOULD ENCOURAGE YOU TO GO FOR IT, ESPECIALLY THE GUYS"
>
> KYLE ANDERSON, DENTAL NURSE

He said: "I have a very busy life, but I wouldn't have it any other way. I love being active as it helps me meet new people and to carry on learning. This all makes me happy in life."

Looking to the future, Kyle has no plans to slow down any time soon. On top of his very busy work and social life, he has is looking forward to starting at his studies at the University of the Highlands and Islands in September. In order to do this, he will be going part-time at the practice, but after the three-year course, he is hoping to qualify as a dental hygienist/therapist and continue working at the practice that he loves.

He said: "I decided in January that I wanted to do more and I wanted to push myself. Dentistry is the sector I love and the one that I want to be in. I want to do more for my patients so I can't wait to start my course."

And, while dental nursing is traditionally seen as a female occupation – according to the latest GDC stats, there were only 57 male dental nurses in Scotland, as opposed to 6,150 female – Kyle is determined to encourage more guys to sign up. He said: "To anyone who is looking to get involved in dentistry I would encourage you to go for it, especially the guys. There may be more females doing it but guys can do it too. I love my job regardless of whether I'm the only male nurse in my practice or even in my town. The satisfaction I get from my job at the end of everyday makes me so happy and it's such a rewarding profession.

"I would also recommend being a dental nurse apprentice as you're a learning on the job, and there is no better way to learn than first hand. So I would say go for it and get involved!"

CHILD-FRIENDLY DENTISTRY

THE UNIVERSITY OF DUNDEE'S PROFESSOR NICOLA INNES WILL EXPLAIN HOW TO APPLY CHILD-FRIENDLY TECHNIQUES TO DAY-TO-DAY CARE OF CHILDREN AT THE BDA SCOTTISH DENTAL CONFERENCE AND EXHIBITION

Despite reductions in the levels of dental caries in children in some parts of the UK, the levels of disease remain substantial and continue to affect a significant proportion of children. Yet children's dentistry can be challenging to deliver. Although almost all children in Scotland are registered with a dentist, the care index (the proportion of carious teeth that are restored) is still only around 14 per cent, meaning only a little more than one in 10 visible cavities have restorations, and this is not dissimilar in England. In addition, almost one in five adults in the UK report a significant dental fear, which most relate directly to a bad dental experience as a child.

The good news, though, is that recent developments in cariology mean there are many new techniques to manage dental caries that are much less invasive, often avoiding local anaesthesia and the air rotor, yet still achieving highly successful outcomes. These simpler ways of managing the disease are easier for children to cope with, parents are happier with them, and dentists find them more rewarding to carry out. This new approach brings the potential for providing dental care for children with established dental caries to become the norm, and for negative dental experiences for children to become a thing of the past.

Management options such as the Hall Technique, selective caries removal combined with the use of atraumatic restorative treatment, techniques for sealing in non-cavitated carious lesions and a growing number of methods for arresting carious lesions, mean that with careful treatment planning there is often little need for the use of local anaesthesia and rotary instruments in managing the carious primary dentition.

With treatments that are easier to deliver, it has become important to search for early lesions in teeth and intervene

promptly rather than wait for them to cavitate, when they are more difficult to manage. Early lesions (i.e. those confined to enamel) should not be surgically removed; the aim should be to arrest or reverse them. The increasing use of radiographs, early intervention and a shift in focus towards understanding that the disease can be arrested and even reversed, has led to a growing emphasis in undergraduate teaching on making behaviour change a core component of children's dentistry. Involving the family in moving towards achieving good habits is a key component of effective preventive practice.

Most dentists have the skills to deliver each of these techniques to a very high standard. However, the most important part in achieving the high success rates possible with the child-friendly minimum intervention approaches are appropriate treatment planning decisions. A key part of this is staging treatment delivery in a stepwise approach, allowing the child to grow in their acceptance of treatment.

Giving children a positive attitude to caring for their dentition and ownership of their dental health as they grow, plus child-friendly dental techniques that do not need local anaesthesia and drilling will perhaps translate in the future to a population of adults who do not have a dental fear stemming back to childhood, and for whom caring for their dental health is as much a part of everyday life as haircare.

Nicola Innes, Professor of Paediatric Dentistry, School of Dentistry, University of Dundee, will be speaking at the Scottish Dental Conference and Exhibition on 'Child-friendly dentistry: how to make it part of your practice'. The session will help you identify the key features of child-friendly dentistry, learn how to apply child-friendly techniques to day-to-day care of children, plan treatment for children using child-friendly dentistry and evaluate the success of treatment.

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MANAGEMENT OF THE OPEN APEX IN ENDODONTICS

ENDODONTICS

Current techniques and new solutions when dealing with the open apex in root canal surgery

ROBERT SMYTH AND BOB PHILPOTT

The anatomy of the apical foramen changes with age as root formation has yet to be completed when teeth erupt. The completion of root development and closure of the apex occurs up to three years after eruption [1].

Patients who present with immature apical formation (see Fig 1) pose a challenge due to the presence of large open apices along with divergent and thin dentinal walls that are susceptible to fracture. Historically, we have tried to generate formation of an apical barrier by repeated placement of calcium hydroxide over many months, or more recently by immediate barrier formation with a Mineral Trioxide Aggregate (MTA) plug.

Ideal management would involve regeneration of new pulpal tissue and continued root formation. Novel techniques for dealing with immature apices such as apexogenesis sometimes claim to be regenerative techniques. However, assessment of the composition of this regenerated tissue has proven to be difficult and it seems that it is made up of periodontal and bone tissue rather than tissue of pulpal origin [2]. As clinicians we need to consider whether this is better than formation of an apical barrier and obturation by conventional means?

Root development (see Table 1)

Classically, there are two types of open apices; blunderbuss and non-blunderbuss. In the former, the walls of the canal are divergent and flaring, the apex is funnel shaped and typically wider than the coronal aspect of the canal. In a non-blunderbuss apex, the walls of the canal may be parallel to slightly convergent. The apex, therefore can be broad shaped or convergent.

TABLE 1
The five stages of root development as classified by Cvek [3] are:

STAGE	APPEARANCE
1	Wide divergent opening, <50% root length
2	Wide divergent opening, 50% root length
3	Wide divergent opening, 66% root length
4	Wide apical opening, nearly complete root
5	Closed apical foramen, Complete root length

What are the causes of open apices?

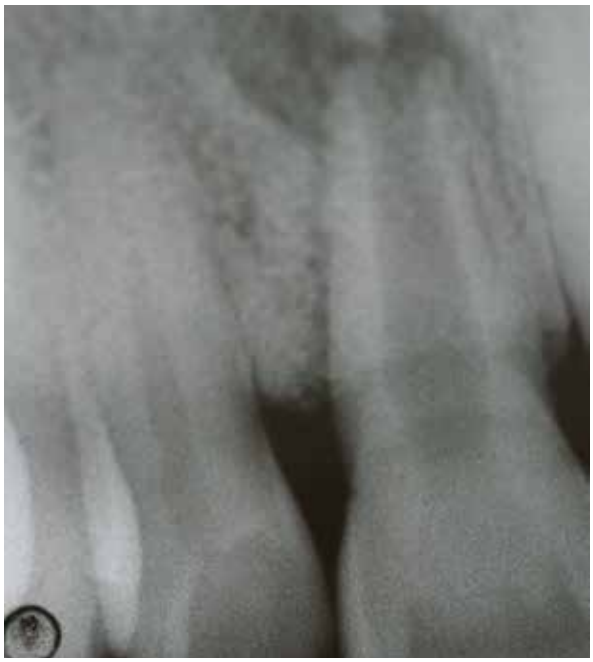
Incomplete root development often arises secondary to pulpal necrosis arising as a result of caries or trauma. Both foraminal and peri-foraminal resorption of the root end may also arise in the presence of a periapical lesion [4]. This may alter the anatomy of a pre-existing open apex further. Iatrogenic enlargement of the root end may also arise due to poor control of working length and subsequent enlargement with both hand and rotary files.

What problems are faced clinically?

Teeth with open apices often tend to have thin dentinal walls that are susceptible to fracture before, during or after endodontic treatment. Frequently, they present with periapical lesions, which may or may not be associated with apical resorption. Short roots compromise the crown-root ratio, often affecting long-term prognosis.

Fractures of the crown are common following trauma. This can compromise aesthetics, especially in the anterior region, and there may be a lack of tooth tissue present. In long-standing cases these teeth may also undergo

FIGURE 1
Radiographs showing common presentation of teeth with open apices and photographs showing gutta percha points following removal (note deposits on apical portion of extruded points)



discolouration. Large open apices pose a challenge in determining the working length, decision on the necessity of root canal preparation, and achieving control during obturation.

How is the working length determined?

There is relatively little data regarding the value of radiography and electronic apex locator (EAL) use when root formation is incomplete, and supplementary measurement techniques may be helpful. When using an EAL to measure working length in such cases, it is essential to use a file which is well matched to the apical size (see Fig 2) where possible. The paper point technique described by Rosenberg to supplement initial apex locator readings could be considered for the working length determination of open apices in relatively straight canals [5].

Marcos-Arenal et al. [6] in an in vivo study, demonstrated an 87 per cent accuracy of this technique in establishing working length to within 0.5mm of the apical foramen. While El Ayouti et al. [7] proposed a tactile method involving the use of a size 25 K-file bent at the tip, with its orientation marked with a silicone ring. The file was bent to facilitate ease of use. In this study, 95 per cent of cases were accurate to within 0.5mm of the apical foramen.

Do I need to instrument the canal?

During conventional root canal treatment, the role of instrumentation is to achieve removal of vital and necrotic tissues from the root canal system, along with infected root dentine [8]. It aims to prepare the canal space to facilitate

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FIGURE 2
Working length radiograph of maxillary anterior teeth with open apices (note large file sizes and irregular anatomy of apices)

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attempts at disinfection using irrigants and medicaments. As a result, minimal instrumentation of teeth with open apices (and thin dentinal walls) is needed due to the ease in placement of irrigation devices close to the working length.

How do I obturate the canal?

The options for obturation are dependent on whether or not we aim to create an apical barrier. Figure 3 highlights the different options. Apexification and apexogenesis are two endodontic procedures which attempt to either induce apical repair by initiating a hard tissue barrier across an open apex or to promote the continued formation of the apical portion of the root [9].

Apexification

Calcium Hydroxide has been the first choice material for apexification. Placement and repeated changes over the course of five to 20 months induces the formation of a calcific barrier. The unpredictable and lengthy course of treatment presented challenges, particularly as it required a high level of patient compliance. For this reason, one visit apexification has been suggested.

MTA has been proposed as a material suitable for one visit apexification as it combines a bacteriostatic action, biocompatibility and a favourable sealing ability. Placement of a 3mm thickness of MTA in the apical portion of an 'open apex' permits the vertical condensation of warm gutta percha into the remainder of the canal (See Fig 4).

Apexogenesis

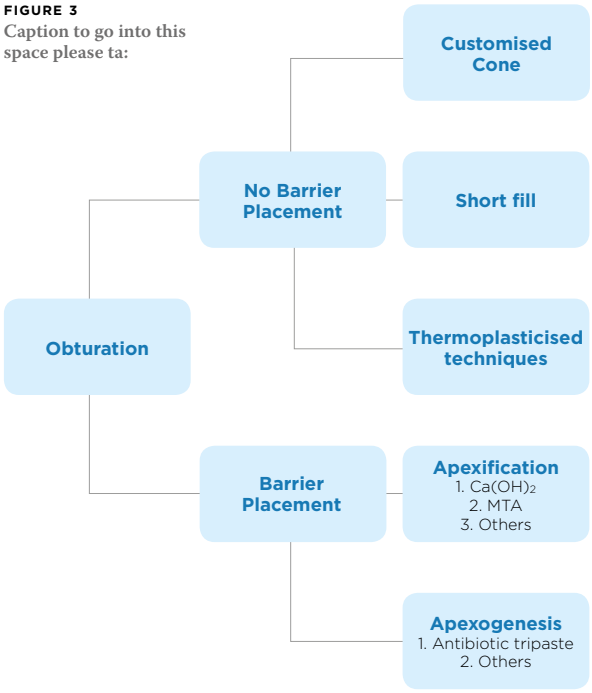
Case reports in the literature over the past 10 years have demonstrated successful revascularisation and regeneration of immature permanent teeth with apical periodontitis. Banchs and Trope [10] irrigated necrotic teeth with sodium hypochlorite, and placed an antibiotic tri-paste dressing consisting of metronidazole, minocycline and ciprofloxacin. Four weeks later, the tooth was re-accessed and bleeding encouraged at the apex, allowing a clot to form 3mm below the CEJ. MTA was placed on the blood clot and the tooth restored with composite. Follow-up radiographs demonstrated complete apical healing and continued root formation.

Shin et al. [11] treated a non-vital mandibular second premolar tooth using irrigation with 6 per cent sodium hypochlorite and 2 per cent chlorhexidine without instrumentation in a single visit. The successful outcome of this case report suggests that this conservative revascularisation treatment approach can create a suitable environment for pulpal repair, resulting in the completion of root maturation.

McCabe [12] recently published a case report showing disinfection with 5 per cent sodium hypochlorite followed by the induction of a blood clot into the root canal space may be sufficient to promote revascularisation in certain circumstances using a single visit protocol.

Most of the case reports regarding apexogenesis as a treatment modality have shown an increase in dentinal wall thickening and root length, with a reduction in the volume of the pulp canal space visible radiographically. Histological analysis of teeth which had undergone revascularisation treatment demonstrated that the mineralised layer on the walls which was present appeared to be of periodontal origin rather than pulpal origin [12].

FIGURE 3
Caption to go into this space please ta:



> Any attempt to undergo biological healing should prove to be more beneficial in the long term

What does the future hold?

It appears that current treatment approaches tend to stimulate reparative rather than regenerative responses in respect of the new tissue generated, which often does not closely resemble the physiological structure of dentine-pulp complex. Although patients requiring treatment undoubtedly make up a small proportion of our patients, and despite the biological limitations, such techniques appear to offer significant promise for improved treatment outcomes [2].

The main question is whether our patients are better served by apexification and formation of an apical barrier via an MTA plug, or whether apexogenesis and generation of reparative tissue within the canal space, even if it is periodontal in origin, is better? It could be argued that apexogenesis will make the tooth more suitable for restoration, as teeth which have undergone apexification tend to be more fragile and prone to cervical fractures.

Any attempt to undergo biological healing should prove to be more beneficial in the long term. Further research is required into this novel approach to apexogenesis to assess the long-term prognosis of these teeth. Current research on pulp regeneration is growing and provides exciting possibilities for greater biological approaches to endodontics in the future [13].

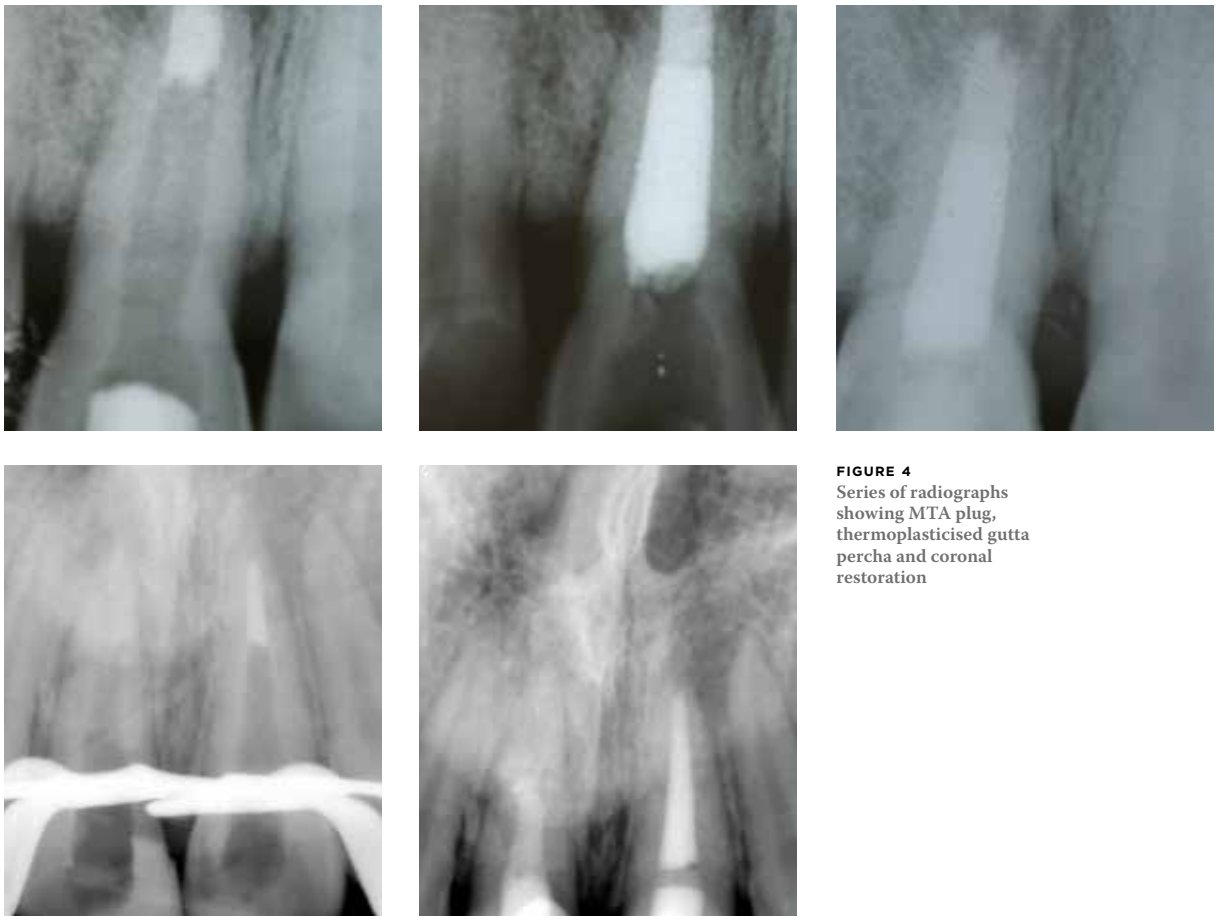


FIGURE 4
Series of radiographs showing MTA plug, thermoplasticised gutta percha and coronal restoration

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Robert Smyth graduated from Queen's University of Belfast in 2012. Following two years working in general practice in Ballyclare and Cookstown, Northern Ireland he took up a core training job at the Edinburgh Dental Institute.

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Bob Philpott graduated with a BDS from the Cork University Dental School. He subsequently completed a house officer position at the University Hospital of Wales in Cardiff and undertook his specialist training in endodontology at the Eastman Dental Hospital, London, completing his Membership in Restorative Dentistry of the Royal College of Surgeons, Edinburgh.

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VERIFIABLE CPD QUESTIONS

AIMS & OBS:
- To highlight the aetiological causes for this clinical presentation
- To identify the problems which may arise in endodontically treating these teeth
- To outline technique tips to overcome these issues in practice.

LEARNING OUTCOMES:
At the end of the article, the reader will:
- Have a better understanding of the anatomy of these cases
- Have improved their troubleshooting in the clinical management of teeth with open apices
- Understand the difficulties that may arise clinically during the root canal preparation and most notably, obturation of these teeth
- Recognise the value of newer materials for obturation
- Have a knowledge of new developments in this area of endodontics.

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IMPLANT DENTISTRY IN 3D

DIGITAL DENTISTRY

An overview of the development of 3D digital technology, from imaging to printing and how these advances aid the practice of guided implant surgery

CLIVE SCHMULIAN AND MICHAEL DHESI

A visitor to the biennial International Dental Show (IDS) held in Cologne in March this year could have been mistaken for thinking that they were attending an engineering trade show rather than a dental event. The number of companies displaying milling machines, 3D printers, CAD-CAM hardware and software reflected the rapid developments in digital dentistry in recent years.

There is no area of dentistry that is not being "disrupted" by the move from traditional analogue to digital practice, and implant dentistry is no exception. Planning software has been available for many years, but the recent addition of two concepts has seen a renewed interest in guided surgery. This article will examine optical scanning and desktop 3D printing in the production of drill guides, that may facilitate accurate surgical technique benefiting both the clinician and patient.

The aim of a detailed pre-surgical assessment is to ensure that the implant is placed in an optimal position so that it may be restored to achieve the desired aesthetic and functional result. Clinical and radiographic examination of the patient is required before implant placement. The assessment should consist of visual examination, palpation of superficial structures and the measurement of gap width, crest width and maxillo-mandibular relationships.

Radiographs are used during implant treatment planning and Cone beam computer tomography (CBCT) is used to view a 3D image of hard tissue. This enables the clinician to measure the height and width of the ridge and assess the quality of the planned implant site and adjacent anatomical structures. While there is still a place for conventional 2D imaging techniques, the use of a CBCT scan is now considered to be standard practice in implant dentistry[1,2].

The images from CBCT scans may be imported into many software packages to allow the clinician to plan the implant placement in a virtual environment prior to surgery. Programmes such as Simplant (Dentsply Implants) have had the ability to not just plan implant placement, but to use CAD (computer aided design) output to CAM (computer aided manufacture) to produce drill guides for many years. Thus, it is important to state that neither the use of CBCT or guided surgery is new.

The use of guided surgery has previously been restricted by two factors:

- Inability of CBCT to provide intra-oral soft tissue images
- Cost of drill guide manufacture.

Intra-oral scanning provides detailed surface images of the dental hard and soft tissue. These images may be merged with hard-tissue images from a CBCT scan to provide a 3D view of teeth/bone and of soft issue. As with previous software, CAD planning allows the manufacture of drill guides. The availability of affordable 3D printers now allows the dentist to produce in-house accurate and cost-effective drill guides.

Both intra-oral scanning and 3D printing date back to the 1980s. Nearly 30 years later, both are changing the way we plan implant dentistry.

Optical intra-oral scanner

CEREC 1 was developed by Dr Werner H Mormann and Dr Marco Brandestini at the University of Zurich. Thanks to more powerful (and smaller) computers and the developing application of CAD/CAM systems at the time, their vision resulted in the first of the series of CEREC machines. From its early beginnings, limited to milling ceramic inlays, optical scanning and CAD/CAM manufacture are today at the focus of many developments in restorative and surgical dentistry.

Optical scanners work by directing a light beam at an object, the light beam is bounced back to the scanner and the image is digitised. A digital image is a series of triangles joined together to make a 3D image – a meshwork of triangles – stored in digital format.

STL (STereoLithography) is the file format of stereolithography CAD software that is widely used for rapid prototyping, 3D printing and computer-aided manufacturing. Images from dental optical scanners may output to STL files (open platform) or a scanner specific file format (closed platform). The two market-leading intra-oral scanners, Trios (3Shape, Denmark) and CEREC (Dentsply Sirona, Germany) have both recently enabled STL file output for their respective scanners. This move to STL

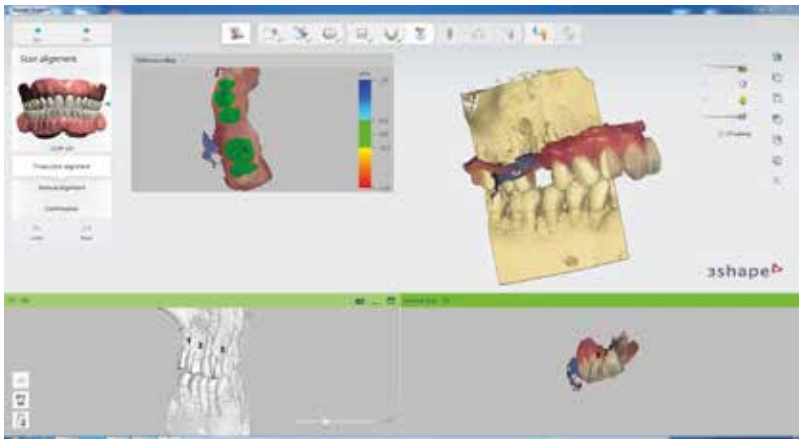

FIGURE 1 STL file is imported and combined with DICOM data from the CBCT scan

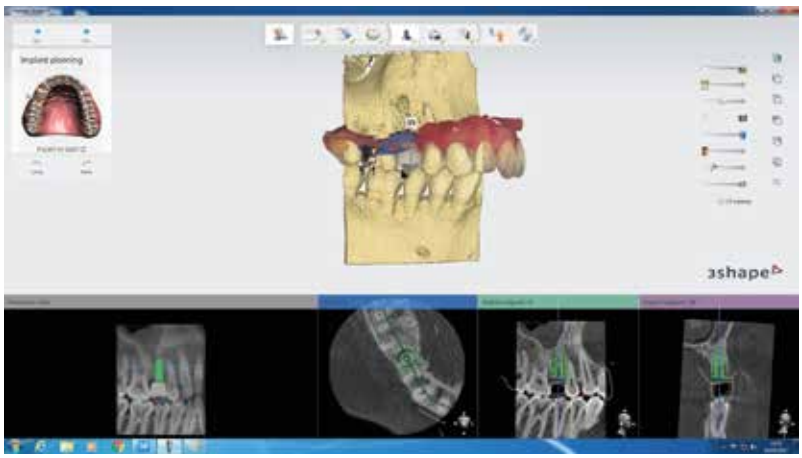

FIGURE 2 Planning the implant position

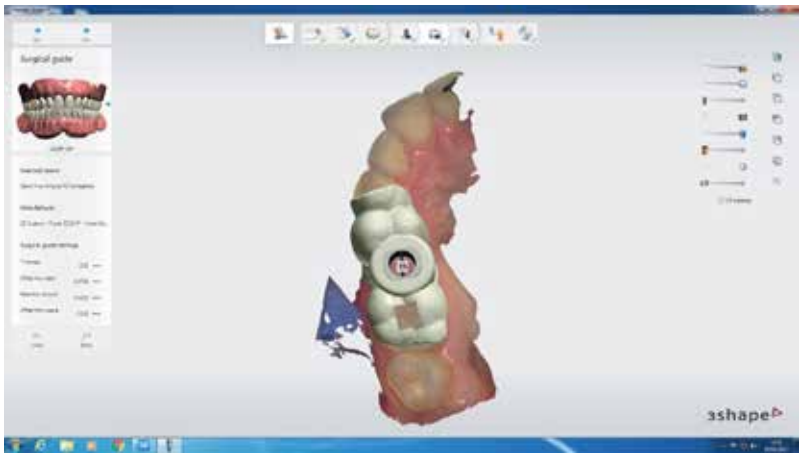

FIGURE 3 Designing a drill guide

Table 1

EXAMPLES OF IMPLANT PLANNING SOFTWARE
Simplant
Implant Studio
CoDiagnostix
Blue Sky Bio
3D Diagnostic

Table 2

FORM 2 DENTAL RESINS
Grey model resin
Dental model and die resin
Dental SG
Clear retainer resin
Denture resin (Q4 2017)

open-platform enables dentists and dental labs to make use of the STL files in a wide range of software packages, rather than being restricted to a closed-platform programme.

In relation to implant planning software, the STL file is imported and combined with DICOM (Digital Imaging and Communication in Medicine) data from the CBCT scan (Fig 1). Many planning programmes are available – a selection is listed in Table one. A comparison of the strength and weaknesses of each is outwith the scope of this article but, as with any software, one should assess its ease of use, support, cost, open/closed platform.

The software allows the dentist to plan the implant position (Fig 2) and then design a drill guide (Fig 3). The design is outputted to an STL file, which can then be sent to a 3D printer either on-site or to a third party e.g. a dental lab.

3D printing

Early additive manufacturing equipment and materials were developed in the 1980s. 3D printing, also known as additive manufacturing or rapid prototyping, refers to processes used to create a three-dimensional object in which layers of material are formed under computer control to create an object. 3D printing builds a three-dimensional object from

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FIGURE 4

FIGURE 5

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a CAD model by successively adding material layer by layer.

An early use of 3D printing in dentistry was shown in 1984 when a team working on sub-periosteal implants at Loma Linda University in California used 3D printing to produce a mandible from a CT scan[3]. The printed model of the mandible was then used to manufacture the sub-periosteal implant. The CT scan and 3D print removed the need for a surgical visit to take an impression of the mandible.

The size and cost of 3D printers has fallen, while the range of 3D printers continues to grow at an astonishing pace. Originally aimed at industrial manufacturers, 3D printers are now available for all, from those aimed at the domestic hobbyist, to small and medium-sized business and large-scale operations.

In recent years, dental applications in desktop 3D printing have rapidly taken off. FormLabs (Massachusetts, US) products have been at the forefront of dental innovation. Aimed at the "prosumer" (production by consumer) market, dentists and dental labs now use the Form 2 (Fig 4) to create surgical guides, study models, bleaching trays, retainers, aligners, and with the imminent launch of FormLab denture resin, it will soon be possible to 3D print dentures. The Form 2 printer has a range of dental resins detailed in Table two.

The dental SG resin is an autoclavable, class 1 medical device directive registered biocompatible resin. Dental SG is used for printing surgical guides. It was launched by FormLabs in 2016 and was the first biocompatible resin for desktop 3D printing. Following 3D printing in the Form 2, dental SG is light cured in a light oven (Fig 5) (Brelux Power Unit 2, Bredent GmbH, Germany), the appropriate drill sleeve is selected and fitted for either a pilot of fully guided surgery (Fig 6). The drill guide may then be autoclaved prior to surgery.

Direct printing of surgical guides has traditionally required large-scale 3D printers that are beyond the expense of most dental laboratories and practices. The introduction of dental SG Resin and the Form 2 allows for surgical guide printing in dental practices and smaller dental labs.

Discussion

It has previously been possible to combine intra-oral detail with a CBCT scan without using an optical scanner. This was achieved using a dual scan technique, whereby a CBCT scan of a study model provided surface hard and soft tissue detail that could be merged with a CBCT scan. In edentulous cases where there is no intra oral hard tissue, it is not possible to use optical scans as intra-oral soft tissue cannot be linked to a CBCT scan. In such cases it is still necessary to use a dual scan technique with radiopaque markers in a denture. Thus, merging intra-oral and CBCT scans is restricted to dentate and partially edentulous cases.

The case for the use of drill guides is that they increase the accuracy of implant placement. Many studies have evaluated the accuracy of guided surgery[4],[5],[6]. There is a perception from the marketing of guided surgery by implant companies that this technique is easier than non-guided surgery. In many cases this may be correct, but it is essential that anyone undertaking guided surgery has a sound understanding of implant case planning and surgical protocols. The guide does not place the implant, the surgeon places the implant. The surgeon must be familiar with conventional approaches to implant placement and bone generation techniques before embarking on guided surgery.

It is important to state that guided surgery does not mean flapless surgery. 3D printed guides may be used for the following:

- As pilot guides only with an appropriate muco-periosteal flap
- Fully guided with an an appropriate muco-periosteal flap
- Fully guided with a flap-less technique (Fig 7).

The surgical flap (or lack thereof) will be determined by the need for augmentation at the time of surgery. Flap-less surgery should be restricted to cases with ample bone volume and no need for either soft or hard tissue augmentation. Where there is any doubt with regard for the need for augmentation, an appropriately designed flap should be raised. Where suitable, the benefits of flap-less surgery with a drill guide include: reduced surgery time, minimal post operative complications, no sutures.

Drill sleeves for pilot guides will be determined by the diameter of the pilot drill, with a range of different sizes that are fitted to the guide following 3D printing. Drill sleeves for fully guided surgery are specific to the implant system being used. The surgeon should have additional training in the use of the guided surgical kit. This differs from the standard surgical kit in that each drill will have a stop to determine the depth of the osteotomy relative to the drill sleeve.

The drill is designed so that there is an offset between the drill sleeve and depth of the planned osteotomy (Fig 8). Inner sleeves or keys are used to match the diameter to the corresponding osteotomy drill (Fig 6). Each step of guided surgery is detailed on a drilling protocol supplied with the treatment plan.

The surgeon placing the dental implant is responsible for the implant placement, not the drill guide. The treatment plan for guided surgery must be approved by the implant

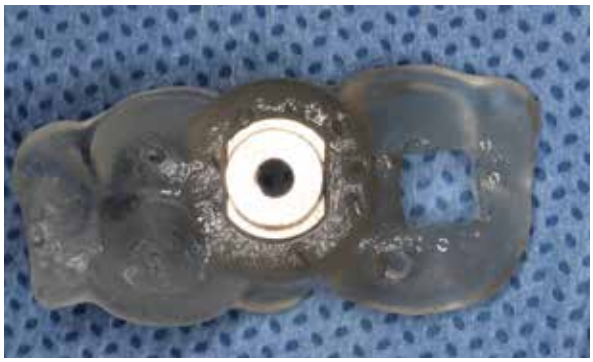

FIGURE 6

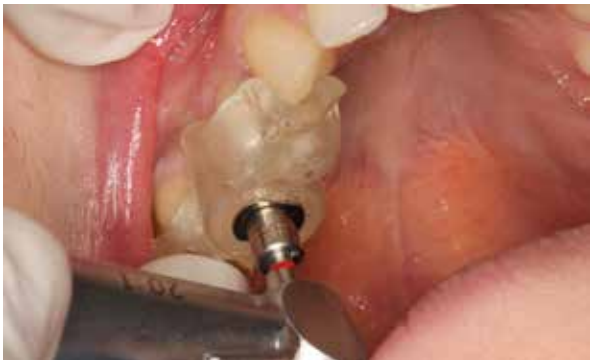

FIGURE 7

dentist prior to 3D printing. When the dental surgeon is the dentist planning the guide, this is straightforward. In situations whereby the CBCT scan/implant planning is referred to a third party, then it is essential that there is effective communication between the parties and that the guided plan is approved by the referring dentist, who is ultimately responsible for the implant placement.

Clinical records including intra-oral images from an optical scanner, CBCT scan, treatment plan and drill guide demonstrate a high standard of planning and record keeping. Such documentation may be of benefit for medico-legal purposes. As with CBCT scans, it may be that this approach will become the gold standard of implant treatment planning and record keeping.

Conclusion

It seems that all of the pieces of the guided surgery jigsaw puzzle have now fallen into place: CBCT, optical scanning, CAD/CAM software and desktop 3D printing. Digital techniques, both hardware and software, are changing the way that dentistry is practised with benefits for both dentists and our patients. Implant companies are promoting guided surgery and it is essential that dentists are trained in such techniques and have a full understanding of the benefits and limitations of guided surgery. At the end of the day, computers and robots don't place the implants… not yet, at least.

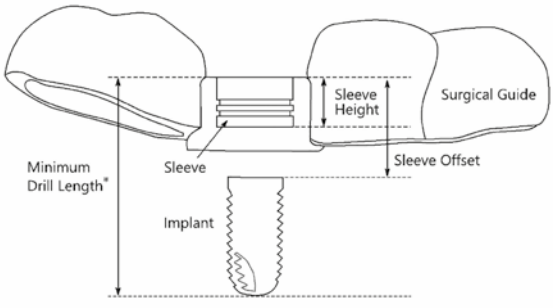

FIGURE 8

ABOUT THE AUTHOR

Michael Dhesi is a GDP at Clyde Dental Centre. He qualified in 2012 with BDS(Hons) from the University of Glasgow and has subsequently completed MFDS RCPS(Glasg) and an MSc in Advanced General Dental Practice at the University of Birmingham. Michael's focus is in minimally invasive and adhesive restorative dentistry.

He also has interests in the management of dental anxiety and oral surgery and welcomes referrals in these areas.

Clive Schmulian qualified from Glasgow University in 1993. Throughout his time in general dental practice, he has developed his clinical skills by obtaining a range of postgraduate qualifications, which in turn led him to develop an interest in digital imaging in both surgical and restorative dentistry. He is a director of Clyde Munro.

VERIFIABLE CPD QUESTIONS

AIMS AND OBJECTIVES:

1. To provide an overview of the integration of 3D printing in implant planning.
2. To discuss the integration of CBCT images and STL files in implant planning.
3. To demonstrate the use of in-house 3D printed surgical guides can improve the predictability of treatment outcomes.

LEARNING OUTCOMES:

At the end of this article, readers will:

1. Understand how to integrate 3D printing in implant planning
2. Understand the integration of CBCT imaging and STL files in implant planning
3. Understand how in-house 3D printed surgical guides can improve the predictability of treatment outcomes.

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MANAGING OSTEONECROSIS RISK

GUIDANCE

New publication from SDCEP gives advice for dental practitioners treating patients at risk of developing medication-related osteonecrosis of the jaw

SAMANTHA RUTHERFORD

In 2011, the Scottish Dental Clinical Effectiveness Programme (SDCEP) published clinical guidance on the *Oral Health Management of Patients Prescribed Bisphosphonates*. This was in response to reports in the literature describing a rare side effect in patients treated with these drugs, bisphosphonate-related osteonecrosis of the jaw (BRONJ) [1].

Bisphosphonates are prescribed to reduce bone resorption in patients with osteoporosis and other non-malignant diseases of bone and to reduce the symptoms and complications of metastatic bone cancer. The drugs persist in the body for a significant period of time; alendronate has a half-life in bone of around 10 years [2]. As dental extractions appeared to be a risk factor for this oral complication, there was a need for guidance providing clear and practical advice for dentists in primary care on how to provide care for patients prescribed these drugs.

Since 2011, several other drugs have been implicated in what is now referred to as medication-related osteonecrosis of the jaw (MRONJ). The condition has been observed in patients treated with the anti-resorptive drug denosumab which, like the bisphosphonates, is indicated for the prophylaxis and treatment of osteoporosis and to reduce skeletal-related events associated with metastasis. Another drug class implicated in MRONJ is the anti-angiogenics, which target the process by which new blood vessels are formed and are used in cancer treatment to restrict tumour vascularisation. At the time of writing, the Medicines and Healthcare products Regulatory Agency (MHRA) has published Drug Safety Updates warning of the risk of MRONJ for three anti-angiogenic drugs: bevacizumab, sunitinib and aflibercept [3,4].

Development of the updated SDCEP guidance

In response to these developments, SDCEP convened a second guidance development group (GDG) in 2015 to update the guidance. The GDG included consultants of various dental specialities, primary care dental practitioners, medical specialists and two patient representatives, who provided feedback on patient views and perspectives.

Pre-publication research was carried out by TRiaDS (Translation Research in a Dental Setting, www.triads.org.uk), who work in partnership with SDCEP, including a national survey of users of the first edition of the guidance and interviews with dentists, pharmacists and doctors. The findings informed the updating of the guidance and have been used as the basis for an implementation questionnaire and a national research audit.

A systematic and comprehensive search of the literature was conducted to inform the recommendations in the guidance. The quality of the evidence and strength of each of the key recommendations is stated clearly in the guidance with a brief justification in the accompanying text. A more in-depth explanation of the evidence appraisal and formulation of recommendations is provided in an accompanying methodology document.

NICE has accredited the process used by SDCEP to produce *Oral Health Management of Patients at Risk of Medication-related Osteonecrosis of the Jaw*, which means users can have high confidence in the quality of the information provided in the guidance. Accreditation is valid for five years from 15 March 2016. More information on accreditation can be viewed at www.nice.org.uk/accreditation

Prior to publication, the guidance was scrutinised through external consultation and peer review and it is endorsed by several of the Royal Colleges, Public Health England and Department of Health (Northern Ireland).

Medication-related osteonecrosis of the jaw

MRONJ was first reported by Marx in 2003 [1] and is defined as exposed bone, or bone that can be probed through an intraoral or extraoral fistula, in the maxillofacial region that has persisted for more than eight weeks in patients with a

history of treatment with anti-resorptive or anti-angiogenic drugs, and where there has been no history of radiation therapy to the jaw or no obvious metastatic disease to the jaws [5]. Risk factors include the underlying medical condition for which the patient is being treated, cumulative drug dose, concurrent treatment with systemic glucocorticoids, dentoalveolar surgery and mucosal trauma. It is important to note that MRONJ is a rare side-effect of treatment with anti-resorptive and anti-angiogenic drugs and, although invasive dental treatment is a risk factor, it does not cause the disease.

At present, the pathophysiology of the disease has not been fully determined and current hypotheses for the causes of necrosis include suppression of bone turnover, inhibition of angiogenesis, toxic effects on soft tissue, inflammation or infection [5]. It is likely that the cause of the disease is multi-factorial, with both genetic and immunological elements.

Incidence

Estimates of incidence and prevalence vary due to the rare nature of MRONJ. It appears clear that patients treated with anti-resorptive or anti-angiogenic drugs for the management of cancer have a higher MRONJ risk than those being treated for osteoporosis or other non-malignant diseases of bone. This is likely to be due, in part, to the substantially larger doses of the drugs that cancer patients receive.

For patients being treated with anti-resorptive or anti-angiogenic drugs for the management of cancer, the risk of MRONJ approximates 1 per cent [5-9], which suggests that each patient has a one in 100 chance of developing the disease. However, the risk appears to vary based on cancer type and incidence in patients with prostate cancer or multiple myeloma may be higher.

For patients taking anti-resorptive drugs for the prevention or management of non-malignant diseases of bone (e.g. osteoporosis, Paget's disease), the risk of MRONJ approximates 0.1 per cent or less [2,5,7,10-17], which suggests that each patient has between a one in 1,000 and one in 10,000 chance of developing the disease (Table one).

Patients who take concurrent glucocorticoid medication or those who are prescribed both anti-resorptive and anti-angiogenic drugs to manage their medical condition may be at higher risk.

The incidence of MRONJ after tooth extraction is estimated to be 2.9 per cent in patients with cancer and 0.15 per cent in patients being treated for osteoporosis [18].

TABLE 1

INCIDENCE OF MRONJ IN SPECIFIC PATIENT GROUPS	
Estimated incidence of MRONJ in cancer patients treated with anti-resorptive or anti-angiogenic drugs	1% (One case per 100)
Estimated incidence of MRONJ in osteoporosis patients treated with anti-resorptive drugs	0.01-0.1% (One to 10 cases per 10,000)

Risk factors

As outlined previously, the most significant risk factor for MRONJ is the underlying medical condition for which the patient is being treated. Dentoalveolar surgery, or

FIGURE 1
SDCEP Oral Health Management of Patients at Risk of Medication-related Osteonecrosis of the Jaw guidance

any other procedure that impacts on bone, is also a risk factor, with tooth extraction a common precipitating event [19-22]. However, MRONJ can occur spontaneously without the patient having undergone any recent invasive dental treatment.

The MRONJ risk in patients who are being treated with bisphosphonates is thought to increase as the cumulative dose of these drugs increases. One study found a higher prevalence of MRONJ in osteoporosis patients who had taken oral bisphosphonates for more than four years compared to those who had taken the drugs for less than four years [13]. There is currently no evidence to inform an assessment of MRONJ risk once a patient stops taking a bisphosphonate drug. Therefore, it is advised that patients who have taken bisphosphonate drugs in the past should continue to be allocated to the risk group they were assigned to at the time the drug treatment was stopped.

The effect of denosumab on bone turnover diminishes within nine months of treatment completion [14, 23]. Therefore, patients who have stopped taking denosumab should be considered to still have a risk of MRONJ until around nine months after their final dose. Anti-angiogenic drugs are not thought to remain in the body for extended periods of time.

Chronic systemic glucocorticoid use has been reported

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in some studies to increase the risk for MRONJ when taken in combination with anti-resorptive drugs [20], [24-27]. The combination of bisphosphonates and anti-angiogenic agents has also been associated with increased risk of MRONJ [20], [28]. The risk appears to be increased if the drugs are taken concurrently or if there has been a history of bisphosphonate use.

Despite these risk factors, the majority of patients are able to receive all their dental treatment in primary care, with referral only appropriate for those with delayed healing.

Guidance recommendations

The aim of the SDCEP guidance is to assist and support primary care dental teams in providing appropriate care for patients prescribed anti-resorptive or anti-angiogenic drugs and to encourage a consistent approach to their oral health management. The guidance also aims to empower dental staff to provide routine dental care for this patient group within primary care thereby minimising the need for consultation and referral to secondary care.

Risk assessment

The guidance advises practitioners to assess and record whether a patient taking anti-resorptive or anti-angiogenic drugs is at low risk or higher risk of developing MRONJ based on their medical condition, type and duration of drug therapy and any other complicating factors. An up-to-date medical history is therefore essential in identifying those patients who are, or have been, exposed to the drugs and to identify any additional risk factors, such as chronic use of systemic glucocorticoids. Careful questioning of the patient may be required, along with communication with the patient's doctor, to obtain more information about the patient's medical condition and drug regimen(s).

The low-risk category includes those patients who have been treated for osteoporosis or other non-malignant diseases of bone with bisphosphonates for less than five years or with denosumab and who are not taking concurrent systemic glucocorticoids. The higher risk category includes cancer patients and also those being treated for osteoporosis or other non-malignant diseases of bone who have other modifying risk factors. Figure two illustrates how risk should be assessed for each individual patient.

The risk of MRONJ should be discussed with patients but it is important that they are not discouraged from taking their medication or from undergoing dental treatment. The guidance includes details of the points which should be covered in such a discussion and patient information leaflets are also available to facilitate this dialogue. As with all patients, the risks and benefits associated with any treatment should be discussed to ensure valid consent.

Initial care

Ideally, patients should be made as dentally fit as feasible before commencement of their anti-resorptive or anti-angiogenic drug therapy. However, it is acknowledged that this may not be possible in all cases and in these situations, the aim should be to prioritise preventive care in the early stages of drug therapy. Due to their increased

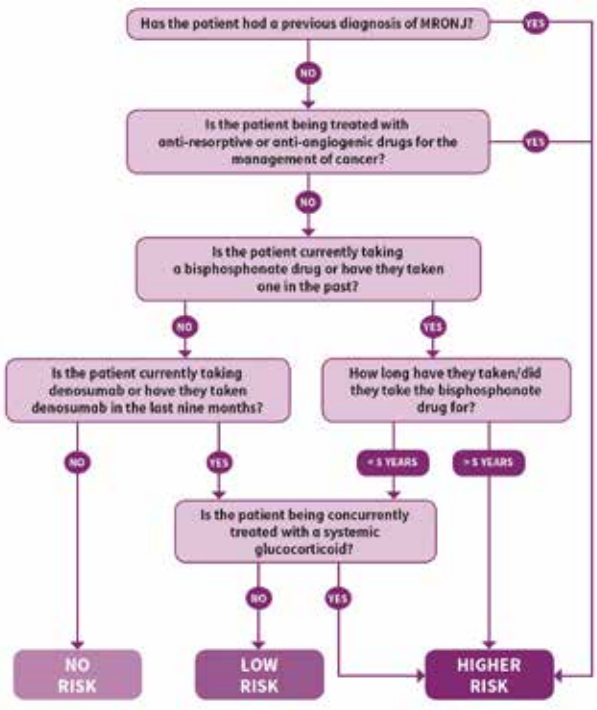

FIGURE 2
Assessment of patient risk

MRONJ risk, it is particularly important that cancer patients undergo a thorough dental assessment, with remedial dental treatment where required, prior to commencement of drug therapy. It may also be appropriate to consider consulting an oral surgery or special care dentistry specialist for advice on clinical assessment and treatment planning for these medically complex patients.

As part of this initial management, patients should be given personalised preventive advice to help them optimise their oral health. The importance of a healthy diet, maintaining excellent oral hygiene and regular dental checks should be emphasised and patients should be encouraged to stop smoking and limit their alcohol intake where appropriate. They should also be advised to report any symptoms such as exposed bone, loose teeth, non-healing sores or lesions, pus or discharge, tingling, numbness or altered sensations, pain or swelling as soon as possible.

The guidance recommends prioritising care that will reduce mucosal trauma or may help avoid future extractions or any oral surgery or procedure that may impact on bone. Radiographs should be considered to identify possible areas of infection and pathology and any remedial dental work, such as extraction of teeth of poor prognosis or treatment of periodontal disease, should be undertaken without delay. It may also be appropriate to consider prescribing high fluoride toothpaste for these patients.

Continuing care

Recommendations for continuing care advise practitioners to carry out all routine dental treatment as normal and

to continue to provide personalised preventive advice in primary care. For low-risk patients, straightforward extractions and other bone-impacting treatments can be performed in primary care. A more conservative approach is advised in higher risk patients, with greater consideration of other, less invasive alternative treatment options. However, if extraction or other bone-impacting procedure remains the most appropriate course of action, these can be carried out in primary care in this patient group. There is no benefit in referring low or higher-risk patients to a specialist or to secondary care based purely on their exposure to anti-resorptive or anti-angiogenic drugs and it is likely to be in patients' best interests to be treated wherever possible by their own GDP in familiar surroundings.

There is currently insufficient evidence to support the use of antibiotic or topical antiseptic prophylaxis specifically to reduce the risk of MRONJ following extractions or procedures that impact on bone [29-32]. Extraction or oral surgery sites should be reviewed, with healing expected by eight weeks. Evidence of delayed healing at eight weeks should be considered a sign of possible MRONJ. Figure three outlines the management of patients prescribed anti-resorptive or anti-angiogenic drugs.

Management of patients with suspected MRONJ

The treatment of MRONJ is beyond the scope of the guidance and patients with suspected MRONJ should be referred to a specialist in line with local protocols. Signs and symptoms of MRONJ include delayed healing following a dental extraction or other oral surgery, pain, soft tissue infection and swelling, numbness, paraesthesia or exposed bone. Patients may also complain of pain or altered sensation in the absence of exposed bone. Although the majority of cases of MRONJ occur following a dental intervention that impacts on bone, some can occur spontaneously. A history of anti-resorptive or anti-angiogenic drug use in these patients should alert practitioners to the possibility of MRONJ.

Guidance format

The main SDCEP guidance document provides practical advice and recommendations to inform the assessment of the patient's MRONJ risk, the optimisation of their oral health during the initial phase of drug treatment and their ongoing care. A supplementary *Guidance in Brief*, which summarises the main recommendations, is also available.

Additional tools have been developed to support the implementation of the guidance, including patient information leaflets and information for prescribers and dispensers. The aim of the patient information leaflets is to make patients aware of the risk of MRONJ, the importance of continuing to take their medication and ways they can reduce their MRONJ risk. The leaflets provide a basis for further communication between the patient and their dentist and, ideally, should be provided to patients identified as being at risk of MRONJ at the commencement of their drug treatment.

The guidance and the supporting documents are freely available via the SDCEP website (www.sdcep.org.uk).

Future research

MRONJ is a rare condition and consequently there is a lack of high-quality evidence on which to base guidance recommendations. High-quality research studies are required to determine the efficacy of MRONJ prevention protocols, both in the context of routine dental care and in those patents who require an extraction or procedure which impacts on bone. As an adverse drug reaction, MRONJ is monitored by the MHRA (www.mhra.gov.uk) and dental practitioners are encouraged to notify the MHRA of any suspected cases via the Yellow Card Scheme (www.yellowcard.mhra.gov.uk). Reporting is confidential and patients should also be encouraged to report via the scheme.

It should be noted that the use of anti-angiogenic drugs in cancer is an expanding field, and it is likely that any future medications with these modes of action may also have an associated risk of MRONJ. The establishment of a national database to monitor cases of MRONJ could inform some of the research areas highlighted above and may also serve to identify other drugs which could be implicated in the disease.

As with all its guidance publications, SDCEP plans to review the recommendations in this guidance three years after publication and revise them if new evidence or experience emerges and indicates that this is appropriate.

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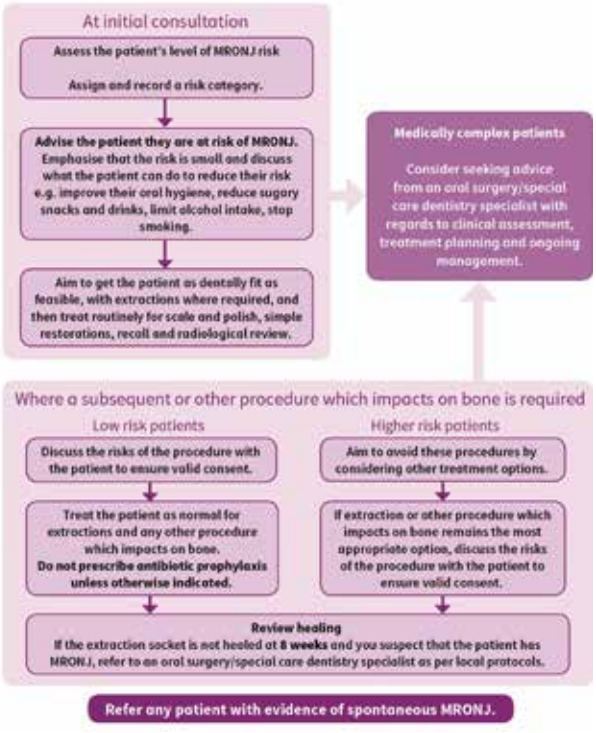

FIGURE 3
Managing the oral health of patients at risk of MRONJ

FROM PREVIOUS PAGE>

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VERIFIABLE CPD QUESTIONS

AIMS & OBS:

- To alert dentists to the publication of SDCEP's new dental clinical guidance and accompanying tools
- To provide an insight into the background evidence and judgements that support the guidance recommendations
- To give a brief overview of the key recommendations in the new guidance.

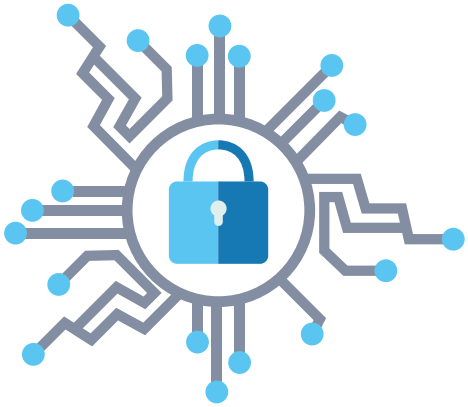
LEARNING OUTCOMES:

After reading this article the reader should:

- Be aware of the drugs associated with medication-related osteonecrosis of the jaw
- Have gained an understanding of the evidence, clinical experience and other factors that influenced the guidance recommendations
- Be familiar with the key recommendations made in the guidance.

HOW TO VERIFY YOUR CPD

Go online to www.sdmag.co.uk and click on the CPD tab to access all our CPD Q&As and certificates



DATA DILEMMA

CASE FILES

This privacy problem from the MDDUS archives looks at the issue of safeguarding electronic patient notes and ensuring data protection standards aren't breached

DOUG HAMILTON

A general dentist contacted the MDDUS with the following problem: "One of the partners in my practice has decided to set up his own surgery in another part of town and wishes to take the notes relating to his patients with him in order to aid continuity of care.

"Unfortunately, the entire practice's notes are on computer and cannot be separated electronically. Would it be acceptable for him to take a disc containing a copy of the entire practice's records so he can access his own patients' notes?"

Doug Hamilton writes:

One of the problems posed by a situation of this nature might be a potential conflict between the confidentiality rights of the two groups of patients. To process the personal information of those who wish to remain at the original practice without their express consent would be a breach of the Data Protection Act. The DPA sets out the core principles with which all organisations processing personal data must comply.

Equally, the patients who have consented to transfer of their records because they wish to follow the departing colleague are entitled to expect these records to be available for on-going and future treatment at their new practice. Clearly, complete electronic division of the databases would represent the optimum solution but this is not technically possible using the software at the practice.

You have, therefore, suggested that a copy of the entire database could be removed by the partner who is leaving on the understanding that he will only access the records of the transferring patients. It may be that you intend to employ, as an additional safeguard, a drop-down menu which guides the users in each practice to the appropriate patient list.

Unfortunately, this would not be permissible, as the notes of the patients who wished to remain at the original practice would still have been processed without their consent or knowledge.

This problem could be avoided by seeking express consent, perhaps in the form of a tear-off slip, from all patients affected. Logic dictates, however, that it would simply take the refusal of one non-transferring patient to scupper this plan.

The most feasible solution would therefore be to download the existing records relating to those patients who had decided to move, allowing these hard copies to be scanned in at the new practice.

Certainly, this may be expensive and time consuming. However, by beginning this process now, you will be in a position over the coming months to deal with subject access requests by the patients who have moved practice. Therefore, it may be wise to obtain their written consent at this stage, so that the printing and re-uploading of their notes can commence as soon as possible.

ABOUT THE AUTHOR
Doug Hamilton is a dental adviser for MDDUS. For further information, go to www.mddus.com

GLIDE PATH TO SUCCESS

MIKE HORROCKS OFFERS AN INSIGHT INTO THE DEVELOPMENT OF THE LATEST RECIPROCATING GLIDE PATH FILE FROM DENTSPLY SIRONA – THE WAVEONE GOLD GLIDER

I was first introduced to the original mechanical PathFile instruments from Dentsply Sirona more than a decade ago, which comprised of three rotary expansion files to create a glide path. At the time this represented a complete transformation for endodontics, eliminating the complicated procedure of establishing a glide path with hand files and making the whole process very easy. However, using three different files in quick succession was not ideal, neither from a time nor a cost point of view.

So, when Dentsply Sirona introduced ProGlider, a single glide path expansion file made from a pre-manufacture heat treatment technique known as M-Wire, that increased flexibility and provided a greater resistance to cyclic fatigue, we felt we were on the cusp of yet another revolution.

ProGlider was, and still is, an awesome file. With its variable taper design, it is great, not only for preparation of the glide path but also for preparing the coronal part of canals, a very important part of the canal shaping procedure. The M-Wire technology meant there was more resistance to cyclic fatigue, and a much reduced chance of file separation in the canal, while the enhanced flexibility meant it could work around curved canals much more easily than any file that had gone before.

The launch of the new generation of WaveOne Gold reciprocating files from Dentsply Sirona in 2015 was yet another milestone in endodontic file design. From a clinical standpoint the only thing that was still missing was a reciprocating glide path expansion file which would complete the WaveOne Gold reciprocating system in the same way that ProGlider completes the ProTaper Next rotary system. The frustration for a busy, or sometimes lazy, endodontist like me is that if you were using a reciprocating endodontic system, it was necessary to stop and switch the motor to 'rotary' in order to create the glide path, and then switch it back again once the path had been created, something of an added hassle and an additional element that increased overall treatment time.

Now, the WaveOne Gold family is complete with the recent launch of the WaveOne Gold Glider reciprocating glide path file. Using the same post-manufacturing heat treatment process, the instrument has the same distinctive gold appearance and is made of an extremely strong alloy called Martensitic. A standard Ni-Ti file is always straight and because it has a shape memory, no matter how it is bent, it always returns to its original shape. The flexibility and lack of shape memory of this new alloy allows the file to be pre-shaped, making it very easy to transverse even complex curved canals. In addition, its strength delivers even greater resistance to cyclic fatigue.

The ability to pre-shape the new file and its ability to navigate complex curvatures makes preparation and management, especially of posterior teeth or for mouths with limited opening, very much easier. Specifically designed as a single use instrument the ring on the shaft, as is the case with WaveOne Gold files, will expand if the file is autoclaved, rendering it unusable.

When using hand files in the traditional way to create a glide path, it is possible to encounter little lumps and bumps on the canal walls that subsequent files make bigger, consequently affecting the overall canal shaping. The WaveOne Gold Glider, however, creates a smooth pathway while simultaneously augmenting the coronal shaping of the canal, allowing for effortless progression of subsequent WaveOne Gold files, which, in the majority of cases, involves just one primary shaping file.

The WaveOne Gold Glider completes the WaveOne Gold system and once again demonstrates Dentsply Sirona's technological know-how in endodontic treatment, creating a more efficient, quicker and safer treatment pathway. It is also great for those of us who can't be bothered to change the settings on our motors!

MORE INFORMATION

To find out more about the complete WaveOne Gold reciprocating system, contact Dentsply Sirona on 0800 072 3313. Alternatively, visit www.dentsplysirona.com or www.dentsplyrewards.co.uk

Access FREE CPD webinars and product demonstrations at dentsplyacademy.co.uk

Dentsply Sirona @DentsplySirona

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Dr Mike Horrocks, BDS MSc, has been in clinical practice for more than 30 years, having graduated from the University of Liverpool in 1984. He has a masters degree in endodontics from Manchester, where he has taught postgraduate dental students on a part-time basis.

He established simplyendo in 1998 to focus on endodontic treatments. Mike launched the simplyendo education programmes in 2003, and they have proved to be very popular with dentists who wish to advance their knowledge and skills in this field. These programmes have now been accredited to full Masters degree level and Mike spends about 50 per cent of his time teaching and sharing his experiences and knowledge of endodontics with his professional colleagues.

A member of the British Endodontic Society, Mike regularly speaks at national and international endodontic meetings and arranges demonstrations of new endodontic techniques.

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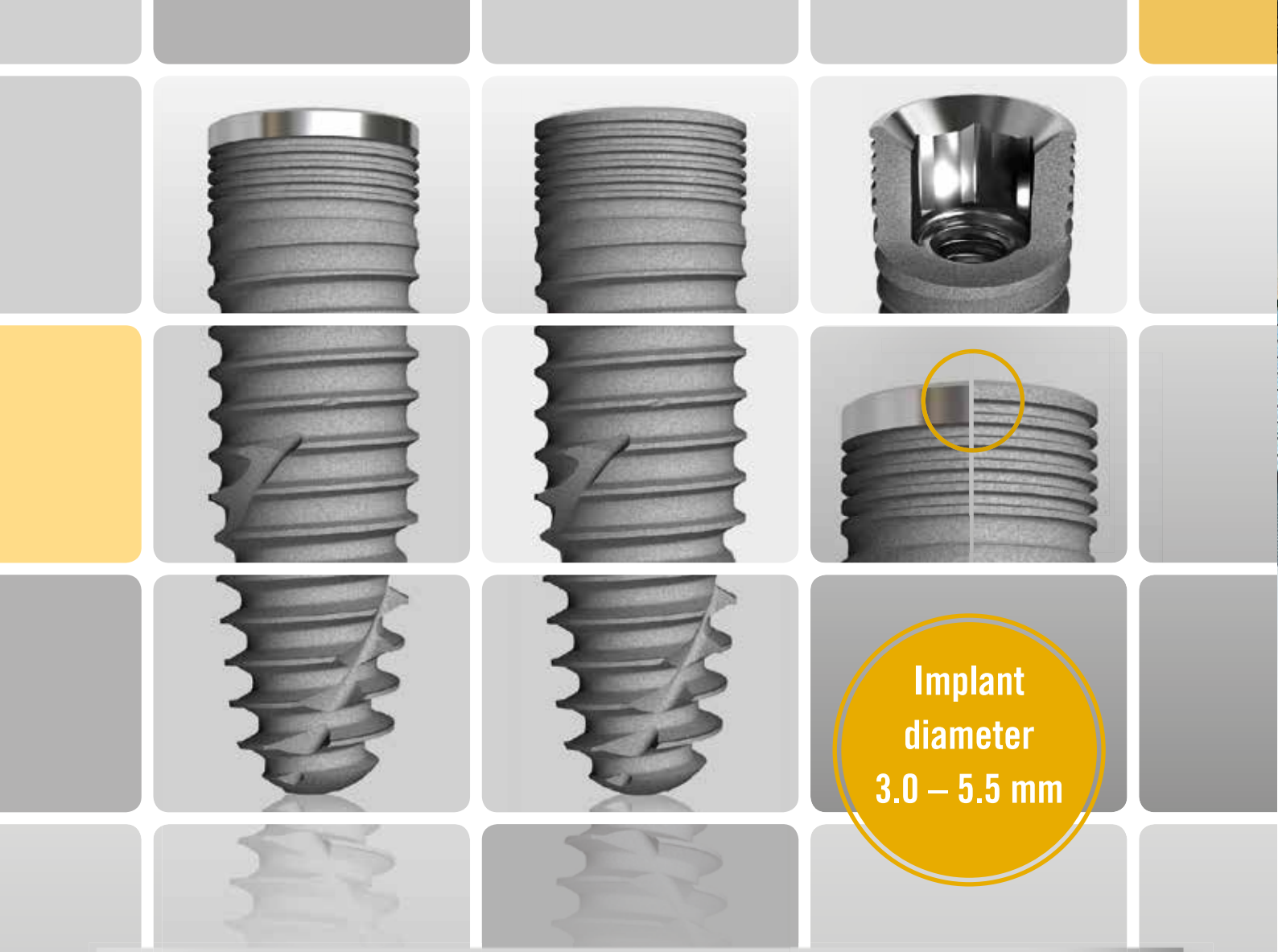

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- However complex the case you refer, whether it be the placement for a single implant or multiple units when we discharge the patient to yourself, Dr McLean will support with one-to-one mentoring sessions in restoring and guidance on ongoing implant maintenance to achieve long term health for your patients.
- Dr McLean will support your development in restoring implants by enrolling you on his restorative course, followed up with one-to-one mentoring on each individual case with additional technical support from the Berkeley's partner labs.
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- Communication support from our care co-ordinator Alison, who will refer all information between the referred dentist to ensure you are also in tune with your patient's treatment and allow us both to offer the patient the best level of care.
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- Training support for your nurses will be available in the form of shadowing implant cases and one-to-one or group training days.
- Equipment support will be offered, with your first successful referral, you will receive a free restorative kit.

We welcome all clinics to refer to us and we strive to increase working relationships through opportunity. When you choose the Berkeley Clinic as your referral practice, we would like to thank you by automatically enrolling you onto our Berkeley partner benefits scheme that includes many courses delivered by public leading figures with verifiable CPD that include restorative, referral methods, care co-ordination, implant maintenance free of charge. You will also benefit from a free restorative kit worth £800 when you refer your first patient and access to our online portal so you can follow your patient's progress.

By offering facilities like these, this enables us to stand out and offer the support to other clinics. This can help increase patient numbers and can help to establish and increase your profile.

MORE INFO

To find out more about becoming a referring partner with us, please feel free to call our care co-ordinator Alison McGrail on 0141 442 0052 or email cc@berkeleyclinic.com

We look forward to hearing from you.

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Dr Sami Butt, principal of S3 Dental in Haywards Heath, said: "I needed a fast, convenient and effective alternative to amalgam, and that's exactly what I got when I started using Fill-Up! bulk fill composite from COLTENE. That's why I've never looked back.

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"From my patients' point of view, they are always extremely pleased with the outcome, especially when combined with COLTENE's BRILLIANT EverGlow universal composite and polishing diamond brush.

"For all of those reasons, I would definitely recommend Fill-Up! bulk fill composite."

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Course overview

This course will help you to gain the skills you need to provide your patients with Full Arch treatment options. It provides essential knowledge for Full Arch rehabilitation on four implants with immediate loading. Preoperatory planning, surgical and prosthetic concepts are explained through lectures, a live surgery demonstration and hands-on sessions on models.

13th - 14th November 2017
Participants 15

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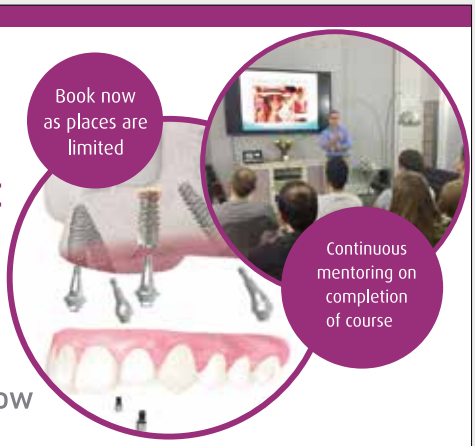

Highly experienced clinical trainer:

Dr Greig McLean
MFDS RCPS (Glasg). 2002, BDS (Glasg). 2001, MB ChB (Glasg) Clinical Director, Doctor & Dentist (GDC No 79630)

Greig is a highly experienced dentist and medical doctor with a special interest in implantology, cosmetic and surgical dentistry. He also practices the treatment of anxious and phobic dental patients. Dr McLean has been placing implants since 2005 and teaches all aspects of surgery and restoration. Dr McLean is a member of the International Team for Implantology (ITI), the Association for Dental Implantology UK (ADI) and the British Academy of Cosmetic Dentistry (BACD).

Course topic include

- Morse Taper principles
- Surgical and prosthetic components
- Immediate loading and considerations
- Immediate provisionalisation
- Complications for full arch cases
- View live surgery
- Final stage restoration and hygiene considerations

Course Features

- Working on 3d models
- See & observe live surgery
- Advanced surgical level

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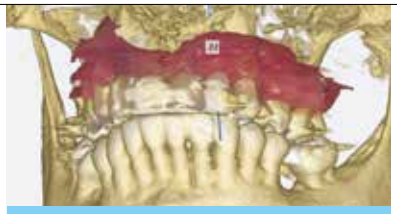

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- An introduction to 3D printing and the FormLab2 printer
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- Making 3D printing work in your practice

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- Minimal intervention
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- Treatment Planning
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THE COURSE AT A GLANCE

Module	Date	Venue	Title
Module 1	26th & 27th August	Cricklewood Hotel & Bothwell Dental Practice	Functional Occlusion in General Practice
Module 2	29th, 30th September & 1st October	New College, Lanarkshire	The Art of Composite - anterior / posterior, direct / indirect
Module 3	28th, 29th October	New College, Lanarkshire	Smile Design - The Works
Module 4	18th & 19th November	New College, Lanarkshire	Advanced treatment planning/TMJ & preparations

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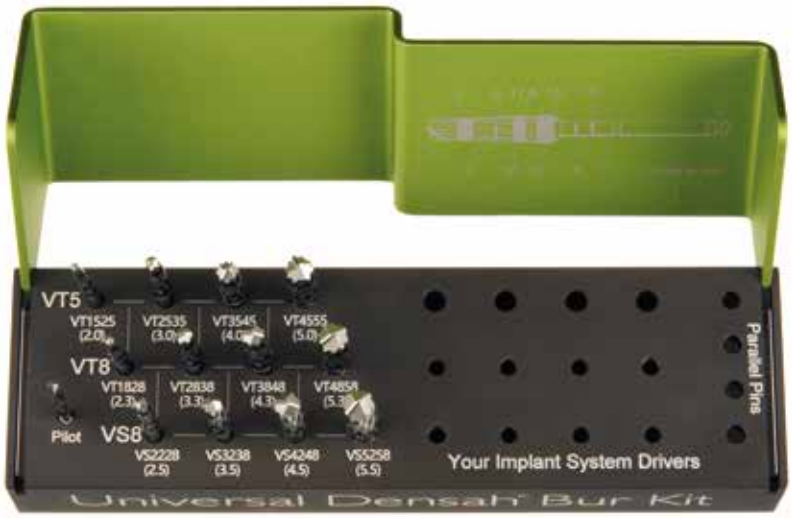
Please confirm in writing, fourteen days prior to the course. After this period, additional costs will be incurred. Bothwell Dental Care reserve the right to cancel and/or reschedule the course should unforeseen circumstances arise. Please note the minimum number of delegates the course will run with is 8. In this case the course will be cancelled and the booking and payment can be refunded or transferred.



A COMPLETE REVELATION

SCOTTISH DENTIST JOHN CADDEN TALKS ABOUT HIS EXPERIENCES WITH THE OSSEODENSIFICATION DRILLS FROM VERSAH

Following in the footsteps of his father and grandfather, John graduated from Dundee Dental Hospital in 1980, working in the family practices in Glasgow, Tobermory and Langholm before moving to Coatbridge in 2008. John completed his MFGDP in 2005 and is trained in the placement of dental implants, the delivery of dermal fillers and non-surgical facial rejuvenation techniques.

He recently attended a Versah course in London, and this is what he had to say:

"I attended the Versah course in May 2017. Having received my Versah kit previously, I felt it looked straightforward to use. However, I gained a lot more information by attending the course that I was previously unaware of, like the speed at which to use the drills and how bone reacts to drills and pressure under different circumstances. I would probably recommend anyone contemplating using these drills to go on at least one course as there is quite a lot to understand. As we all know, the bone, if insulted, can rapidly disappear so anything we can do to minimise trauma to the bone is welcome.

"The staff present were very friendly and helpful. The format was theory in the morning and practical in the afternoon. Due to the manageable numbers attending the course, it was pleasantly informal. This also lent itself to intervening with pertinent questions which enhanced the whole learning experience. In the afternoon, we used the drills on porcine bone; this enabled us to use the burs on bone of varying densities, something not a lot of courses feature.

"A case I was using the Versah drills on recently was a lady who had been indecisive about having an upper lateral implant placed. Due to a time lapse since having her tooth extracted, she had lost a fair amount of labial bone and there was quite a concavity, of which normally I might have used a ridge expansion kit or used some bone augmentation. There was quite a narrow space between the central incisor and the canine. Ridge expansion would have been quite tricky here, as on the palatal aspect the space between the two teams tended to narrow, leaving bone augmentation as the most likely method.

"Using the Versah burs I was able to prepare my osteotomy and simultaneously expand the bone buccally, thereby reducing the concavity on the labial surface of the bone and enabling me to place the implant at the same time, probably in a fraction of the time it would've taken me to place any augmentation and do a ridge expansion.

"The course I attended was held within easy walking distance from Euston station and there was a lovely lunch and coffee/snacks available during the day. I would definitely recommend the course.

"The kit is very easy to use and is laid out in the box in a very logical manner. Despite the burs looking very straightforward to use, I cannot recommend strongly enough what an advantage it was to actually attend the course and see how the burs work in conjunction with the properties of the bone, something that would be difficult to explain without a visual display. In my opinion, the burs are a complete revelation, but like everything that's new, it becomes easier with experience."


Delegates at a recent Versah course

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EDUCATION AND TRAINING

LEARNING IS ALWAYS IMPORTANT AT THE SCOTTISH CENTRE FOR EXCELLENCE IN DENTISTRY

Providing a first-class referral service has always been very important to the team at the Scottish Centre for Excellence in Dentistry, and an essential part of that has been offering ongoing training opportunities to dentists. There are short evening seminars, daily courses and courses in prestigious locations. All are well attended and offer CPD.

SUCCESSFUL WORKSHOPS AT THE SCOTTISH DENTAL SHOW 2017

Everyone had a great time at the show and the team delivered a range of workshops, including getting started in dental implants hosted by Dr Scot Muir and Dr Kevin O'Farrell; introduction to implants and restorative procedures hosted by Fiona Anderson; and dental hygienists' and therapists' role in supporting patients with dental implants, hosted by Louise Warden. Arshad Ali and Andrew Carton gave lectures in their chosen specialist fields.

GREAT EDUCATIONAL EVENT AT LOCH LOMOND GOLF CLUB

This was held on 7 June and everyone had a wonderful time listening to the speakers in the morning, playing golf in the afternoon and enjoying dinner and a prize-giving in the evening. Ana Santos Ferro from the world-renowned Malo Clinic in Lisbon gave a great presentation on the advances on All-on-4, with Arshad Ali and Scot Muir giving updates on crown and bridge and digital workflow.

ESTHETIC ALLIANCE PROGRAMME 2017

The centre offers this course in conjunction with Nobel Biocare. The objectives of the EAP course are to consider treatment planning options for missing teeth, to carry out restorative procedures for single dental implants and multiple dental implants, including overdentures for edentulous patients. This course will help you to introduce implant restoration in your practice. The course runs over two days and the next dates are Saturday 7 and 28 October. There will also be dinner on 1 November. Your investment in the course is £495, and includes a Nobel Biocare restorative kit.

COMPLIMENTARY EVENING UPDATE SEMINARS

A full range of topics are covered including implants, endodontics, oral surgery and treatment planning.

MORE INFORMATION

Please visit www.scottishdentistry.com for dates. All courses can be booked by emailing secretary@scottishdentistry.com

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Management

PRACTICAL INFORMATION FOR PRACTICE MANAGEMENT PROFESSIONALS

WHAT TO ASK

PERFECTING THE INTERVIEW PROCESS IN DENTAL PRACTICE

See page 71

MA

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THE ART OF THE INTERVIEW

A BRIEF LOOK AT THE WHEN, WHERE AND HOW INVOLVED IN INTERVIEWING CANDIDATES FOR YOUR DENTAL PRACTICE

SUSIE ANDERSON-SHARKEY

In my previous article 'To hire or not to hire' I wrote about recruitment and how to attract the right candidates. In this issue, I want to look more closely at the actual interview process, although we will still only be scratching the surface of what is a huge topic in itself.

By the time you come round to actually interviewing prospective candidates you will already have spent quite some time on the recruitment process. You will have written a job specification, a job description, advertised and screened the CVs of possible candidates for interview. The next step is to decide the 'when', 'where' and 'how' the interview is going to be conducted. In the past 25 years, I've interviewed in many different circumstances. One of the most memorable and unusual was when I worked for a dental software company and we were interviewing for a position on Friday 14 September 2001. The interview was scheduled for 11am, precisely the time that the two-minute silence for 9/11 was being held. We called the candidate into the room, sat round the table and started the interview by saying precisely nothing for two minutes! It was one of the most surreal situations I've ever been in and, yes, the candidate got the job, but that's another story!

> "A LUNCHTIME INTERVIEW CAN WORK WELL, SO LONG AS YOU'RE NOT INTERVIEWING WHILE MUNCHING INTO YOUR HAM SANDWICH"

WHEN?

So, is there a perfect time to interview? Probably not, but there are some times that are better than others. I would always try to avoid interviewing after a hectic day in the practice. You're tired by then, concentration isn't as good and you're less likely to pick up on things that you may have, had you been more alert.

A lunchtime interview can work well, so long as you're not interviewing while munching into your ham sandwich (sound familiar?). The plus side of a lunchtime interview, if held in the surgery, is that it gives the candidate a chance to have a look around and perhaps meet other members of staff. Remember, the interview process is a two-way thing. The person being interviewed is sizing you up as much as you're sizing them up and they may take one look at the place and want to run a mile!

All joking aside, we would be wrong to assume that the interview process is one sided. On occasions when I have been the interviewee, I have viewed it as an opportunity to meet the person/people and decide whether or not I feel I would like to be involved in their organisation.

WHERE?

So, where should the interview take place? We mentioned above the benefits of conducting the interview in the practice, which gives the candidate a chance to see where they may be working. Probably most of the interviews you carry out are for the position of a dental nurse, so there are definite benefits to

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FROM PREVIOUS PAGE>

keeping the interview in the practice.

If you decide to interview in the practice, do so in a place where you will not be interrupted by other members of staff or the telephone ringing. If you are interviewing in the waiting room and there is a television on, switch it off or you will find the candidate (and yourself) glancing every now and then to see what's happening on the Jeremy Kyle show (okay, so you're probably not interviewing at 10 o'clock in the morning, but you get the point). Visual and audio distractions can make the interview process more difficult and noise should be kept to a minimum.

You may decide you want to interview outwith the practice, in which case you will have to select a place and time that is suitable to all of you. I say 'all' because there should always be at least two of you in the interview process, one to talk and the other to take notes, which brings me nicely onto the next part.

HOW?

So, let's say we've decided that we will be interviewing in the practice, in a vacant room at 1pm during our lunch hour. I'm sure many interviews are conducted on a wing and a prayer, with no real thought given beforehand as to what you're going to say. Nowadays, we can't leave the 'how' to chance as there are so many rules and regulations regarding what can/cannot be asked/said during an interview.

Rule number one: keep it simple. There is no need to confuse either yourself or the candidate. Make a list of four or five questions which you will be asking to each candidate (open-ended questions) and then have another question, a random question relevant to the person who is being interviewed. For example: "I see from your CV that you enjoy skiing. Where do you ski?" The answer in itself isn't really all that important but it gets the candidate to talk.

As I said previously, two of you is ideal to interview and sitting in an informal structure to help put the candidate at their ease. Allow them, in fact encourage them, to ask questions and build this into your time allocated for the interview. Don't drag the interview out unnecessarily and don't go down sidelines, no matter how interesting they may seem. If you like the candidate you can invite them back for a second interview and explore the sidelines at that point.

So, let's summarise what is an absolutely huge topic of which I have only described the very basics. However, these points are a good place to start:

- Don't interview when you're tired
- The practice is as good a place as any to interview and has definite benefits of doing so
- Make the interview room relaxing and free from distractions
- Keep to the script, ask each candidate the same questions and don't stray from it.

ABOUT THE AUTHOR

Susie Anderson-Sharkey has worked in various capacities in the dental industry since 1991 and has been practice manager at Dental fx since 2006.

BUYING A PRACTICE? WHAT TO CONSIDER

JAYNE CLIFFORD FROM MARTIN AITKEN & CO EXPLAINS THAT WHEN IT COMES TO PURCHASING A PRACTICE, PREPARATION IS KEY

Buying a dental practice is exciting and potentially stressful. However, with careful planning, your advisers can help you to appraise the economics and keep you on the right track.

MARKETING THE PRACTICE

The first stage of the process concerns the marketing of the practice by the vendor or the selling agents. If you do contemplate a purchase, it is important to register with the agents who operate in the sector. Their knowledge of your requirements (locality, size, price, etc.) will help prioritise opportunities for you.

APPOINT THE RIGHT TEAM

Having your advisers ready to assist is crucial, as they can assess the proposition and advise on the key information that is needed for the viewing process. By discussing the proposal early and carrying out initial due diligence, you will be better placed to make the right decision at your own pace rather than, perhaps, in haste.

HOW MUCH CAN YOU AFFORD TO PAY?

Knowledge of your own resources from your accounts and what might be available from a lender will be key to purchase negotiations and paying the right price for the practice. If a property is included in the assets being acquired, then the early use of a surveyor is vital.

WHAT'S IT WORTH?

You will need to examine the thoroughness of the vendor's valuation model and the credentials of the preparer. Dental practice valuation calculations could consider various methodologies along with turnover and profits, but much can depend on the reason for the sale: retirement/illness, relocation and, of course, financial distress.

AGREE HEADS OF TERMS

If negotiations continue, the next stage is agreeing Heads of Terms (HoTs). This is a summary of the terms that the buyer and seller have agreed in principle and you need to have them checked by your solicitor.

GET CLARITY ON EXACTLY WHAT YOU ARE BUYING

The next stages are financial and legal due diligence, following which the Sale and Purchase Agreement (SPA) will be available. A lot of this depends on whether the practice-owning company and its share capital is for sale or whether an asset sale is taking place. It is vital that this is clarified as early as possible by both sides and their advisers.

THE SPA

This should address a range of issues:

- It will ensure that information about the business, including its accounts, is reliable. It is essential to view up-to-date management accounts for the practice you wish to buy as the financial health of a practice may have deteriorated since the annual accounts were produced
- Confirmation of the number of active patients, insurance patients and hygienist patients
- Damaged/old stock should be excluded from the valuation which should be carried out by an external valuer
- On purchasing a company, you inherit its liabilities, and therefore care needs to be taken to negotiate the necessary warranties and indemnities from the seller to protect your interests
- Restrict the seller from directly competing with you after completion
- Property issues such as transfer of ownership, lease provisions, planning consents and repairs
- Equipment specifications, age, insurance and any software contracts
- All employee information (pay rates, benefits, pensions, holidays, etc) must be disclosed so that the buyer knows what the responsibilities are going forward under the Transfer of Undertakings (Protection of Employment) regulations (TUPE).

RAISING FINANCE TO FUND THE PURCHASE

If you are involving a lender in the practice acquisition, make sure that you deal with representatives who specialise in healthcare. Your solicitor should advise you on the loan agreement obligations such as security over assets. You should also ask your accountant to prepare financial projections for three years both for the bank's requirements and to see how the new practice will fit into your existing financial modelling.

ABOUT THE AUTHOR

Jayne Clifford is a director at Martin Aitken & Co. To contact Jayne, email jfc@maco.co.uk

Take a step back and think strategy

HAVE YOU CONSIDERED YOUR PRACTICE'S 'HYGIENE FACTORS'?

IAN MAIN

In the busy cut and thrust of day-to-day practice management it can sometimes be very hard to take a step back and look strategically at the practice. However, it is clear from our expertise and specialism gained by working exclusively with Scottish dentists that the practices who ensure they take care of the key areas, or "hygiene factors", are the ones who consistently outperform their competitors in financial and work/life balance metrics. This is no coincidence.

Our 2017 dental benchmarking results show that the gap is widening between the best performers in the sector and those achieving average results.

The McKinsey Maxim tells us that "what gets measured gets managed", so as a natural extension if you create focus on some key areas of measurement within the practice, it is highly likely that the performance in those areas will improve.

We have developed eight key areas to focus upon to increase your chance of success. These are:

1. Leadership
2. Financials
3. Operations
4. Marketing
5. Sales
6. Team
7. HR
8. Personal financials.

How do you think your practice scores in all of these areas? Room for improvement? We'd gladly share our knowledge with you in each of these areas and invite you to contact us should you wish to take advantage of a free-of-charge practice health check audit. We look forward to hearing from you if you would like to lift your practice success levels above average.

Wishing you every success in your ongoing practice journey.

MORE INFO
To get in touch with Ian, call 0131 248 2570 or email ian@starkmaindental.co.uk

To buy or not to buy, that is the question

IS THE MARKET FOR DENTAL PRACTICES ON THE UP OR ON THE WANE? WHEN IS A GOOD TIME TO BUY? CRAIG STIRLING TACKLES THESE ISSUES

I wish I had a pound for every time I've been told that the market for the sale of dental practices in Scotland was overheating and that the upward trend in goodwill valuations was unsustainable. It seems like we've been waiting for the bubble to burst for years now and yet it shows no sign of doing so.

So, while the most recent statistics available for the UK as a whole show that valuations as a percentage of fee income fell in the three months to January 2017 (following 12 months of strong growth), that position was not mirrored in Scotland where the strong increase in valuations shown over the last two years is continuing.

English practices will typically sell for 200 per cent of the value of their NHS contract, whereas practices in Scotland usually come to the market for a price equivalent to their annual income (although for practices which are in demand, sales values can often reach as much as 130 per cent of income).

Given that the Consultation Exercise on the Future of Oral Health in Scotland clearly envisages us moving towards a contract-based system which is more akin to the position in England and Wales, it doesn't seem unreasonable to assume that goodwill valuations in Scotland might still have some catching up to do.

That certainly seems to be the view of the dental corporates who are gaining an increasing foothold in the Scottish market and, in my experience, it also seems to be the view of the 'quasi-corporates' (dentists with multiple practices) from England and Wales who are increasingly looking to acquire practices in Scotland to add to their portfolios.

So, if you're an associate with one eye on ownership, is it still a good time to buy? My own personal view is that demand continues to outstrip supply in Scotland and that prices will continue to rise for some time yet. So, at a time when the banks remain keen to lend to this sector (and on favourable terms) and average profits for associates are falling nationwide, I think it definitely remains a good time to buy. Just make sure that you speak to a specialist dental lawyer and accountant before doing so.

ASDP
ASSOCIATION OF SCOTTISH DENTAL PROFESSIONALS

MORE INFO
Craig Stirling is a Partner at Davidson Chalmers. To contact him, email craig.stirling@davidsonchalmers.com or call 0131 625 9191
Davidson Chalmers are legal specialists and members of the Association of Scottish Dental Professionals, an association of dental experts dedicated to supporting the dental profession in Scotland.

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PENSION CONTRIBUTIONS LIMITS

THERE ARE LIMITS ON WHAT YOU CAN PAY INTO A PENSION AND MANY MISCONCEPTIONS ABOUT HOW THESE AFFECT DENTISTS. JON DRYSDALE EXPLAINS ALL

There are two types of limits on what you can pay into a pension. These are HMRC limits set in law, namely the annual allowance and the lifetime allowance (LTA).

There are many misconceptions on how these limits affect dentists, especially with regard to the NHS pension scheme. Furthermore, your personal tax position will influence matters. If you exceed either limit, you will be subject to a tax charge. What are the limits and how can you avoid exceeding them?

THE ANNUAL ALLOWANCE

A generous £40,000pa is the current annual limit on pension contributions. For personal pensions, remember to convert your contribution to a gross amount. This is because the government automatically gives you tax relief on your pension contributions at a rate of 20 per cent. The 'grossing up' effect means that £32,000 translates into a gross contribution of £40,000. The calculation is: £32,000/80 per cent = £40,000.

Calculating your annual NHS pension contribution is not straightforward because HMRC do not take the actual amount contributed when making the assessment. Quantifying your NHS pension contribution depends on three things:

- the value of your existing benefits
- your NHS pensionable pay
- the prevailing rate of inflation.

You can't perform this calculation yourself and you will need to ask the Scottish Public Pensions Agency (SPPA) to do this for you. Unfortunately, the figures aren't available until after the NHS year ends (31 March), so you won't know until it is too late if you have exceeded the annual allowance limit. That said, most practitioners don't exceed the limit with NHS pension contributions alone.

Depending on your income, the £40,000 allowance may be substantially reduced. Dentists with annual income in excess of £150,000 (taxable profits or dividend income) lose £1 of pension allowance for every £2 of income over £150,000. Income of £210,000 will see the £40,000 limit reduced to a £10,000 gross annual limit on pension contributions, which is net contributions of £8,000.

HMRC offers some flexibility to those who exceed the annual allowance in the form of 'carry forward' relief. This allows you to amalgamate unused allowance from the current and three previous tax years when assessing the remaining allowance in any given year.

The table below shows an example of how this works. Even in years 2015/16 and 2017/18, where the £40,000 is exceeded, the carry forward relief ensures the HMRC limit is not breached as the cumulative total allowance remains in 'surplus'. A further £25,000 could be contributed by the end of 2017/18 to use up the full four-year cumulative allowance.

Penalties for exceeding the allowance come in the form of repayment of tax relief. Effectively, if you exceed the allowance you will have claimed tax relief you were not entitled to. In practice, your accountant will need to adjust your tax return submission from the previous year. There is also a 'scheme pays' option for the NHS Pension Scheme. This means you will have an amount deducted from your NHS pension at retirement by way of paying the excess charge.

THE LIFETIME ALLOWANCE

The current LTA is £1 million, having been as high as £1.8m in the past. Your pensions are tested against these allowances when you take income or tax-free cash. An NHS pension of £43,480pa translates to an LTA value of just over £1m (£43,480 x 20 + tax-free cash of £130,440 = £1,000,040). Personal pensions also need to be considered. For example, a personal pension of £310,000 and an NHS pension of £30,000 takes you to the £1m value (£30,000 x 20 + tax-free cash of £90,000 + personal pension of £310,000 = £1,000,000).

There are various forms of HMRC protection available should you be in danger of breaching the lifetime allowance. These could allow you to secure a personalised LTA of up to £1.25m.

However, it is essential that the protection is in place in advance of taking any pension benefits. You should be proactive in seeking advice on this because HMRC won't do the assessment for you and your accountant won't usually include this as part of their service.

BEWARE OF PENALTIES

If you do breach the allowance, the penalties can be significant. For example, where you have an NHS pension of £50,000pa, your LTA excess would be £115,000. NHS Pensions are obliged to use the prescribed HMRC formula to calculate the charge and this is deducted from your pension annually. This would be £1,437.50pa (£115,000 x 25 per cent /20 = £1,437.50). The penalty as applied to personal pensions is a 55 per cent charge on cash withdrawal or 25 per cent plus income tax on income withdrawals. This is a complex area and advice from a suitably qualified adviser is essential.

SUMMARY

The annual allowance and the LTA should not be ignored. Action to mitigate a potential tax charge is possible but only after a comprehensive assessment of your pensions by a suitably qualified professional adviser.

ABOUT THE AUTHOR
Jon Drysdale is an independent financial adviser for chartered financial planners, PFM Dental, which has offices in Edinburgh and York. Go to www.pfmdental.co.uk

TAX YEAR	CONTRIBUTION LIMITS	ACTUAL CONTRIBUTIONS	CUMULATIVE CARRY FORWARD ALLOWANCE
2014/15	£50,000	£30,000	+ £20,000
2015/16	£40,000	£45,000	+ £15,000
2016/17	£40,000	£20,000	+ £35,000
2017/18	£40,000	£60,000	+ £25,000
TOTALS	**£170,000**	**£155,000**	**£25,000 TO BE USED BY THE END OF 2017/18 YEAR**

Control your costs to get the best price

WHAT FACTORS AND COSTS SHOULD PRACTICE OWNERS BE AWARE OF IN THE SCOTTISH DENTAL MARKET?

PAUL GRAHAM

The dental industry is being increasingly viewed as part of the business and investment world. The market is no longer only attracting dentists wanting to acquire their own practices, but the sector is also drawing attention from private equity firms and others keen to invest in an industry which can produce great return on investment.

Therefore, when the time comes to sell your practice, it is more important than ever to be in control of your costs and know what's affecting the marketplace. So, what key factors and costs are important to know?

As one of the largest costs in a dental practice, buyers will be looking at staffing, i.e. the number of employees, hours worked and rates of pay. A fundamental driver of practice profits are associate costs, so it's essential that associates' pay scales are set at the correct level, as buyers will ask to see the breakdown of income by dentist and from this will calculate the cost of delivering the dental income.

An average of 16-19 per cent of total revenue is normal for nursing and support staff – if significantly higher than this, it may be a concern for prospective buyers. The income generated by both hygienists and therapists should be looked at separately as it will be delivered at a lower cost than provided by associates.

If a principal is being retained, the cost of the provision of their dentistry will also be factored into a buyer's calculation, as most principals will take their income as a dividend or out of practice profits.

More generally, we are seeing the emergence of new corporate bodies seeking to build groups of practices, and number of alternative structures that are akin to joint ventures or partnerships.

There are a significant amount of buyers now moving from England to buy practices in Scotland as the landscape of the Scottish NHS market tends to offer a more consistent approach, with investment generally stretching a bit further.

It is always best to seek advice on the state of the market and costs to control in the run up to a sale so the best price can be achieved for your practice.

MORE INFO

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Four top tax tips for business owners

LOUISE GRANT FROM EQ ACCOUNTANTS HIGHLIGHTS FOUR AREAS THAT YOU AND YOUR DENTAL BUSINESS NEED TO KNOW

Perhaps the dental profession is not the first sector you'd think of when considering whether to claim for Research & Development (R&D) tax credits. However, if you are involved with dental innovation or seeking an advance in dental technology you ought to seriously consider whether your business is entitled to this attractive tax relief.

R&D tax credits are a government incentive, and for the avoidance of doubt, the R&D activities are NOT required to be successful to make a claim.

Your company will fall into one of two schemes, and the reliefs available differ in each scheme, either the SME scheme or the R&D Expenditure Credit (RDEC) scheme.

For example, where a company falls in the SME scheme, their qualifying costs are eligible for an uplift of 130 per cent, meaning that for every £100 of qualifying spend, the company would receive a tax repayment of up to £26, assuming it was paying corporation tax.

We have a dedicated R&D team, so if you aren't sure if your business qualifies, get in touch.

The second area centres on that dreaded 31 July tax payment date which is fast approaching. Are you sure you are not eligible to reduce this payment on account? There are a variety of circumstances that can have an impact on the payment you make in July.

Thirdly, do you receive rental income from residential properties? Tax rules for residential property landlords have changed radically in recent years and are expected to significantly raise the tax burden for property owners. It is essential that you are aware of these changes to allow you to plan ahead.

And, finally, some good news. Corporation tax has fallen to 19 per cent, with plans to reduce this rate to 17 per cent from April 2020. Being proactive and having an understanding of the tax changes allows you to make informed decisions for your practice.

If you would like more information about any of the above, we'd love to hear from you.

MORE INFO

To find our more, please contact Louise Grant by calling 01382 312 100 or emailing louise.grant@eqaccountants.co.uk

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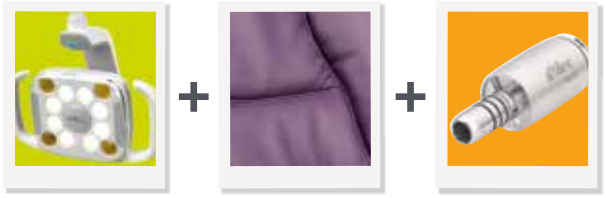

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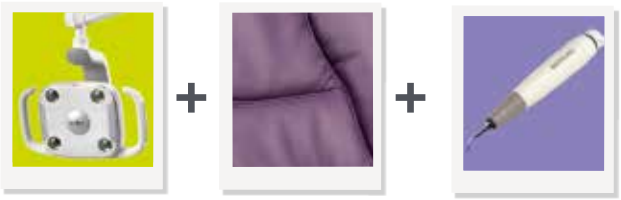

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EMBRACING THE DIGITAL WORKFLOW

GLASGOW SMILE CLINIC IS DEVELOPING ITS PHYSICAL SURROUNDINGS AS WELL AS ITS DIGITAL TREATMENT OFFERING FOR PATIENTS

BRUCE OXLEY

Digital dentistry has been growing apace in recent years with new technology improving and advancing at an astonishing rate. However, rather than integrating new digital technology with existing 'analogue' techniques, such as impression taking and manual analogue wax-ups, the Glasgow Smile Clinic is part of a small, but growing band of practices that have completely adopted the notion of the full digital workflow.

This means that, from start to finish, the patient journey is completely digital, from intra-oral scanning, digital X-rays, CBCT imaging, on-screen software manipulation to 3D printing and computer guided implant placement.

Partners Jameel Gardee and Haroon Sher have been practising together since 2010, but with the acceleration in digital technology, they have fully embraced what they believe will become the "new normal". Haroon said: "In the last two or three years we have worked to move the clinic forward and towards our aim of being fully digital.

"Compared to just a few years ago, you wouldn't believe the quality and precision of treatment that is possible with modern equipment and techniques. In the past, there would always be an element of human error that would have to be accounted for. With digital dentistry, that human error is reduced for the most part and it really has revolutionised the way we do dentistry."

Jameel further explained: "Dentistry, and 'digital dentistry' are not separate entities. They are one and the same to us and this is the way the whole industry is moving. It's inevitable."

DEVELOPING THE SPACE

The practice was established in 1996 as the Argyle Dental Surgery, which was a fully NHS clinic. Jameel joined in 2001 with Haroon coming on board some years later, at which time the practice was rebranded as the Glasgow Smile Clinic. Jameel is now fully private while Haroon sees a mixture of private and NHS patients and is the vocational trainer at the practice. Two associates, a VT and a hygienist/therapist coupled with the proficient nursing staff round off the clinical team.

CBCT machine

Initially, the clinic had two surgeries upstairs and an LDU and storage space in the lower ground level. In 2010, a new surgery was installed downstairs and this is where the more complex implant surgery is carried out. It is a large space, well designed with glossy white walls to maximise the reflected light coming through the glass sliding doors and stairwell.

Both the ground floor surgeries have undergone recent remodelling, continuing the theme of black floors with glossy white walls. The large studio lights and photography equipment add a touch of dramatic flair to surgery one and emphasise the practice approach towards using visual aids for diagnosis, treatment planning and treatment delivery.

In November last year, the reception and patient waiting area were architecturally redesigned. Previously, the reception area contained a large wooden desk and black sofas and chairs set against the walls for patient seating.

However, as Haroon explained, space was at a premium so they wanted to make the best use of the area without compromising the patient experience.

The result is a radical new look

CONTINUED OVERLEAF>

The radical new look for the reception area and (bottom right) the practice's desktop 3D printer

FROM PREVIOUS PAGE>

combining textures of solid oak, corian, ceramics and acid-washed steel. The new reception desk is now set back against the right hand wall as you enter the practice with oak wood panelling behind featuring the clinic's logo in brilliant white corian. The desk itself features a corian worktop with acid-washed steel frontage, which features brass laser-cut lettering in relief. The combination of metal and wood continues in the wall facing the door and a bespoke steel and brass magazine rack has also been built into the wall next to the window seat.

The seating was always an issue, with space being tight, and Brian and Ollie managed to develop an idea of integrated seating by designing leather-covered window seats and two pure wool-covered wall seats that project from the walls and provide comfortable but unobtrusive seating. The waiting room is also full of interesting design touches, from the pendant Italian lighting – cast brass in an inverted trumpet shape – over the reception desk, to the antique brass door handles, all adding up to a stylish yet subtle look. The effect gives not only a real feeling of increased space and comfort, but a higher level of style that befits the nature of the treatments the clinic provides.

GOING DIGITAL

At the same time as the reception was being refurbished, the practice invested in a Carestream 8100 CBCT machine to complement the two 3-Shape intra-oral scanners and Formlabs 3D printer that the practice already had. Blue phase Style 20i lights for the practice have been supplied by Ivoclar Vivadent and dental chairs were supplied from A Dec UK.

Haroon said: "We've made a big investment in our digital equipment which makes for a much improved and streamlined patient experience. Being able to superimpose photos, CBCTs and intraoral scans of the patient and prostheses gives us the ability to plan things to a level of precision that just wasn't possible before."

Haroon explained that he is now placing around 200 implants a year and both he and Jameel treat complex interdisciplinary cases together involving orthodontics, implantology, grafting procedures and restorative treatments.

Haroon began his implant training by initially completing a year-long implant course coupled with further shorter courses in advanced bone grafting techniques, and also underwent training in aesthetic dentistry at the Eastman Dental Institute in London.

He is currently in the latter stages of studying for his diploma in implant dentistry at the Royal College of Surgeons. He is also a member of The Digital Smile Design (DSD) Team, a concept devised and made famous by Christian Coachman.

Jameel qualified in 1995 from Glasgow University and in 2001, completed a postgraduate degree in advanced restorative and aesthetic dentistry from Boston University, where he was also a resident in the Department of Restorative Sciences. He is a DSD Master and an official DSD Instructor.

Jameel is one of seven members of the Worldwide SKIN Concept group led by Master Paulo Kano and he lectures all over the world on these subjects. Clinically, he currently limits his practice to cosmetic, restorative and implant dentistry.

Haroon and Jameel regularly collaborate together on complex cases and accept referrals for a wide range of treatments, including digitally guided restorative, implant and bone/soft tissue augmentation procedures. They have welcomed and continue to encourage referring dentists to attend along with their patients to observe the full digital workflow and hopefully incorporate these techniques into their own practice.

SKIN CENTRE

Glasgow Smile Clinic is an accredited SKIN centre, a revolutionary restorative concept from master dentist and dental technician Paolo Kano that mimics the morphology of natural teeth to perfectly replicate nature. Jameel explained: "SKIN brings the algorithms of naturally beautiful teeth to dentists wherever they are. Technicians can only accurately replicate a handful of algorithms but SKIN can call on a database of thousands of teeth to perfectly reproduce the shape, texture and morphology of naturally beautiful teeth."

The concept allows almost immediate mock-ups to be placed in the mouth in the first visit to allow the patient to not just imagine how their new teeth will look, but actually see it in real time. SKIN encourages the utilisation of video to show the patient how they will look and let them see their new smile from all angles.

The new DSD smile donator concept means that the teeth of relatives, friends, complete strangers or even celebrities can be 'donated' virtually by intra-oral scanner and then replicated and subsequently placed in the mouth of any eligible patient. Christian Coachman, for example, is reported to have a scan of Elvis' teeth and is able to produce exact replicas of 'the King's' teeth.

Jameel revealed that a digital database of smiles called the Digital Smile Donator Library is in development meaning that teeth donated by anyone, anywhere in the world will be added to the database and meaning that patients in Scotland could have access to teeth from Holywood actors or Bollywood stars, sportsmen and women as well as normal patients from around the globe.

Haroon said: "Quite simply, digital is better. It's the way the world is headed and dentistry is no different. Take the example of Blockbuster versus Netflix. Blockbuster didn't move with the times and where are they now?"

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GET THE BEST ADVICE YOU CAN

THIS SPECIAL BUYING AND SELLING FEATURE LOOKS AT SOME OF THE EXPERTS YOU NEED TO CONSULT IF YOU ARE SELLING UP OR LOOKING TO BUY

Becoming a practice principal is not for everyone. There are many dentists who are happy to work as associates their whole careers and don't feel the need to put on the boss hat.

However, for those who are that way inclined, it is still a decision not to be taken lightly and certainly one that is not to be rushed. Done right, this could be the practice where you spend the rest of your career. Done wrong and it might not just be your pocket that is hurt.

At the moment, dental students don't get any specific business advice in dental school so, where do you start? The best advice *Scottish Dental* can give is simply to get the best professional advice you can. There are a few people and companies out there who specialise in matching dentists with practices and vice versa, and they are usually a great starting point. They will have a good knowledge of the market and an idea of what similar practices have sold for, so you won't be going in blind.

A specialist dental accountant is also a must and, if they don't work with a law firm, you will need to get one of those on board. They will be able to hold your hand through the most complicated of practice purchases and will be invaluable going forward as well. Get the right legal and financial advisers in place and your business will have the best chance of prospering.

Over the next few pages of this special feature, you will see some of these experts; they are the go-to guys when it comes to buying and selling a practice, so get in touch if you are in the market to sell up or get on the dental property ladder.

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DISCOVER THE BENEFITS OF SPECIALIST KNOWLEDGE

USING A SPECIALIST RECRUITMENT AGENCY CAN BE A COST-EFFECTIVE AND EFFICIENT WAY TO HIRE STAFF IN COMPARISON TO IN-HOUSE RECRUITING, PROVIDED YOU'RE GETTING THE MOST FROM YOUR AGENCY

In the event recruitment is not an ongoing process (e.g. for small practices), in-house recruitment is likely to be an additional task and potentially a burden to the practice managers and their core job. For small groups of practices, using a recruitment agency can be the best way to access pools of dental professionals, including those not actively seeking new employment. So, here are the key reasons why you should use a recruitment agency:

KNOWLEDGE OF THE MARKET

The best recruiters will have their finger on the pulse regarding the dental industry, and can give the hiring managers an insight in to what is happening. They should know the available talent, where they are and how to reach out to them, salary rates, career expectations, available skill-sets and current hiring complexities. If other practices are struggling to find the same people as you, they should be able to advise on alternative solutions. The best will act as partners and an extension to the current practice team, and should be your eyes and ears in the industry.

TALENT REACH

Some candidates are very hard to find. They may be passive or they may be particular with the position they require. If they aren't responding to job advertisements, don't see themselves as part of your talent pool and are too busy to search full time, then the chances are that they may have relationships with trusted specialist recruiters within the dental industry.

Even if they aren't currently active, there's a strong chance that a good agency will know who they are and how to reach them. Agencies have many networks – each consultant, candidate, client or partner has the potential to leverage their networks to help connect you to people with a range of skills and experiences, many of who would be off the radar of an in-house team or hiring manager using traditional media/online methods.

CANDIDATES NOT APPLICANTS

A lot of vacancies are aimed at attracting applicants, whether they are responding to an advert, applying on spec, or through your website. A lot of these people may not be good matches for the role hence a lot of time will be invested in filtering, assessing, matching and communicating with them. When we talk of a bad candidate experience it's normally an applicant experience that we are referring to.

Time, resource and poor recruitment teams may not be able to run a thorough matching process. Using a proven industry specific agency should mean that you see only candidates who have been preselected to match all the criteria that you are looking for and who are worthy of consideration and interview.

TIME AND MONEY

Money and resources are two of the biggest concerns for most practices but, when budgets tighten, recruitment agencies can prove particularly valuable. Searching for candidates on your own uses valuable time and resources that could be better spent, but an agency can filter through the applicants for you, meaning you'll only have to interview the very best. Using an agency could provide a much quicker turnaround then the conventional method, this would enable less down time in surgery thus not hampering the income of the practice.

NOTHING TO LOSE

Ultimately, you have nothing to lose. There is no initial outlay, no marketing costs to absorb, and the best agencies offer a rebate so, if the candidate who is placed isn't the right fit, you're given a full/partial refund of the fee paid depending how long they have been in employment, or in some cases a free replacement can be sourced very quickly. This gives peace of mind that there has been no waste of expenditure during the process, with a fee only due on a successful placement.

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AN ALL-ROUND ADVISER IN YOUR CORNER

MICHAEL EDWARDS ON HOW TO GET THE BEST PRICE FOR YOUR PRACTICE

Earlier this year, I discussed why now is the time to consider selling your dental practice. Have you given it some thought?

Whether you are 35 or 55, every practice owner should be planning the sale of their practice on an ongoing basis with a view to maximising the return on their investment now and in the future. Maximising profitability of your practice ahead of a sale is of fundamental importance as this will be one of the two key components that ultimately drive the sales price, also allowing you to benefit from improved returns while the practice is under your ownership.

This is easier said than done, but developments with practice management and cloud-based bookkeeping software are making it easier to analyse and benchmark performance against peers while

maintaining easy-to-access digital records. It is certainly worth dedicating time to regularly review practice performance with your key stakeholders, including practice managers, and seek advice if you require support.

The other key component of maximising your sales price is driven by the sales process and the negotiations which should be handled by experienced corporate finance advisors. One of the key negotiations will be around the structure of the offer and the tie-in period for the sellers following completion of the transaction. I advise appointing experienced negotiators to handle these discussions for you.

It is also important that the tax implications of your practice sale are fully considered as part of every sales process and therefore crucial that you have experts as part of your advisory team.

Choose an advisor who has the ability to support you throughout the sales process, allowing you to focus on delivering patient care and running your practice.

MORE INFORMATION

Contact Michael on 01224 049 594 for a confidential, no-obligation discussion regarding the sale of your practice or cloud accounting solutions.

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LIMITLESS POTENTIAL

MARTIN LECA, DIRECTOR OF LECA DENTAL LABORATORY, DISCUSSES THE IMPACT OF DIGITAL TECHNOLOGY ON THE ORTHODONTIC SECTOR

Digital technology has had a huge impact on the dental industry, particularly in recent years, so much so that many digital processes are now treated as business as usual. The effects, however, continue to trickle down through the different disciplines and it is now that we see the knock-on impact of new technologies right across the industry.

For the orthodontic specialist, digital advances are generally hailed as having a positive impact particularly on the accuracy of products, but also on the range of appliances that can now be offered.

In this article I'm going to explore the impact that technology has had on the orthodontic sector.

As an end-to-end digital workflow becomes a more familiar process with practices everywhere, this shift has made it more possible for the industry as a whole to speed up its processes, meaning more patients can be treated with a greater level of quality and accuracy.

The technological advancements can be applied to everything in orthodontics, from diagnostics to impression taking, treatment planning, 3D imaging, product creation and beyond. However, we must remember that the benefits of today's innovative processes for dentistry, still requires the dentist and orthodontic technician to be knowledgeable about what is available, what is possible and how to apply the procedure in the practice, or laboratory.

The focus now on digital for orthodontic treatments is no doubt beginning to set new standards, and has certainly become the definition of any future training route for newcomers to the industry. At Leca, we value staying ahead of the game, and up to date with all the latest orthodontic equipment, innovations and techniques, and incorporating these allows us to offer some of the most effective orthodontic products available.

As advances in technology across the dental fields have continued, orthodontics is definitely keeping up with the pace. For people who now require either a fixed or removable appliance, computer technology is a vital step in their treatment. Utilised as a combination of digital imaging and CAD interfaces, these technologies are responsible for everything, from delivering accurate scans through to product production in the lab.

For orthodontics and technicians digital methods assist in many ways, but we can identify some of the key benefits as:

- Accuracy – computer imaging has improved the orthodontist's ability to accurately view the condition of the teeth. Imaging captures the exact layout of the mouth, including areas that were historically tougher to measure providing a perfectly accurate starting point for the technician.
- Efficiency – a patient's visit to the orthodontist should certainly be quicker than ever before. The examination process will be straightforward, removing the lengthy process of impressions. For a technician, files are received instantly, and work can begin straight away.
- Outcomes – with a treatment plan designed on improved imaging, results are better than ever before. The accuracy level is so high that it is very rare that an appliance would have any fit issues, and therefore patients can expect optimum comfort and precision from their treatment.
- Patient communication – digital scanning allows the patient to see a more visual representation of both what the treatment will look like and what can be expected from the outcome, making them more engaged and involved with their treatment plan.
- Virtual storage – by providing scans, the lab only has to store electronic files and models, reducing the need for physical storage space, thus promoting a more environmentally friendly working environment.

Jackie Bell is an orthodontic specialist at Leca with more than 30 years of experience. She has worked through many changes in the industry and this is what she has to say about the impact digital is having on the orthodontic side of the business: "Our digital investment has enabled us to compete at the top end of our market place as we can provide everything from digital models, digital archiving and, most importantly, more precision in our production, along with a faster turnaround for our customers. Being digitally integrated has cut down our need for physical storage space and so also helps us become a more environmentally friendly lab.

"Having worked through the transition over the past few years, I have without doubt been able to see that as we become more and more dependent on the digital workflow, our precision of production, quality and turnaround for our customers has improved. It did take a while to fully adapt to the new processes, but now the benefits are clear to us all and we are now looking forward to even more future developments for the orthodontic profession."

The future potential for the dental profession is endless and the next years will see further innovations in both imaging and manufacturing procedures. The dental laboratory should simply become even more seamless if they are in a strong position to adapt to the improved dental techniques. We look forward to keeping digital at the forefront of our future investment plans and maximising the benefits for dentists and patients alike.

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DON'T JUST PROMISE, DELIVER

MEETING PATIENTS' EXPECTATIONS CAN BE DIFFICULT, BUT NEW TECHNOLOGY AND SIMPLE, TRIED AND TRUSTED TECHNIQUES CAN GET THEM ON BOARD

Fig 1 – Patient before smile design scanned using 3Shape Trios3

It's a big dilemma in dentistry: should you be maintaining your patient's teeth or, in a lot of cases, actually giving them the smile they want? We all know this isn't always the same thing.

The European dental space as a rule has always been about function over aesthetics, but with modern materials and technology there has never been a better time to achieve both and still manage the patient's expectations.

Patients are more aware than ever thanks to the internet and celebrity magazines. On some occasions they are more up to date than the dentist with new materials and techniques because "someone on 'The Only Way Is Essex' had it done". It can be difficult to live up to these patients', often unrealistic, expectations.

However, with the support of good treatment planning processes, such as Digital Smile Design (DSD) and the SKIN Concept, we can go some way to meeting those expectations. These processes don't do anything revolutionary, they merely demonstrate simple techniques to show the patient what they will look like with their dream smile – which at the end of the day is what they all want – and then support this with high-quality treatment planning and clinical dentistry to deliver the end product.

A new generation of dental lectures led by Christian Coachman and Paulo Kano, the people behind DSD and SKIN, are filling lecture rooms around the world, guiding us through a very patient-centric experience. They use nothing more high-tech than your average smartphone to transform the approach of the patient experience.

Taking all, or elements of, protocols and techniques that are presented in these practical courses makes perfect sense and turns the appointment into an experience. The full DSD process is not for everyone but I believe we can all take some elements from it that can be slotted into our everyday schedule that will improve patient acceptance of treatments. We are now living in a world of instant results that are just not possible in most larger procedures. However, by using digital photography, a little Photoshop and some simple mock-up procedures, you can show them what they can have in a much shorter time and with relative ease.

Jameel Gardee, a dentist from Glasgow Smile Clinic and a DSD master, said: "Completing a smile mock-up doesn't convince people to have treatment they don't want. It allows them to see what's possible. In a high-value treatment plan, a patient, after seeing a mock-up, will never say it's too expensive, if it's not affordable to them today they change to 'I can't afford this right now', which is a huge change in mindset. You can bet that when they can afford it they will be back to you and no one else.

"Patient acceptance is also significantly higher in cases completed this way. More importantly, with digital scanning, DSD design and a competent digital laboratory, you can achieve consistently fantastic smiles exactly as your patient was shown in any mock-up. It makes the difference having a patient leaving happy with treatment and restoration, and an ambassador for your practice."

This is the face of modern private dentistry with an increasingly knowledgeable patient that will no longer take the word of their family dentist. They will search for the clinician that meets the reputation and technology that they think they deserve. They will also presume that if you don't advertise it, then you don't do it and they will go to someone who does.

More and more I speak with dentists whose patients have had aesthetic work done elsewhere then returned to their family dentist for "normal" maintenance work. On quizzing the patients why, in all occasions the answer is "I didn't realise you did this".

The modern private patient knows what they want but, unfortunately, the internet does not give them clinical suitability. So, processes like Digital Smile Design give them a realistic result they can see and, more importantly, desire. If you get the chance, get to a DSD lecture and see why the industry is moving this way. DSD UK and SKIN UK run everything from introductory courses to three-day live

Fig 2 – Emax CAD restorations using SKIN natural morphology milling

Fig 3 – Final restorations using Paulo Kano Magic Make-up staining technique

patient courses and provide mentoring on the process should you need more. Once you see the reaction of a patient, you will be sold on the process. I know I was.

Convincing and engaging the patient is just the first stage of the process. Beyond this, the treatment planning and achieving the result is the harder part. That's when it is important to work with a dental laboratory that understands and can deliver on your promises. This means great communication, being digitally enabled to work with technology and using modern dental techniques and working with the best materials. Using technicians trained and accredited to both DSD design and manufacturing will guarantee consistent and repeatable results.

By combining all these aspects within our new digital dental world, it has never been easier to show your patient the dream then, more importantly, deliver the dream smile.

MORE INFORMATION

Graham Littlejohn is a director of Dental Technology Services (DTS) a third-generation family dental laboratory based in Glasgow and is founding board member of Core3dcentres, one of the world-leading manufacturers and developers of digital dental restorations operating in more than 15 countries.

DTS and Core3d have been at the forefront and working with digital dentistry for more than 20 years and their technical staff are trained and accredited by both DSD and SKIN, helping customers through the confusing world of scanners, workflows and new materials.

Fig 4 – Restorations in mouth exactly as digital mock up

Fig 5 – Close up of fitted restorations

All images courtesy of Dr Jameel Gardee

THE ROYAL TREATMENT

DUNFERMLINE DENTAL LABORATORY PROVIDES FULL-SERVICE SOLUTION, FROM HIGH-QUALITY PROSTHETICS TO ORTHODONTICS AND CROWN AND BRIDGE WORK

RD laboratory is an established professional dental laboratory with more than 25 years' experience. Partners Shaun Forker (prosthetics and implants) and Alan Nicol (crown and bridge) started the Royal Dental Laboratory in 1989 and, after a period of steady growth, the business was incorporated in 2002, becoming RD Laboratory Ltd.

In 2006, the business relocated to a newly refurbished 2,000 square foot laboratory. Since then, it has continued to expand services, and staff training is ongoing to ensure practices are both current and of a high standard.

All RD technicians are registered with the GDC and at present there are three apprentices working towards their HNC in dental technology.

As a full-service laboratory, RD Lab can cater for every aspect of dental practice work. The specialist crown and bridge department is well versed in dealing with all aspects of fixed single unit, multiple unit and large bridge work, working with both precious and non-precious metals.

The lab also offers: IPS e-max, for single crowns and small bridge work, as well as inlays/onlays; zirconia for single crowns and small to large bridge spans; gradia composite for single crowns, inlays/onlays and temporary Maryland bridges; and acrylic for single crowns and small to medium bridges.

All aspects of implant work for all the major systems are also undertaken, including fixed and removable acrylic work on cast or milled metal frames. Porcelain bonded implant bridge work to precious and non-precious frameworks (both screw and cement retained). RD Laboratory also offers a full range of NHS and private prosthetic options including NHS standard acrylic and chrome work; private hi-impact acrylic and chrome work; and flexible partial dentures and tooth coloured clasps.

The laboratory also caters for all aspects of orthodontic work from removable appliances and vacuum retainers/splints, to anti-snoring devices and whitening trays. RD Laboratory provides a free, daily delivery and collection service to Fife, Lothian, Borders, Central and parts of Strathclyde. Elsewhere it provides a free first-class postal service.

MORE INFORMATION
For more information, call 01383 733 613/673 or visit www.rdlaboratory.co.uk

TRANSLUCENT SEQUENTIAL TOOTH POSITIONERS

SMILETRU APPLIANCE OFFERS UNIQUE ABILITY TO DIFFERENTIATE BETWEEN DENTAL AND SKELETAL MALOCCLUSIONS, AND TO ALTER TREATMENT ACCORDINGLY

The first tooth positioner was originally developed to be used as a finishing technique following conventional fixed appliance therapy. The teeth were cut from the models and reset by hand much like a conventional denture set-up. A mould was then made around the reset case and injected with various types of elastic materials. All of the teeth were moved at one time into their new relationship. This technique greatly limited the amount of tooth movement that could be obtained from the positioner and could be very painful for the patient.

The next advance occurred with the use of vacuum-formed clear tooth positioners. The teeth were still hand set into a new relationship, but were aligned in a series of sequential tooth positioners. This technique required new impressions to be made every six weeks or so due to the inaccuracy of setting the teeth by hand.

The new technology of 3D scanning, imaging and printing has taken the use of sequential tooth positioners to another level. More complex cases can now be addressed in terms of their total correction and the need for additional in treatment impressions has been significantly reduced.

We are all aware that the gold standard for moving teeth efficiently is with metal brackets and wire, so why would people opt for clear positioners instead? Here are just some of the reasons a patient, especially an adult patient, would consider clear positioner treatment as a viable alternative to traditional brackets and wire:

1. Comfortable for the patient to wear
2. Virtually invisible, no one will know you are having treatment
3. No dietary restrictions during treatment
4. Removable for eating, drinking and oral hygiene
5. Minimal impact on the patients daily life.

Many different systems employ digital treatment planning and additive manufacturing technology, but the SmileTRU appliance is unique in its ability to differentiate between dental and skeletal malocclusions, and to alter the treatment accordingly.

For example, midline discrepancies

IT ACTS AS A WARNING BELL TO TELL THEM THAT THINGS HAVE MOVED AND TO INCREASE THE TIME THE RETAINER IS WORN

can be dental or skeletal. The maxillary mandibular over-jet can be a dental protrusion of the upper teeth, or a skeletal retrusion of the mandible. Dental crowding is frequently the result of underdeveloped arches. The SmileTRU system allows the doctor and the patient to choose the treatment best suited for their individual situation.

There are four different levels of SmileTRU therapy.

LEVEL ONE

This level treats only the six anterior teeth upper and/or lower. Space to align the teeth is acquired by correcting torque and angulations as well as by inter-proximal reduction (IPR). This level does not change the patient's posterior occlusion.

LEVEL TWO

This level involves resetting teeth from the second bicuspids forward. The advantage of treating at this level is any required IPR can be distributed over 10 teeth in each arch as opposed to only six teeth. This level still does not change the patient's original posterior occlusion.

LEVEL THREE

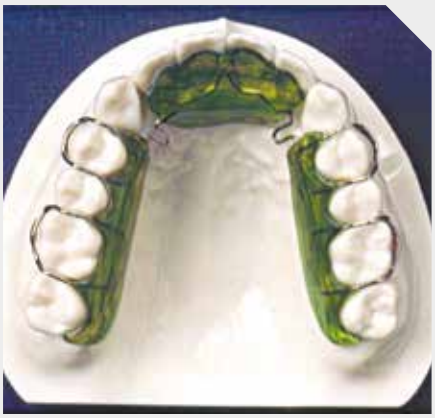
- Levels one and two are generally there to address the increased demand in cosmetic or short-term orthodontics. Level 3, although a more complex treatment, is still within the realms of most GDPs.
- Accreditation for levels 1, 2 and 3 is FREE and achieved via a 25-minute video which can be viewed for free in the comfort of your own home or surgery at a time that best suits you. Once viewed, to become accredited is a simple phone call.

LEVEL FOUR

This level introduces other appliances to be used to pre-treat cases before finishing in SmileTRU clear positioners for either functional jaw correction or arch development.

- To become accredited for level 4 requires the attendance at our SmileTRU Advanced one-day seminar with Dr Skip Truitt. Course details and dates are all available at www.tripleodentallabs.com
- The doctor should provide the SmileTRU laboratory with the following:

CONTINUED OVERLEAF>



The ALF (Advanced Lightwire Functional) (pictured left) or the RN-Sagittal appliance (above) can both be used to develop the arch where required. Both appliances are low profile and will have a minimal impact, if any, on speech and cannot be seen easily when worn

FROM PREVIOUS PAGE>

LEVELS ONE TO THREE

- Upper and lower models or impressions that include clear definition of the terminal tooth in each of the four quadrants
- Bite registration in the patient's functional centric relation
- Any relevant medical and dental history
- A completed SmileTRU laboratory docket.

LEVEL FOUR

(As above but with the additional records below)

- Lateral cephalometric X-ray. For a small additional fee, SmileTRU will trace the X-ray and evaluate the tracing as part of the initial diagnostic work-up
- Panoramic X-ray. Periapical X-rays should also be made of any endodontically treated teeth and of bridge abutments to determine if the tooth is ankylosed. Pre-existing bridges usually require sectioning
- Intra oral and extra oral photographs.

The doctor and the patient then have the option of choosing a treatment level, or requesting from SmileTRU the various levels of therapy that may be available for the case.

The upper and lower positioners are provided to the doctor in sets of six. For example, A-Upper 1 through 6, and A-Lower 1 through 6. The positioners are usually advanced every two weeks for the next number in the series. Therefore, each series represents three months of therapy. Level one cases frequently stay within the A-series while level two cases usually extend into the B-series. The more complex levels of therapy move into the C-series and D-series. The clinician should always keep the upper and lower positioners in corresponding sequence.

All of the positioners are returned on the fabrication model. This allows the doctor to make a new vacuum positioner in office should an appliance break or be lost. In addition, the patient can see their progress on the various models.

Some cases require composite attachments to be placed on certain teeth for additional retention or to help with rotation/angulation. When this occurs, an attachment matrix is included with the starting A-Series. The clinician selects the matching shade of composite for the matrix and acid etch bonds the appropriate attachments before fitting the first positioner.

Also included with the A-series is an IPR chart. Most IPR is performed at the start of the case. Some of the more complex cases will require additional in treatment IPR. When this occurs, another IPR chart will be included with the appropriate positioners.

Patients are instructed to remove the positioners when eating, when drinking anything other than water, and for hygiene. Maximum wearing of the positioners reduces treatment time and the need for an in treatment adjustment.

Cases that require pre-treatment must be stabilised prior to starting the SmileTRU portion of the therapy. This is accomplished by placing vacuum retainers following the pre-treatment. These retainers are worn for a minimum of two weeks before the impressions are taken for the SmileTRU appliance.

Retention is accomplished by the patient simply using the final positioners in the series as retainers. You now also receive a free removable retainer on request at the end of treatment for all levels of SmileTRU. They will be used to a tight feeling when the positioner is active and, should they feel this when they put their retainer in, it acts as a warning bell to tell them that things have moved and to increase the time the retainer is worn.

The patient would ideally wear the retainer full time for a month following treatment and then go down to night time wear only. Alternatively, a bonded retainer may be suitable for the patient and the laboratory can supply a custom-made bonded retainer for your patient on a placement jig for your ease of fitting.

If you are treating at level three or four and the treatment changes the patient's occlusion the case may require advanced functional retainers. These retainers are fabricated from new final impressions and result in an additional laboratory fee.

The patient wears the advanced functional retainers full time for the first 90 days following active treatment removing them only for eating and hygiene. The attachments remain on the teeth during this first 90-day period. The attachments are then removed and the patient continues full time wearing of the retainers for an additional 90 days.

Following the first six months of full-time retention the patient wears the retainers at night only. Most patients can slowly sequence out of the night time wearing to once or twice a week. Indefinite partial night-time retention is usually required to maintain the perfect final relationship.

SmileTRU

MORE INFORMATION

Additional information can be found at www.SmileTRU.com or by calling John Marchant on +44 (0) 121 7020 450. SmileTRU is only available through accredited dentists or orthodontists. Once a doctor is SmileTRU certified, his or her name is placed on the international referral system.

SmileTRU Clear Aligners

SmileTRU offers the following benefits

- Comfortable for the patient
- Invisible
- Safe
- Removable for eating and drinking
- No dietary resistrictions
- Minimal impact on daily life
- Digital prediction of the end result
- Various levels of implementation
- Single or double arch treatment
- Allow GDP's to treat a wider range of cases with clear positioners

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PLANMECA SMILE DESIGN

Planmeca Romexis Smile Design is a powerful and intuitive software program that allows dentists to design new smiles using a simple, 2D facial-smile photo and intelligent teeth silhouettes. It revolutionises dentists' communication with other specialists, dental labs and patients – resulting in a higher rate of case acceptance, as well as an improved realisation of created designs.

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To learn the benefits Smile Design can bring to your practice and to start your free trial, visit www.planmeca.com/smiledesign/digital-smiledesign or contact our Planmeca team on 0800 5200 330 or email marketing@planmeca.com

#MYBELMONTCHAIR

As part of a social media campaign, Belmont are asking practices to take a picture of someone chilling in one of their chairs; it could be a patient, team member or even your postman! Upload the image with a comment on Belmont Dental UK's page on Facebook, Instagram or Twitter with the hashtag #MyBelmontChair, explaining why the person is relaxed and happy and you could win a £250 high street voucher.

A member of Belmont's marketing team will contact the winner and arrange a convenient time to visit the practice to film a short video interview. See who's on the 'Hall of Fame' by visiting www.mybelmontchair.co.uk

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MIKROZID – EFFECTIVE AGAINST TB

A leading expert in infection prevention has warned against complacency in the UK about the potential threat of tuberculosis (TB), saying: "Given the right conditions, TB could become a significant problem and cause of mortality."

Dr Evonne Curran was speaking at the Infection Prevention Society's annual conference. Although the current risk of TB transmission in the UK is low, Dr Curran highlighted that "the UK recruits healthcare workers from areas where there is a high incidence of TB and people are also moving from these countries to the UK".

Effective cleaning of surfaces between patients is essential to protect both staff and patients from the risk of cross-infection. Mikrozid and mikrozid universal are effective against bacteria including TB, as well as viruses such as norovirus.

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"It also provides a great finish for all conventional indications such as inlays, onlays, crowns and veneers for patients of all needs as it blends in well with natural teeth.

"As for bonding, the protocol provided by COLTENE is very effective and I would definitely recommend the use of ONE COAT 7 UNIVERSAL alongside BRILLIANT Crios."

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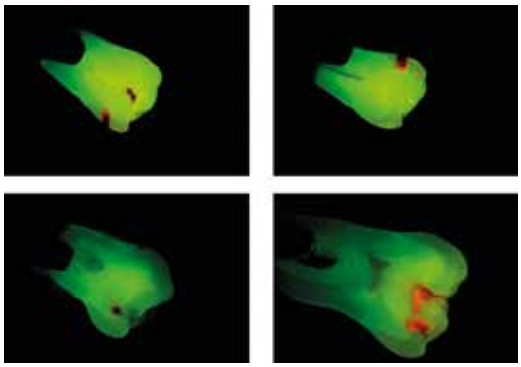

Fluoresce HD provides constant visual differentiation of remaining caries vs. healthy tissue

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