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Editorial

WITH BRUCE OXLEY, EDITOR →
Get in touch with Bruce at
bruce@sdmag.co.uk

BREXIT – WHAT NOW FOR DENTISTRY?

No matter which way you voted, we now have to face the fallout

As I write this, the new British Prime Minister Theresa May is hiring and firing for her new cabinet in the wake of David Cameron's resignation following the momentous Brexit decision.

It is far too early to tell whether the decision to leave the EU will turn out to be the right one – we may not know that for a decade or more – but what is for certain is that no profession, industry or walk of life in the UK will be unaffected, including dentistry.

The pound has already taken a battering and the uncertainty that still surrounds the country could well lead to another recession. If this is the case, then dentists might again find it hard to get finance for practice expansions or purchases and retiring dentists might put off their retirement date if property prices and valuations take a hit.

If you had hoped this kind of thing was in the past then you aren't alone. The dentists I have been speaking to, regardless of which way they voted, are united in their concern that the economy will be hardest hit. Practices that have been taking advantage of the economic upturn will no doubt be keeping a watchful eye on the markets.

Another area of concern is the large contingent of EU nationals in the Scottish dental workforce. From GDPs in high street practices to hospital consultants and from dental nurses to dental technicians, there are a great many nationalities represented in the Scottish dental community. There are significant question marks over what will happen to these professionals in the future, many of whom were recruited to fill gaps in provision in previous years and have now made Scotland their home.

I'm sure many dentists will rejoice if Brexit leads to a reduction in paperwork and bureaucracy, but if one EU directive is removed, surely it has to be replaced with something else... and who's to say that will be any less onerous for busy practices?

What, also, of the working time directive, the minimum wage , maternity and paternity rights etc? You could drive yourself mad with all the possibilities and many have already been taking to social media or signing online petitions to express their anger at the decision, or the reaction to the decision.

What's for sure is, until the terms of the secession from the EU are clear, we are in for a couple of years of uncertainty and in any business, that is bad news.

There are significant question marks over what will happen to these valued professionals in the future

Elsewhere in the news, we have the Scottish Government hailing the latest registration statistics as a great success, while the BDA were quick to point out that registration and attendance are two very different things.

It's been nearly seven years since lifetime registration was foisted on the profession and the Scottish Government is still trying to convince everyone it is a good idea.

Well, it does produce good stats at least. I'll give them that.

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(ON THE HISTORY OF DUNDEE)
Dr Gavin S McKay is the author of *Transforming Lives For 100 Years*, a history of Dundee Dental Hospital and School.

2

BOB PHILPOTT
(ON ENDODONTIC OUTCOME)
Dr Bob Philpott graduated from Cork Dental School and completed his specialist training at the Eastman Dental Institute in London.

3

LAURA FEE
(ON LOCAL ANAESTHETICS)
Laura Fee is a graduate of Trinity College Dublin and currently holds an honorary oral surgery contract in Belfast.

4

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(ON DENTAL STRESS)
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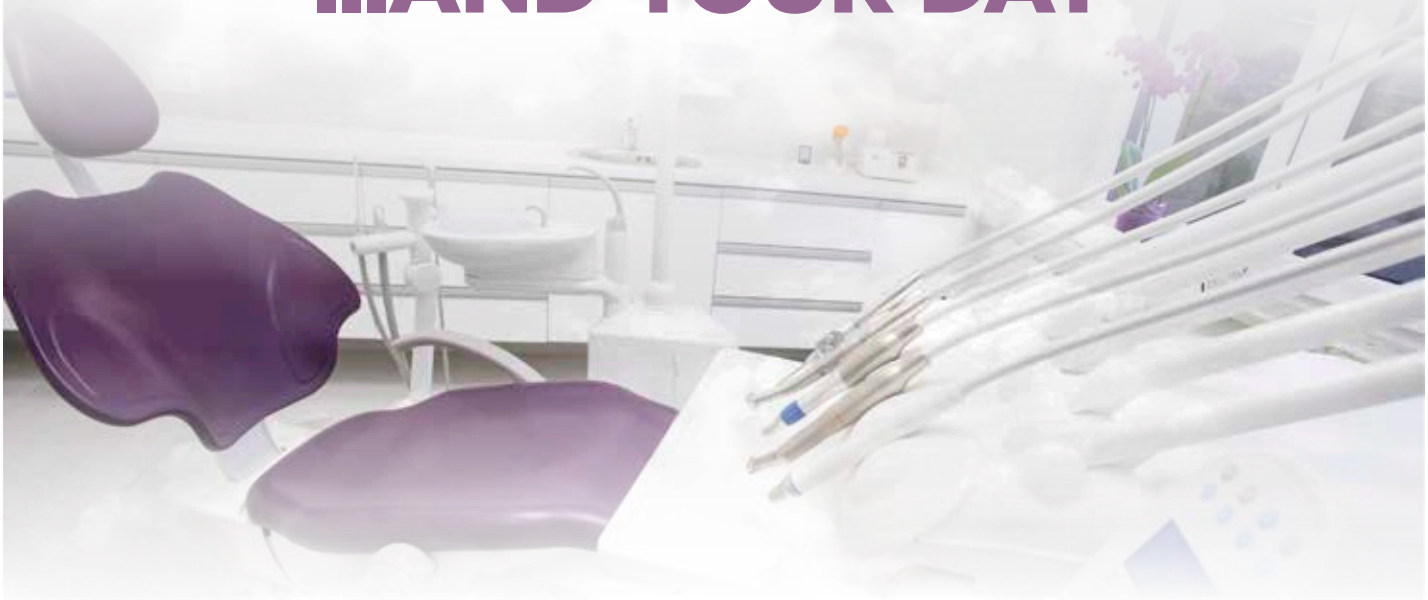

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HAVING HIS SAY →
Arthur Dent is a practising NHS dentist in Scotland
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DENTISTRY IN A DISUNITED KINGDOM

Arthur looks at the potential consequences for the profession following the recent Brexit vote

Churchill once said: "Democracy is the worst form of government, except for all those other forms..." and we are now faced with the UK's exit from Europe. However, the results reveal that it is now a Disunited Kingdom, with Scotland and Northern Ireland voting to remain by 62 per cent and 55.8 per cent respectively.

I am in the unusual situation of suspecting this column will be out of date by the time it is published – the First Minister of Scotland, former Health Minister Nicola Sturgeon, will demand another Scottish referendum. I do not think there will be much doubt over the outcome this time.

Regardless, nothing is going to happen very soon. The government must trigger Article 50 by officially notifying the EU of its intention to leave. Once triggered, there is a two-year period in which the terms of the leaver's exit are negotiated. At the time of writing, there is no timescale for this to happen, leading to a longer period of uncertainty, although EU leaders have stated they wish to see it happen quickly.

David Cameron has resigned, and George Osbourne has gone, and the future of Jeremy Corbyn is uncertain. The Conservative Party (as opposed to the Scottish Conservatives) may well split catastrophically due to the huge divide between the opposing sides within. It is very likely we will see a general election called before 2019, changing the political landscape further.

But where will this leave dentistry? Along with all other commentators, this is an impossible question for me to answer. All we have is speculation.

Kevin Lewis of Dental Protection has said previously that without EU migration, many corporates would have struggled to fill positions. Data from the GDC demonstrates notable increases that occurred in the five years prior to 2011. It indicates that the six member states that are providing the largest numbers of dentists in descending order are: Poland, Sweden, Spain, Greece, Ireland and Romania. Some key points to note are that Malta has 20 per cent of its dentists already registered with the GDC. There is a separate issue for Irish dentists, who have always been free to work in Britain under a common agreement.

ABOVE: the United Kingdom is in a state of limbo following the result of the Brexit referendum

As we have underemployment in Scotland, a decline in immigration may well work in our favour, and restore the balance between patients and dentists. However, if Scotland gains independence, it is likely to have a different system for immigration from the rest of the former UK.

The Minimata agreement (phasing out of mercury) will not be affected by leaving the EU. Many dental materials are made in Europe – composite in Germany and amalgam in Switzerland, for example.

Dental Directory (owned by mydentist, formerly IDH) withdrew a promotion, issuing the statement: "Given the massive impact of last night's decision on the EU referendum and the ensuing huge disruption to both the currency markets and financial markets, we have decided, with regret, to withdraw the extension of the Pink Thursday promotion. We do not in any way wish to contribute to panic buying and need to reflect over the next few hours and days how the decision affects us all."

It is also not clear whether EU directives will still need to be followed if we are no longer part of the EU. It was the EU, for example, that implemented 5.6 weeks holiday per annum.

Many agencies have quoted that, under the Health and Safety at Work Framework Directive (89/391/EEC), risk assessments have to be kept in writing regardless of the risk. On the other hand, many of these directives have been supported by the UK at EU level, so the UK Government could well decide to keep the same or similar requirements in place. None of this will happen quickly.

NHS/private services are likely to be unaffected in Scotland by any changes. However, the likely coming recession will affect what the general population has available to spend.

Any increase in interest rates will affect practice sales and purchases – and may make many think of selling to the corporates if the rates become unaffordable.

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FACULTY CALLS FOR TIGHTER CONTROLS ON SPORTS DRINKS

A survey of 160 schoolchildren in Wales has found that a high proportion of 12-14 year olds are regularly consuming high-sugar sports drinks.

The Cardiff University School of Dentistry research, recently published in the British Dental Journal, found that 89 per cent were consuming sports drinks and 68 per cent of them drinking them regularly (up to seven times a week). Half claimed to drink them socially with only 18 per cent saying they drank them because of the perceived performance-enhancing effects.

The survey also found that 90 per cent said that taste was a factor and 80 per cent purchased the drinks from local shops. As a result, the Faculty of Sport and Exercise Medicine (FSEM) is calling for tighter regulation around the price, availability and marketing of sports drinks to children, especially around schools.

Maria Morgan, senior lecturer in dental public health at Cardiff, said: "The purpose of sports drinks is being misunderstood and this study clearly shows evidence of children being attracted to these drinks, leading to an increased risk of dental cavities, enamel erosion and obesity. Dental and health professionals should be aware of [this] when giving health education or advice or designing health promotion initiatives."

NOW TRENDING

89%*

Nearly nine in 10 teenagers are consuming sports drinks with 68 per cent drinking them regularly

* Source: Cardiff University research

GOVERNMENT FIGURES MASK PARTICIPATION

The Scottish Government's announcement of 'record breaking' increases in dental registration rates masks a long-term decline in patient participation, according to the British Dental Association in Scotland.

Statistics published by ISD recently showed that 91 per cent of the population is registered with a dentist, up from 89 per cent in 2015 and 52 per cent up from 2007. However, the BDA points out that only 72 per cent of the 4.8 million people currently registered (as of March 2016) have seen an NHS dentist in the last two years.

The association argues that participation rates have been in steady decline since changes to registration rules in 2007. At this point, 99 per cent of the 2.5 million registered patients had contact with their dentist.

It also says that, while the figures show there is no difference in registration rates between children living in the most and least deprived areas, rates of participation continue to vary sharply between communities.

Robert Donald, chair of the BDA's Scottish Dental Practice Committee, said: "These record-breaking registration rates mask a long-term decline in participation among patients. The reality is while many people in deprived communities are getting on the books, they are not making it to the dentist's chair.

"We know Scotland has a lot to be proud of when it comes to fighting decay, particularly the big gains we've seen through ChildSmile. Now we need real effort from government to ensure adults are seeking the regular care that they need.

"Lifetime registration is good for generating positive statistics, but that means very little if the patients in most need are not seeking treatment. Boosting attendance among adults would do wonders for Scotland's oral health, particularly on oral cancer where early detection is key."

WARNING OVER DODGY DENTAL DRILLS

Scots dentists urged to be on the look-out for spread of potentially dangerous Chinese-made counterfeit devices

Scots dentists are being urged to be on their guard after more than 700 Chinese-made fake dental drills, which could shatter in a patient's mouth, have been seized in the last four years.

The Medicines and Healthcare Products Regulatory Agency (MHRA) led the first successful prosecution involving counterfeit drills earlier this year.

It said that the counterfeit drills – which mimic the original kit in appearance and labelling –were brought to the attention of the original manufacturer by a concerned customer.

The agency say that while there is no evidence that any of these dodgy Chinese drills have made it into Scottish practices as yet, it is warning practitioners to be on their guard when purchasing new equipment.

Lynda Scammell, senior policy adviser on enforcement at the MHRA, said: "It is vital that Scottish dentists and dental staff buy equipment from bona fide suppliers and are not tempted by offers of cheaper supplies. These drills may be unfit for purpose and potentially dangerous to both patients and staff who use them.

"These drills point to a wider problem – other counterfeited or non-compliant medical devices we have seen include syringes, contact lenses and even an X-ray machine.

"People involved in this type of illegal trading have no regard for patient health. It's your money they're after. Always source your medical products from a reputable source – make your patients health your priority."

ABERDEEN DENTIST'S WIFE KILLED

Practice manager dies and husband hurt in cliff fall

Chris Pumford and his wife Lesley recently won the Community Award at the 2016 Scottish Dental Awards

An Aberdeen-based practice manager has been killed and her dentist husband has been seriously injured after falling from cliffs on the coast at Kinneff near Inverbervie.

Lesley Pumford's body was found by the Coastguard after an alert was raised and a multi-agency search initiated on Friday 27 May. Her husband, dentist Chris Pumford, was also injured but has since been released from hospital.

The couple owned and ran Dental Inspirations on North Deeside Road in Cults and had only recently picked up the Community Award at the 2016 Scottish Dental Awards. A statement on the Dental Inspirations website read: "Dental Inspirations can confirm that Dr Chris Pumford and his wife Lesley were involved in an accident ... as a result of which, Lesley passed away. Chris has sustained serious, but not life-threatening injuries, and remains in hospital. At this time, we ... request that you respect the privacy of Chris and Lesley's family, friends and colleagues during this very difficult time."

Bruce Oxley, editor of *Scottish Dental* magazine and chair of the Scottish Dental Awards judging panel, said: "On behalf of the magazine and the Awards, I would like to pass on our deepest condolences to everyone at the practice and especially to Lesley and Chris's family."

Police Scotland have confirmed that there were "no apparent suspicious circumstances" surrounding Lesley's death and they are not investigating further.

NEW DENTAL DIRECTOR FOR NHS SHETLAND

Outgoing NHS Shetland dental director Ray Cross has been praised for providing a steadying influence during a period of "significant change" in the health board.

Ray, who spent the last two years of a long NHS career in Shetland, handed over the reins to former NHS Shetland senior dental officer Brian Chittick on his retirement.

Brian has an extensive background in leadership roles, and is an experienced clinician who has worked in many varied and challenging locations including during his Royal Navy career. Simon Bokor-Ingram, director of community health and social care at NHS Shetland, said:

"I very much appreciate the stable platform Ray has created during a period of significant change in the Shetland dental landscape, including the strong leadership of our Public Dental Service and the facilitation of a new independent dental practice to Shetland.

"Ray and Brian have been working through handover preparations in readiness for Brian taking on the dental director role. Brian will continue with some clinical sessions, but will devote the majority of his time to implementing the Oral Health Strategy that is being considered by the Integration Joint Board later this month. Brian will be based in the Montfield Dental Clinic."

Ray Cross (left) with Brian Chittick

SMILEAWI ON PAGE 24

> It puts everything into perspective and it really does make the problems we face here look a bit petty by comparison
>
> **NIGEL MILNE**

GREEK DENTIST EXTRADITED TO FACE FRAUD CHARGES

GDC urges employers to be vigilant in checking employees' entitlement to practice in the UK

A Greek dentist who became the first practitioner in Scotland to be prosecuted for the illegal practice of dentistry has been remanded in custody on fraud and assault charges in the north of England.

Ronnie Barogiannis was convicted at Aberdeen Sheriff Court in September 2013 and fined £500. He then moved to Hull and worked under the false name and GDC number of a former employee from Scotland. Between August 2013 and October 2014, Barogiannis was paid a total of £48,844 for his illegal work at the practice.

He was interviewed by police in relation to the fraud charges as well as eight counts of assault occasioning actual bodily harm, all of which he denied. However, Barogiannis subsequently fled the UK on 10 October 2014, failing to answer bail.

A European Arrest Warrant was issued on 26 January 2016 for offences of fraud by false representation and assault occasioning actual bodily harm resulting in his arrest in Sweden and extradition to the UK where he was remanded in custody to appear before Hull Crown Court. Speaking about the case, Francesca Keen, head of illegal practice at the General Dental Council, said: "This is a case that demonstrates just how severe the consequences of illegal dental practice can be for the victim.

"It is a stark reminder for patients to ensure they check our register of dental professionals before agreeing to treatment from any member of the dental team and for employers to be vigilant in relation to checking their employee's entitlement to practise.

"This hearing will hopefully reassure the public that the GDC is protecting the public by helping Hull Police to tackle fraud. It is illegal for any individual to carry out dental treatment without being on one of our registers for dentists or dental professionals as they lack both the skill and knowledge to practise safely.

"The case highlights the limits that people will go to, to commit fraud. We urge anyone who suspects there is illegal activity happening to contact us so we can investigate."

NOW TRENDING

1916*

FACT Dundee became the first university-based dental school in Scotland in 1916

* Source: University of Dundee

UNIVERSITY OF DUNDEE'S CAIRO COLLABORATION

A Dundee professor has delivered the first evidence-based dentistry workshop in Egypt as part of a collaboration between the University of Dundee and Cairo University.

Professor Jan Clarkson's visit was the first in a series of planned events aimed at helping to build capacity for dental research in Cairo. More than 20 of the university's dental faculty members attended Prof Clarkson's workshop, which gave an overview of evidence-based dentistry and systematic review.

Prof Clarkson said: "The enthusiasm, commitment and kindness of the team made my visit memorable, but most exciting was their energy for taking forward evidence-based dentistry."

Dr Amr Abou-El-Ezz, dean of the faculty of dentistry at Cairo University, said: "I appreciate the time and effort taken by colleagues at the University of Dundee, and look forward to a great series of training programmes."

Following the success of this visit, the Tayside Clinical Trials Unit will soon travel to Egypt to share information and guidance on clinical trial methodology.

The link between in Dundee and Cairo are ling-standing, with an MSc in orthodontics having been delivered in Egypt since 2013. Staff from the University of Dundee's School of Dentistry and the University of Cairo are also currently developing a research programme to improve outcomes in oral cancer for patients in Egypt.

CLINICAL SKILLS COMPETITION IS LAUNCHED

The Royal College of Surgeons in Edinburgh (RCSEd) has launched its annual clinical skills competition to discover the most talented and skilled undergraduate dentist in the UK.

The competition will culminate in the Grand Final in Edinburgh on 30 March 2017 at which the top 16 finalists from across the UK will compete to determine who will be crowned the overall winner at the competition's Grand Final Awards Dinner.

"One of the major aims of the Dental Faculty of the Royal College of Surgeons of Edinburgh is to set and quality assure the highest standards for the dental profession, and recognise that with the award of Membership and Fellowship.

"This competition is a shining example of ensuring that those standards are constantly being challenged and updated, with students benefitting from the networking opportunities it brings.

RCSEd is very keen to interact with the undergraduate dental schools in the UK and this competition provides an excellent way for dental students to become engaged with us.

"We are most grateful to Denstsply Sirona for their collaboration to make this competition possible."

ENDODONTICS ON PAGE 44

Patients presenting with symptoms of a crack in a vital tooth should always be investigated thoroughly

BOB PHILPOTT

WHISTLEBLOWING CONFERENCE

A symposium aimed at addressing some of the findings of the Francis Report in failings in care at Mid Staffordshire NHS Trust is to take place in Glasgow.

The 'Whistleblowing: Freedom to speak out' event, to be held at the Royal College of Physicians and Surgeons of Glasgow on 23 September, will feature speakers who have been involved in raising issues of concern including barrister Andrew Bousfield who co-wrote the *Private Eye* special report "Shoot the Messenger – How NHS Whistleblowers are silenced and sacked".

Professor Graham Ogden, dean elect of the Dental Faculty at the Royal College of Physicians and Surgeons of Glasgow, said: "There have been several high profile examples of whistleblowing in medicine but it is no less relevant to those of us working in dentistry. Even our own regulator, the GDC, has had to respond to its own internal whistleblower.

"These cases have shown that unless those responsible have the necessary knowledge and confidence to address areas of neglect or bad practice, serious harm or tragic consequences may occur."

For more information and to book, call 0141 241 6228, email michelle.gallagher@rcpsg.ac.uk or visit http://rcp.sg/events

BDA SOUNDS NOTE OF CAUTION

Association predicts uncertain times ahead for UK dentistry in the wake of historic decision to leave the European Union

The BDA has warned that there could be "significant changes" ahead for dentistry in the UK after the British people voted to leave the European Union.

Dentistry in the UK is affected by EU legislation in a number of areas, including the free movement of EU dentists and DCPs, trading of dental equipment and materials as well as health and safety legislation.

The BDA, as a member of the Council of European Dentists, has worked at EU and international level on issues such as the phase-down of dental amalgam.

Mick Armstrong, chair of the BDA, said that the association would assess and keep its members advised on the full implications of withdrawal.

He said: "We did not take a position in this referendum. Our prerogative is to ensure this profession is heard by any governments making decisions that impact on care, wherever they are based, and whatever happens at the ballot box. Today that role remains unchanged.

"At this early stage we do not know what shape Brexit will take, but it could certainly mean significant changes for both dental regulation and the dental workforce.

"We will aim to ensure withdrawal works for dentists. We will offer support, advice and protect the interests of our membership, and work with our international partners where UK dentists can benefit."

THE SCOTTISH DENTAL PROFESSION REACTS TO BREXIT

I'm very disappointed with the result. How much dentistry will be affected I'm not sure, but I'm hoping for Scotland to go independent and get back into the EU. We need that infrastructure and the support from the EU. Poor decision made.
Ayesha Ghaffar, clinical director, S&A Smile Clinic, Glasgow

We may see a decline in some of the excellent talent we have been fortunate to have attracted to Scotland. As many of our materials are manufactured in Europe I expect to see a rise in materials costs, with of course no improvement in dental funding.
Arabella Yelland, GDP, Largs Dental Care

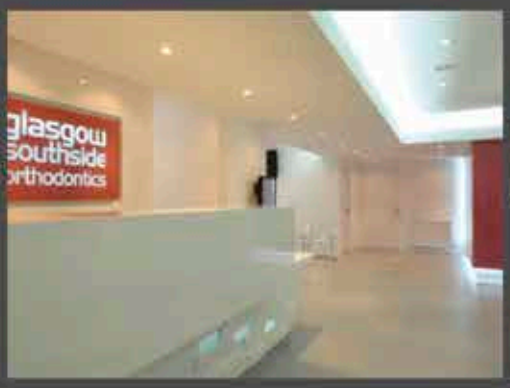
I don't feel that we will see any huge difference now we are starting the process of leaving the EU. It may take some time but I suspect that, for dentistry, the major change will be in recruitment from the EU. It's far too early to tell at this stage whether this will lead to a shortage of dentists in the UK as we do seem to have relied on a steady influx to bolster numbers.
Malcolm Hamilton, senior dental officer, Golspie Special Care Dental Unit

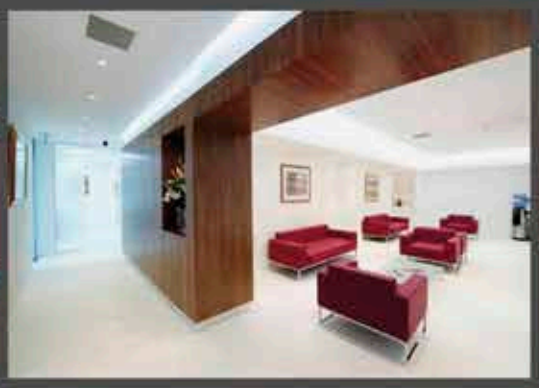
I don't think a lot will be felt in the first two years, as business will continue as usual. Once the terms are set, the change will then be felt. A lot of the paperwork may no longer need to be implemented, such as health and safety, which could be a positive if it cuts short bureaucracy. The import of dental equipment and materials will be affected as costs may increase. I think mainly the economy will be affected, and this will be felt in the numbers of patients coming for appointments, particularly in private practices.
Hugo Moreira, GDP, Southwest Smile Care Centre, Stranraer

Brexit may well lead to an economic downturn and patients will most likely defer treatments if income is tight, or they have concerns about family budgets.

Grampian is already suffering a serious economic downturn with the oil and gas recession, so I wouldn't be surprised to see further practice closures up here, particularly if we have several years of Brexit-effect inflation, recession, taxation changes, and unpredictable overheads.

Adding in a potential IndyRef2 simply increases the uncertainty which makes it difficult for businesses to thrive. Margins are always tight in dental practice, and we already have increasing cost pressures of auto-enrolment and the living wage. Not an easy time to be in business, never mind dental practice.
Ross McLelland, Waverley Dental Health Practice, Aberdeen





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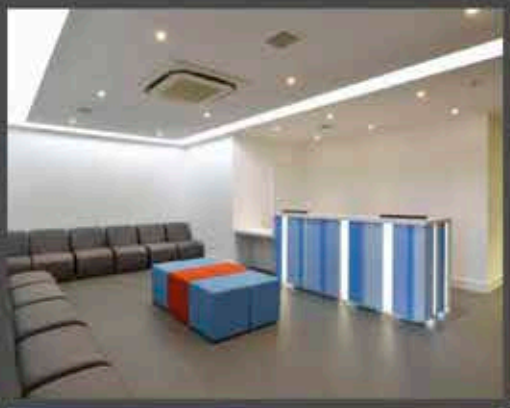

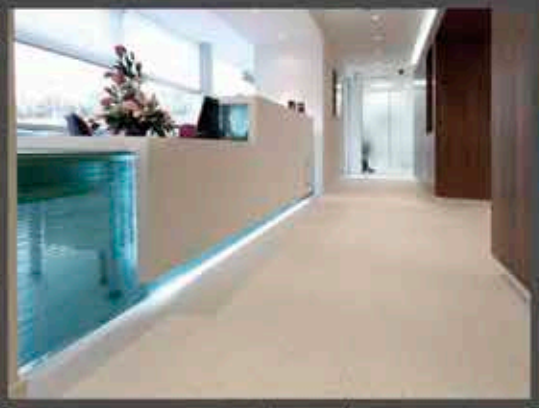

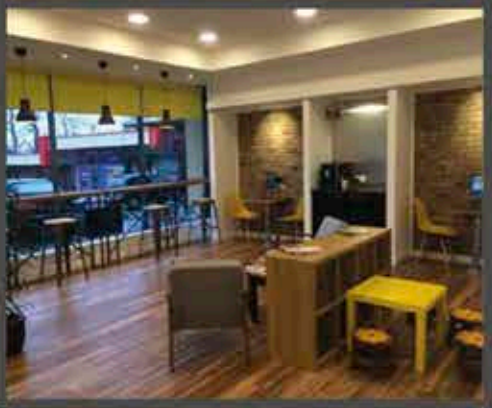

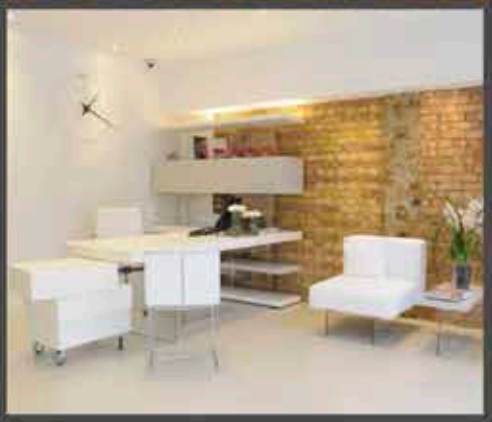

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SCOTTISH FACES ON NEW FGDP (UK) BOARD

Edinburgh dentist Yann Maidment and Dundee alumni Mark Richardson have both been newly elected to the board of the Faculty of General Dental Practice (UK).

Following changes to the board's structure, elections were held earlier this year and five new members took up office in June. Yann Maidment, principal dentist at Stafford Street Dental Care and current President of the Royal Odonto-Chirurgical Society of Scotland, now represents the East of Scotland. Mark Richardson, who is a senior dental officer in the RAF, was elected to represent Wessex and Oxford.

Pankaj Patel was elected to the new seat representing the Faculty's 300 overseas members, and Liverpool University Dental Hospital clinical tutor Johanna Bryant was elected to represent Mersey and North West. Trainee specialist periodontist Reena Wadia will represent Central London, while implantologist and academic clinical fellow at Plymouth, Ian Mills, was inaugurated as vice-dean of the Faculty. Abhi Pal, principal of a mixed practice in Edgbaston was elected as the second vice-dean.

Mick Horton, Dean of FGDP(UK), said: "It's a pleasure to welcome Johanna, Mark, Pankaj, Reena and Yann to the board, and with such a diverse range of working backgrounds, a privilege to be able to draw upon their knowledge and expertise. I'm also looking forward to working even more closely with Ian and Abhi, and am delighted that the board has recognised their contributions to the profession and the Faculty in this way."

CHECK CONSENT, URGES DEFENCE UNION

Dentists are being urged to tread carefully and make sure they get written consent in cases where there is uncertainty over who has parental responsibility to provide consent for a child.

MDDUS dental adviser Claire Renton said: "Dentists should not feel pressurised by social services, foster parents or family members into providing treatment without written evidence of consent. It is the right thing to do and protects both dentist and the child.

"Sometimes parents still retain the rights of the child, even although they are being cared for by someone else. Indeed, sometimes the foster parent or person attending with the child does not know whether or not they have parental responsibility.

"In cases of marital separation, extra caution is advised when the parent who no longer resides with the child becomes involved in decision-making. Problems can arise if the resident parent is not kept fully involved and it is recommended to seek advice before proceeding.

"Furthermore, the dental team should be aware of potential issues regarding parental consent and ensure the child's details are kept up to date."

LORD PROVOST OF DUNDEE LEADS CENTENARY CELEBRATIONS

The Lord Provost of Dundee hosted a civic reception recently to celebrate the culmination of the centenary celebrations for Dundee Dental Hospital and School.

Held at the Apex Hotel, the reception was followed by a Centenary Dinner attended by 135 guests including seven of the 10 alumni who presented in the recent Centenary Alumni Lecture Series.

The night before the dinner, Professor Callum Youngson, head of Liverpool Dental School, gave the final lecture in the series that began with Prof William Saunders in February 2015. All 10 speakers in the series are former alumni and current heads of dental schools or in senior positions with the UK postgraduate deaneries.

Professor Mark Hector, dean of Dundee Dental School, said: "It was a highly enjoyable and memorable evening which really encapsulated the great sense of camaraderie enjoyed by staff and students at the hospital and school.

"It was an honour to present Gavin McKay with a Centenary Quaich in appreciation of the work put into writing the history of the dental hospital and school and Peter Mossey, president of the Dundee and St Andrews Dental Alumnus Society, presented each of the seven centenary lecturers able to attend the dinner with a striking photograph of Dundee taken from the south bank of the Tay."

Turn to page 34 for the first in our two-part series on the history of Dundee Dental Hospital and School

Professor Mark Hector with Gavin McKay

CLEFT LIP AND PALATE RESEARCH CONFERENCE

Experts on cleft lip and palate research from across Europe and north America were brought together in Dundee recently for the EUROCleftNet Research Conference 2016.

Organised by the Dundee Dental School's Professor Peter Mossey and Bill Slater, the conference brought together the members of EUROCleftNet, a research networking programme for orofacial clefts research, prevention and treatment, funded by the European Science Foundation.

The two-day conference saw a series of talks, presentations and Q&A sessions from both early-stage researcher and world authorities on cleft palate care like Professor Mossey, who is also director of the World Health Organisation Collaborating Centre for Craniofacial Anomalies.

Bill Slater, EUROCleftNet programme coordinator at Dundee, said: "The EUROCleftNet Research Conference provided a great opportunity for productive discussion and the exchange of ideas in a stimulating and collaborative environment.

"We are extremely grateful for the support of the European Science Foundation, which has enabled our network to achieve so much over the last five years.

"I would also like to extend a special 'thank you' to Dundee & Angus Convention Bureau and Dundee City Council for helping to co-fund this event."

FANTASTIC FEEDBACK FOR 2016 SHOW

Just as the Scottish Dental Show gets bigger and bigger each year, the feedback keeps on getting better and better as well.

Delegate feedback from the 2016 show has found a massive 88 per cent rating the show as either 'Excellent' or 'Good' and an astounding 94 per cent said they are planning on coming back next year. In terms of organisation, 91 per cent of delegates said they found the event to be either 'Extremely organised' or 'Very organised' and 88 per cent said that they were either 'Extremely satisfied' or 'Satisfied' with the venue Braehead Arena.

The 2017 Scottish Dental Show will be returning to Braehead on 19 and 20 May and the exhibition for next year's show is already more than 60 per cent full, a fantastic endorsement by the dental industry in the UK. This is backed up by the results of our exhibitor feedback

questionnaire that found 77 per cent rating the show as 'Excellent' or 'Good', 92 per cent rating the organisation as 'Extremely Organised' or 'Very Organised' and 85 per cent saying they were either 'Extremely Satisfied' or 'Satisfied' with the show as a whole.

If you attended the 2016 show and haven't given your feedback yet, visit www.surveymonkey.co.uk/r/SDS16delegatefeedback

The 2017 Scottish Dental Show website will be launched in September along with advance details of the keynote speakers. Check out www.sdshow.co.uk for a list of all the exhibitors and follow us @ScottishDental on Twitter and Facebook.com/ScottishDental for all the latest news from the show, and the Scottish Dental scene.

NOW TRENDING

88%

Nearly 90 per cent of delegates to the 2016 Scottish Dental Show rated the event as 'Excellent' or 'Good'

*

Source: Connect Publications

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WE'VE GOT THIS COVERED

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Crowne Plaza, Glasgow
www.bda.org/scottishscientific

7-10 SEPTEMBER
FDI Annual World Dental Congress
Poznan
To find out more, visit www.fdiworldental.org

12 SEPTEMBER
CORE CPD Update 2016
Hilton Hotel, Glasgow
Visit www.proconferences.com for more information.

23 SEPTEMBER
Whistleblowing: Freedom to speak out
Royal College of Physicians and Surgeons of Glasgow
For more information, visit rcp.sg/events

6-8 OCTOBER
BDIA Dental Showcase
ExCeL, London
www.dentalshowcase.com

28-29 OCTOBER
RCSI ASM – Small beginnings, big outcomes
Royal College of Surgeons in Ireland, Dublin
For details, visit asm2016.com

3-5 NOVEMBER
World Congress on Controversies in Dentistry (CoDent) – Debates in implantology
Barcelona
For more information, visit www.congressmed.com/codent

11-12 NOVEMBER
Pandental Society Conference
ICC Birmingham
To find out more, visit www.pandental.co.uk

19 NOVEMBER
Irish Association of Oral Surgeons – Conference
Radisson Blu Hotel, Dublin
For details, visit www.dentist.ie

18-19 NOVEMBER
BSDHT Oral Health Conference and Exhibition
Waterfront Hall Conference Centre, Belfast
To find out more, visit www.bsdht.org.uk

20 JANUARY 2017
Scottish Orthodontic Symposium
Royal College of Physicians and Surgeons of Glasgow
For more information, visit rcp.sg/events

12-13 MAY 2017
Dentistry Show
NEC Birmingham
www.thedentistryshow.co.uk

19-20 MAY 2017
Scottish Dental Show
Braehead Arena, Glasgow
www.sdshow.co.uk

19 MAY 2017
Scottish Dental Awards
Hilton, Glasgow
www.sdawards.co.uk

25-27 MAY 2017
British Dental Conference and Exhibition
Manchester Central Convention Centre
www.bda.org/conference/Exhibition/2017-exhibition

Let us know about your events by emailing bruce@sdmag.co.uk

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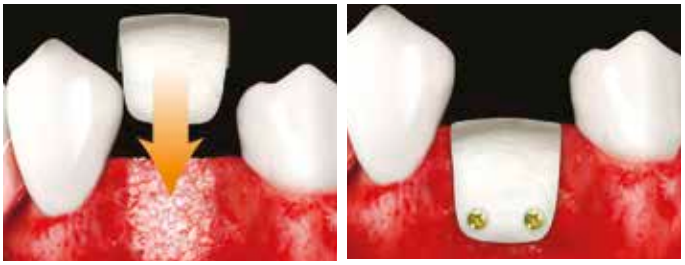

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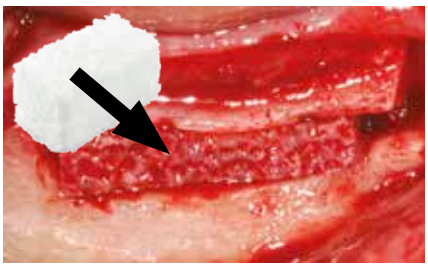

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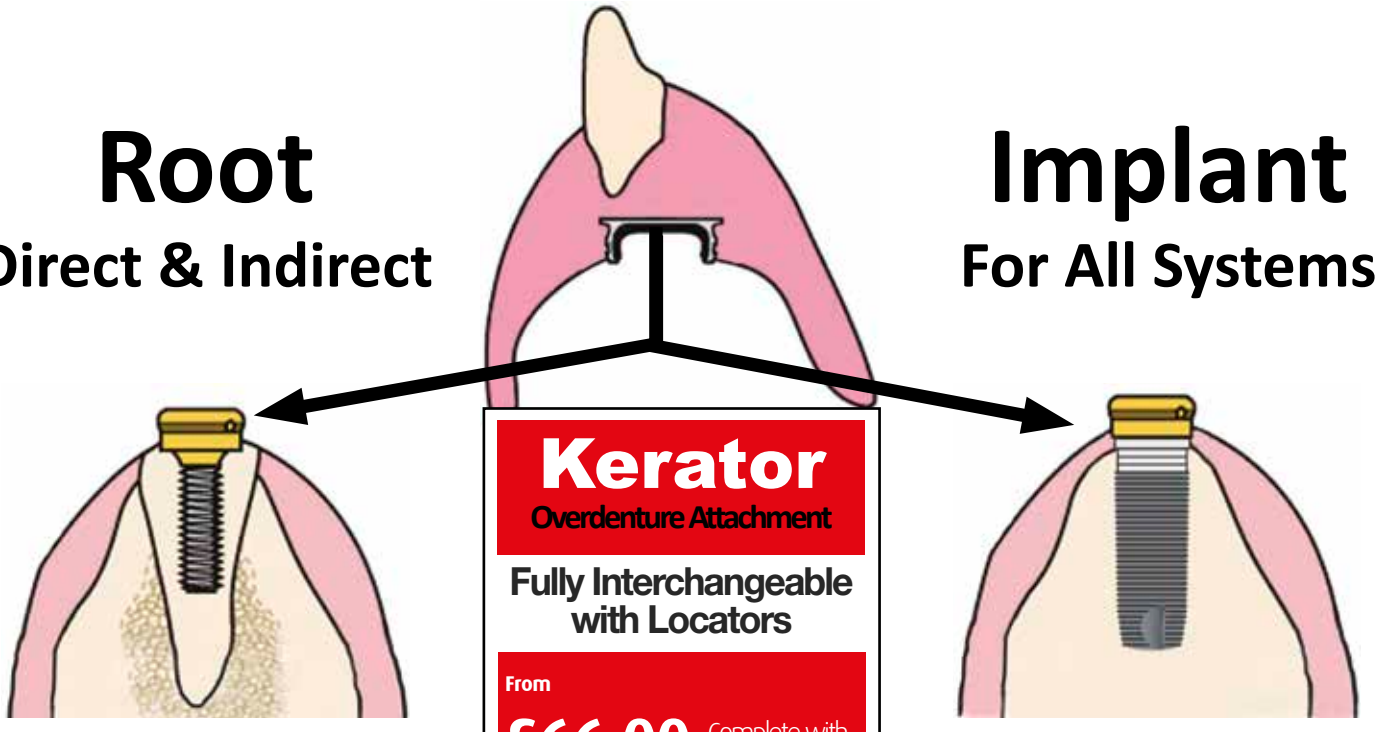

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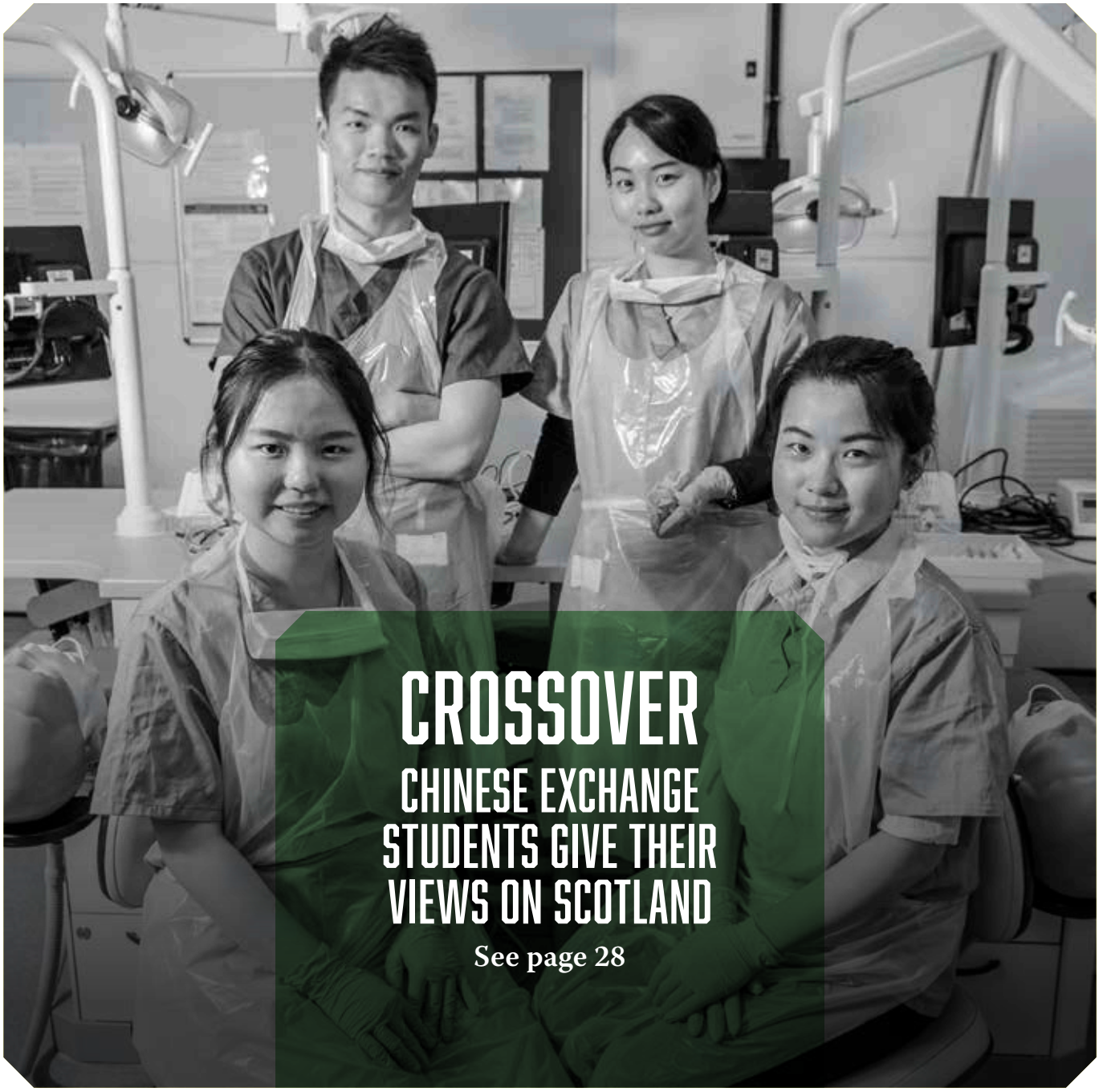

CROSSOVER

CHINESE EXCHANGE STUDENTS GIVE THEIR VIEWS ON SCOTLAND

See page 28

HEARTS AND SMILES

DUNOON DENTISTS ON PROVIDING DENTAL CARE IN AFRICA AND GOING IT ALONE AS A CHARITY IN THEIR OWN RIGHT

BRUCE OXLEY

When Nigel and Vicky Milne first visited Malawi in September 2012, two things struck the dentist couple from Dunoon almost immediately – the appalling level of poverty and the incredible warmth and friendliness of the Malawian people.

Nigel admits from then on, "there was really no turning back". The Milnes have visited the southeastern African country every year since and, what started out 'as a dental project within a larger charity, has, this summer, become a charity – Smileawi – in its own right.

Nigel and Vicky Milne met while studying at the University of Glasgow, Nigel graduating in 1986 and Vicky in 1988. They were married in 1986 and they both moved to Dunoon in the early 1990s to work at the Hollies Dental Practice. Nigel became a partner in 1991 and Vicky in 2005 when Nigel's business partner Robin Brechin died in a boating accident.

They had both long been interested in using their dental skills to do some charity work but, with a busy practice to run and four children to raise, time was in short supply. However, a year before their youngest son left for university, one of Nigel's patients, John Challis, mentioned that his own son had designed and built a dental surgery in Malawi and that Nigel and Vicky should go out and give him some advice on how best to run it. Unfortunately, as the Milne's son Ben was still in school, the time wasn't quite right – but the seed had certainly been sown.

THE FIRST TRIP

A year later, with the youngest packed off for his first year at the University of Glasgow, the Milnes contacted John, who is the principal trustee of the Raven Trust and their first visit to Africa was put into motion. Nigel said: "Our flights were booked with frightening speed and we were on our way, having let our son Ben have four days to settle into university life!"

The Raven Trust is a well-established charity providing help to the people of Malawi, one of the poorest nations in the world but nicknamed the Warm Heart of Africa. For its population of 11 million, life expectancy is just 39 for men and 44 for women. The Raven Trust arranges regular transports – the 100th container arrived in April this year – containing gifts, donations and vital equipment for communities throughout the country.

For their first visit, Nigel and Vicky spent four weeks in Africa and visited three mission hospitals, Ekwendeni, Livingstonia and Embangweni. Although very little dental work was carried out on that first trip, they managed to evaluate the equipment and workforce in the hospitals and start to plan where they could be of most help. A visit to the more rural areas, however, turned out to be the real eye-opener. Nigel said: "When we visited one of the rural outreach clinics, we realised that this was where the greatest need was. Unfortunately, sugar is a relatively cheap commodity in Malawi, while toothpaste and toothbrushes are not. As a result, we found patients who had been suffering pain for many years. Abscesses pointing out through the skin and chronic infection associated with grossly carious teeth were unfortunately all too common."

He continued: "Our experience on that first trip was life-changing. We were overwhelmed by the poverty and astonished to find that in the north of Malawi, a population of about 4.5 million

LEFT: Vicky and Nigel Milne giving an oral health talk at a Malawian school

people was being served by just 24 dental therapists, none of whom have good working equipment, who often run out of basic materials like local anaesthetic and sometimes don't get paid by the various organisations for whom they work. It certainly put our gripes about the NHS into perspective."

It was also a steep learning curve in terms of treatment as their initial dream of "taking Scottish dentistry and moving it out there" quickly became untenable. He said: "When we set out we thought we'd do a preventive programme and that we'd be restoring teeth. But the truth of the matter is, what we now do is pain clinics. We take people out of pain and they are very grateful for that.

"This approach is sustainable because, quite simply, once you take away the tooth it's not going to be sore anymore. A filling isn't sustainable. If you can't afford toothbrush and toothpaste to look after the restoration, it is very quickly going to decay again. You are just delaying the inevitable by restoring."

SUPPORTING LOCAL THERAPISTS

Their visit in September last year was the fourth time the Milnes have been out to Malawi and it was the first time they had taken out a larger team. Three dentists and two DCPs joined Nigel and Vicky for a two-week visit during which they carried out pain clinics at a number of sites and held the third Smileawi Dental Conference with the local dental therapists. Nigel explained: "The original conference was a huge success and was at the suggestion of John Challis. Since that time it has grown rapidly from five therapists attending from the north to 21. The conference gives the therapists a chance to talk to each other and to present the work they are carrying out. Many of them present on interesting or difficult cases.

"We were particularly touched by one presentation from a practitioner who was using some of the donated materials

> "THERE ARE AROUND 24 THERAPISTS IN THE NORTH ... THEY NEED THOUSANDS"
>
> NIGEL MILNE

to offer free dental treatment to children at an orphanage and for widows at a charity run by his church. This year, we gave a presentation on how we carry out decontamination and infection control in Scotland and looked at ways in which we can introduce this in Malawi where HIV rates are at 10-12.5 per cent of the general population."

The local therapists in the north of Malawi have also started their own dental meeting where they sit down and discuss the issues they are facing and talk about what they want to bring up at the main conference in September. Smileawi provides the venue and travel expenses for both meetings and Nigel believes giving these guys the benefit of their training and experience is very worthwhile. He said: "There are around 24 therapists in the north and, when you think about the population, they need thousands. I can't see us getting there, but if we could even get 10 times that number, what a difference that would make.

"They are very hardworking and the more of them there are, the more you

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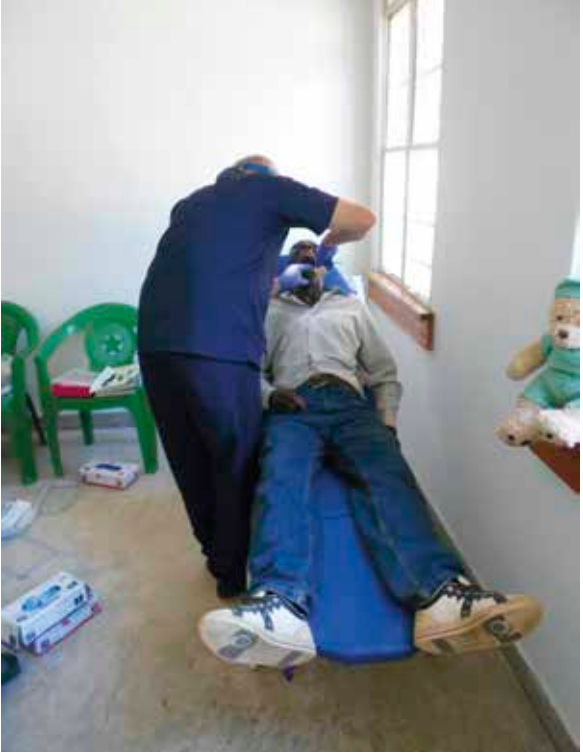

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can get out into the rural areas and make a difference. There is no way of getting transport from the rural areas if you don't have money. And if you live in a rural area, the likelihood is that you don't. You can't get to a city or a large town, you have to walk. And if it is more than a day's walk, where do you stay?"

FULFILLING POTENTIAL

While running pain clinics and supporting the existing therapists has been the mainstay of the charity thus far, the charity has started funding a young Malawian, Lusekero Kyumba, as he aims to train as a dental therapist. Lusekero was working as a translator in the hospital in Livingstonia and Lynn Dowds, one of the UK doctors, mentioned to Nigel and Vicky that he was interested in dentistry. Smileawi went on to pay for him to finish his secondary education and he has recently passed all his exams.

Nigel explained that, in return for funding his dental therapy education, Lusekero has agreed to return to northern Malawi, where he has family, and work for a minimum of five years in that area.

Nigel said: "As proud as we would be if he goes on to become a therapist, I think Lynn Dowds should take most of the credit. We will help him through the dental therapy part, but she has got him to this stage. She recognised very quickly that he was a very intelligent young man who had simply not had the chances to fulfil his potential. But she's developed him to this point and she has done a great job."

And in terms of the charity's potential, Nigel explained that they are currently working on a 10-year plan for the future of Smileawi now that they are a charity un their own right. He said: "We will still be working closely with the Raven Trust as they will still be arranging our accommodation and transport when we visit and they will continue to transport dental equipment and supplies out to Malawi along with the rest of the goods they take out on a regular basis.

"However, from the very start, John encouraged us to have our own identity and it was always the plan to separate when we were ready. It has all worked out really well and we have grown to a point where we are much more self-sufficient."

PERSPECTIVE

After their first visit, Nigel and Vicky wrote a report on what they had found and handed it to John Challis. He took it to a conference he was attending in Malawi and showed it to a politician in the health department. The politician said that he agreed with what they said about the problems as they saw them and their thoughts on possible solutions. But, Nigel said: "Apparently he looked at it and simply said 'But nothing will change'. He said that the government will not put money into dentistry. What money they do have will be used for malaria, for HIV, for TB and for maternity. Those four are deadly and kill so many people in Malawi. Toothache doesn't kill too many people."

This was a sobering thought but, rather than putting them off, Nigel said, it made them even more determined to make a difference in the field of dentistry. If the Malawian government is not in a position to prioritise oral health then it showed the importance for a charity like Smileawi to meet that need.

Nigel also argued that the numerous challenges faced by the small dental profession in Malawi provides a health dose of perspective when Nigel and Vicky return to these shores. He said: "I'm not saying I don't still get frustrated by things every now and then, but I am able to remind myself that I'm lucky enough to be born and be doing what I'm doing here.

"It puts everything into perspective and it really does make the problems we face here look a little bit petty by comparison. If you are worried about feeding your children tomorrow, that's a problem. If you are worried about a delay in payment to your schedule, it's not really a problem. Your bank manager might think it is, but it's not. And that's the truth of it."

MORE INFO
To find out more about Smileawi, visit www.smileawi.com

FAIR EXCHANGE

AN INSPIRING STUDENT PROGRAMME BETWEEN GLASGOW DENTAL SCHOOL AND ONE OF CHINA'S LEADING UNIVERSITIES IS DELIVERING BIG BENEFITS AND FRESH OPPORTUNITIES TO A HIGH-LEVEL EDUCATIONAL PARTNERSHIP

RICHARD GOSLAN SCOTT RICHMOND

When asked to sum up the outcome of the student exchange programme between Glasgow Dental School and the Sun Yat Sen University (SYSU) School of Stomatology, in Guangzhou, China, "Inspiring on both sides" is the verdict of Professor Jeremy Bagg.

The two institutions have recently completed the third year of a programme that sees six students from Glasgow spend four weeks in Guangzhou, with six Chinese students visiting Scotland.

Professor Bagg was instrumental in setting up the exchange programme, which is part of a high-level partnership between the University of Glasgow and SYSU, covering disciplines including medicine, engineering and information science and technology. SYSU is a national "key" university in China and is ranked among the country's leading institutions.

"The partnership we have now between the University of Glasgow with SYSU reaches right across the two establishments, and when I initially met a senior professor from SYSU's dental school we hit it off straight away," says Professor Bagg. "His subject areas were relevant to the research we're doing here and he was keen to do a student exchange. After I visited Guangzhou in December 2013 to meet everybody and do some lectures, it was fairly straightforward to establish the exchange programme."

> "THE STUDENT EXCHANGE WAS THE SPARK ... NOW IT'S GROWING INTO A MEANINGFUL, LONG-TERM COLLABORATION"
>
> PROFESSOR JEREMY BAGG, GLASGOW DENTAL SCHOOL

One of the main benefits, according to Professor Bagg, is that students based in Scotland have the opportunity to experience a different set of challenges in dentistry and see how China's society is managing those challenges.

"We also time it so that the students from SYSU come here a couple of weeks before our students go there, so the two groups have two weeks together here and then two weeks together in Guangzhou, so they also learn about student life from each other," he says. "That allows for interaction between the two groups and helps us develop something like two families of students in the two centres."

The student exchange has also already developed into a deeper relationship and further interaction between the two institutions, with collaboration ongoing between their research groups in dental pubic health and oral sciences.

"We're working with our colleagues at SYSU in areas around immunology and microbiology, with a particular interest in dental caries in children," says Prof Bagg. "With the success of the Childsmile programme in Scotland, we want to look at the situation in China in terms of diet, the difference between urban and rural areas, and even sociological aspects where for example so many children in China in the early stages of their life are being brought up by their grandparents, and whether that makes a difference in oral health.

"The advantage is that we're bringing together expertise from both centres and both parties can benefit hugely from that. The student exchange was the spark that

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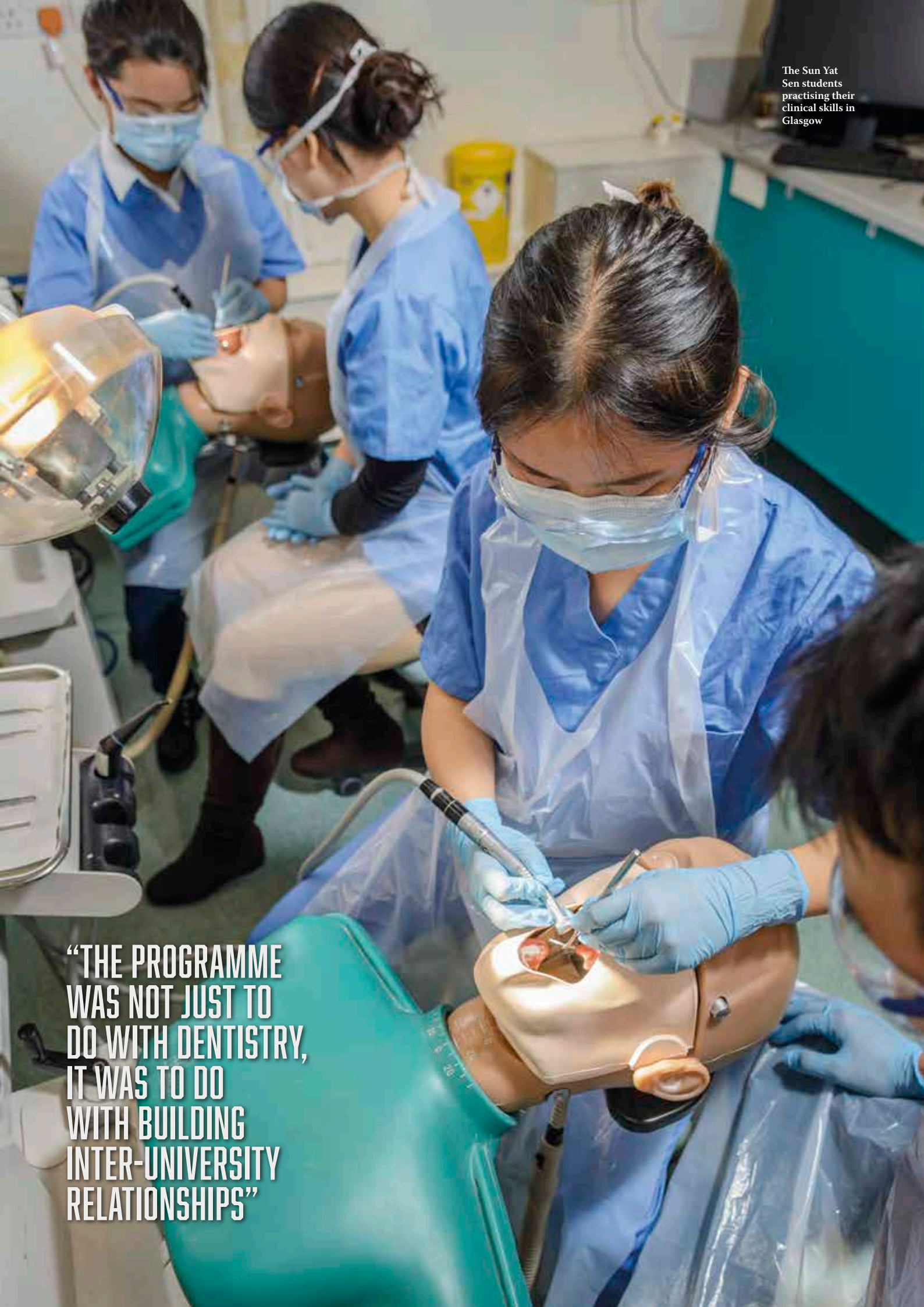
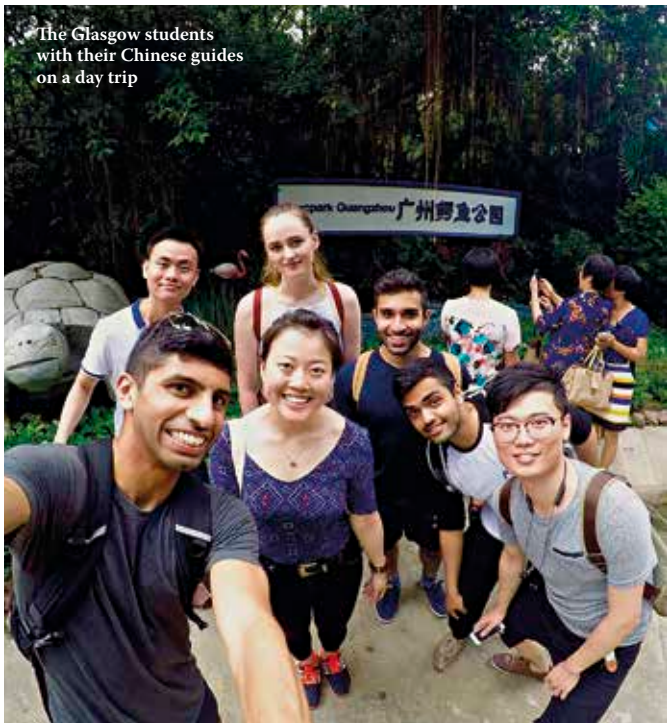


The Sun Yat Sen students practising their clinical skills in Glasgow

"THE PROGRAMME WAS NOT JUST TO DO WITH DENTISTRY, IT WAS TO DO WITH BUILDING INTER-UNIVERSITY RELATIONSHIPS"


The Glasgow students with their Chinese guides on a day trip


Students at Sun Yat Sen University posing with their Glaswegian guests


Both sets of exchange students in China

FROM PREVIOUS PAGE>

allowed us to start working together in a small way and to get to know each another, and now it's growing into a meaningful, long-term collaboration."

FROM GUANGZHOU TO GLASGOW

For Xiaorui Zhu, Zhenyu Xie, Xinyuan Lei, Xueqin Zhang, Wenxin Mu and Xiaoyi Huang, the chance to study at Glasgow Dental School has not only been an educational experience – it's been a stimulating cultural journey.

The cohort from China spent time in Glasgow seeing how dentistry is delivered in a different environment from their own, observing a variety of clinics, visiting the Royal College of Physicians and Surgeons in Glasgow, having discussions about current research projects and attending lectures on areas such as professional ethics.

The students were especially interested in the differences between the medical systems in the two countries, with no equivalent of the NHS in China.

"In terms of treatment procedures and equipment, what we've seen has been similar to what we have in Guangzhou," said Wenxin. "The biggest difference is in the system itself, because in China the patients always pay for their treatment."

Xueqin said: "We've seen here how dentists in Scotland have more time with their patients. In my experience in China, the dentists have so many patients and they are expected to carry out their treatment very quickly, so there isn't the same amount of time for the dentist to communicate with their patients."

Zhenyu expressed interest in initiatives such as the Childsmile programme and the potential to establish a similar scheme in China.

"It's been interesting to learn about the Childsmile programme, as well as caring programmes for older people," he said. "I don't know of any equivalent programmes in China, so I think we can learn from the experience of how they have been set up and operated here."

Xiaoyi said: "In public oral health, prevention is more important than treatment. If you can control the level of decay in children, then it gives you more control over the need for procedures in the future."

One area the students were agreed on was about their appreciation of Scotland's natural environment, and the open nature of the people they encountered throughout their exchange programme.

"This has been my first trip outside of Asia, and the biggest impression I've been left with has been how friendly everybody has been," said Zhenyu. "In China our cities are so big and everybody is hurrying and working, so it's difficult to have patience for people. Here, people say hello and leave the door open for you, it's very sweet – I've already developed these habits and will bring them back to China like a gentleman!"

FROM GLASGOW TO GUANGZHOU

While the six students from SYSU were in Scotland, a cohort from the Glasgow Dental School were immersing

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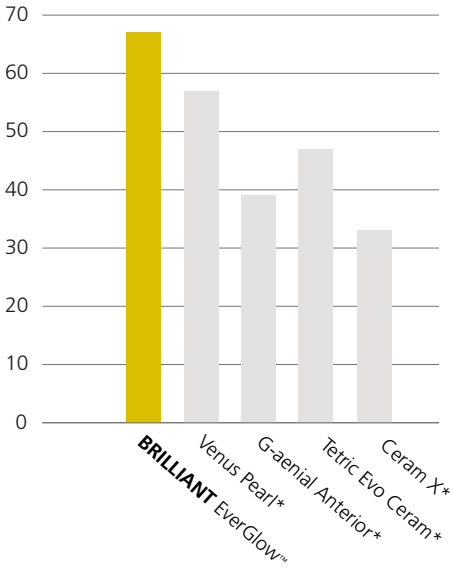
GLOSS RETENTION[1]

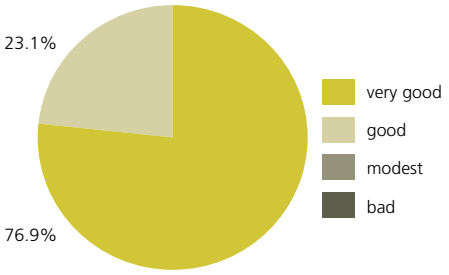
After exposure in the toothbrush simulator, measured in gloss units (GU).



Even after loading for 6,000 cycles in a toothbrush simulator, BRILLIANT EverGlow retains its initial gloss and performs very well.

1 Source: internal data | * not a trademark of COLTENE

EVALUATION OF POLISHABILITY



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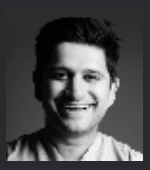

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themselves in the opportunity to study in an environment as different for them as the Scottish one was for their Chinese counterparts.

Their timetable was also spread over the course of four weeks at SYSU, with time spent in the four departments of paediatrics, prosthodontics, endodontics and oral surgery. For Ali Rizvi, the opportunity to visit the oral surgery department was a particular highlight.

"Observing the facial reconstruction surgeries was fascinating," he said. "It gave me a lot of respect for the surgeons who have to carry out the long procedures such as resecting tumours or orthognathic surgery, which would last from morning till the evening."

"My clinical rotation in the maxillofacial department was eye-opening," said Anupam Chandran. "I got to witness a variety of surgical procedures first hand and gained a whole new perspective as well as developing a new-found interest in the speciality.

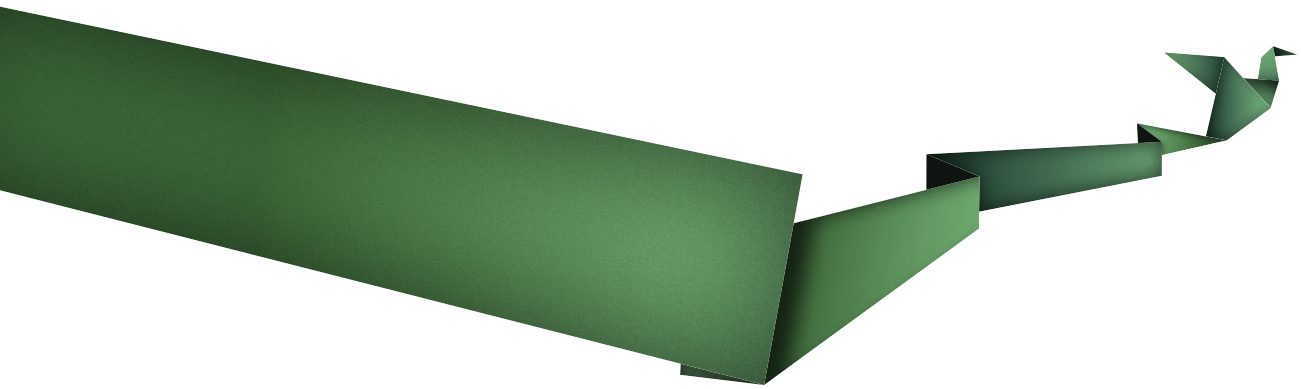
"My rotation in the paediatric dentistry department was another highlight of my visit. I was able to see the different challenges placed upon the paediatric dentists in China, as well as getting to interact with parents and children regarding dental treatment and advice.

"One of the things I enjoyed the most within the exchange programme was my trip to a local kindergarten to deliver an oral health presentation to the children. They were really excited to have us there and I thoroughly enjoyed the whole experience."

For Sagar Jadeja, the experience not only provided an insight into how to improve his dentistry, but into how to overcome language barriers and potential cultural differences.

"I would advise anyone who has the opportunity to go on such a trip to go into it with the idea of not just looking at the programme through the eyes of a dental student, but instead to be open to all that the experience offers."

Ali agreed. "The programme was not just do with dentistry, it was about building inter-university relationships. We made a lot of new friends on our journey and it was a great experience living in a country that I have never been to before. I would recommend anyone who is carrying out their dental elective for the summer next year to apply for the exchange programme, as it's a valuable experience and may help the Glasgow students decide which speciality they may want to choose in the future."



TRANSFORMING LIVES

GAVIN S MCKAY, AUTHOR OF *TRANSFORMING LIVES FOR 100 YEARS,* PRESENTS THE FIRST OF TWO SNAPSHOTS FROM THE BOOK PUBLISHED TO CELEBRATE THE CENTENARY OF DUNDEE DENTAL HOSPITAL AND SCHOOL

GAVIN S MCKAY

The centenaries of both Dundee Dental Hospital (1914-2014) and Dundee Dental School (1916-2016) have been celebrated recently with a civic reception, academically through a series of 10 public postgraduate lectures by Dundee Alumni and by the publication of a short history entitled *Transforming lives for 100 years*. This article provides a brief snapshot of the publication and covers the years from the founding of the hospital in 1914, through to the Second World War.

OVERVIEW

An outline of some of the achievement highlights in that history are listed as follows:

- The dental hospital provided public service dentistry facilities from 1914, by a not-for-profit private enterprise, which was more than just for emergency pain relief. The aim was to include tooth conservation and, in the longer term, dental health education through a programme of an annual inspection of children's teeth. The dental surgeons gave their service without payment. The overheads were covered by charity and subscriptions.
- From 1916, a dental school was established within Dundee Dental Hospital becoming the first in Scotland to be governed by a university as part of one of its colleges – in this case, the University of St Andrews.
- By 1918, the first Scottish dental qualifications, certificated by a university, not a college of surgeons, were awarded to successful Dundee LDS candidates by the University of St Andrews.
- In 1930, a dental postgrad diploma (the DPD) was first instituted. This diploma, unique to Dundee Dental School, was sponsored jointly by the BDA and the University of St Andrews.
- In 1936, the first university dental degree in Scotland – the BDS – was awarded by the University of St Andrews.
- A local School/Public Dental Health Scheme was in place some 20 years before the NHS was established. These included pre-school dental clinics as well as the school inspections, dental health education and orthodontic advice/treatment for poor children.
- In 1941, the first dental PhD degree by thesis and research from the University of St Andrews was awarded.
- Dundee Dental Hospital and School has always achieved beyond its small size. The 10 public postgraduate lectures given as part of the centenary celebrations were all delivered by our alumni who are presently either deans of other British dental schools or presidents of dental postgraduate institutes. What is even more satisfying is that these 10 do not exhaust our list!

PRIME MOVERS

Dundee Dental Hospital evolved from its precursor, the Dundee Dental Dispensary (1908/9-1914) which in turn was formed by the members of Dundee Dental Club. The prime movers were a small group of highly motivated people of considerable character. They were Walter Campbell (the dental patriarch 1827-1919) plus a native Dundonian, William McPherson Fisher (the public dentistry advocate 1853-1938). Two of Walter Campbell's sons, Graham and Gordon, both surgeon dentists, followed him into the profession and gave their time, energies and lives to serving the people of Dundee.

The Campbell dynasty was to mould the form of the Dundee Dental Club and

shape the subsequent development of the Dundee Dental Hospital until 1948. The third initiator was J Bell Milne, a young dentist and incomer to Dundee. He became involved because he had found the established dentists in Dundee to be somewhat remote and difficult to get an introduction to. His solution was to contact Walter Campbell and suggest that the creation of a social dental professional group would help young dentists feel more included. The result was the formation of Dundee Dental Club.

Milne, an Irishman who had obtained his LDS in Edinburgh, was not really a shy young dentist feeling left out of the social circle in Dundee. He seems to have been a bit of a party animal and an athlete (high jump) of note. His party trick was to wear a top hat which gave him a height of about six feet. Friends would hold a lightweight pole at hat height and Milne would remove the hat, then jump over the bar – or so the story goes. There is an authentic record that he could jump over six feet using a modified scissors jump.

Walter Campbell was recognised as having been one of the most prominent and organisationally active dentists in Scotland. Campbell was one of only three Scots, in a group of about 27 senior UK dental surgeons, whose meetings formed the precursor of the BDA. He had attempted to set up a Dental Dispensary in Dundee in the 1858/59, many years before the 1909 successful one. That first attempt failed due to lack of sufficient professional interest, but a parallel attempt by Campbell, through friends and colleagues in Edinburgh, was a great success and gave rise to the Edinburgh Dental Hospital some 27 years before the Dundee Dental Hospital was established.

Walter Campbell was 82 years old when the dental hospital was finally established and it was his son, particularly his eldest Graham, who drove this process and became the first clinical lead in charge of the dispensary and then the hospital.

William McPherson Fisher (1853-1938) was the eldest son of John Fisher and Jane McPherson, born in Dundee on 18 January 1853. There were 13 other younger siblings, 10 of whom survived beyond infancy. His father was a hairdresser, although probably not a barber dentist, who went on to become a bookseller and stationer. The family hairdressing business was at 37 Perth Road and remained in the family for three generations, with each new proprietor being a John Fisher.

On leaving school, young William probably served a general dental apprenticeship at a hospital in Carlisle before going on to the Dental Hospital of London (which became the Royal Dental) for LDS training. In 1875, he was a member of the student society where his academic tendencies first began to show. His initial paper was given as a student; the subject was "Voice and Speech". In this he was developing the views of TH Huxley (Darwin's Bulldog).

He qualified LDS RCS in 1878 and was entered in the first Dentists Register. In 1878, Fisher returned to Dundee to set up his own dental practice. That same year he married Isabella Young. By 1884 they lived in West Newport, Fife, an upmarket area with an hourly ferry service to Dundee. The Fishers had four children, the eldest and youngest were boys. Although William Fisher had a huge impact on the development of a National School Dental Service, he could be irrationally argumentative and was somewhat introspective. The death of John, the eldest son in the Boer War, made him withdrawn and reclusive.

In 1885, Fisher published a paper, in the then equivalent of the British Dental Journal, entitled Compulsory Attention to the Teeth of Schoolchildren which was based on an extended clinical study. What the published paper did was to define the role of the school dentist, as it would become once the NHS appeared more than 60 years in the future. Where his drive and commitment to dentistry for children came from, and why he moved away from natural philosophy, is not clear. The outcome was that, in 1890, the BDA set up a seven-year long survey of the dental status of 12,000 schoolchildren in sites all over the country, including the Mars Training Ship in the Tay. The investigating committee of the BDA produced annual reports for the duration of the study. William Fisher was a member of the investigating committee for the first year of the study and personally surveyed more than three schools.

In that first year it became blatantly obvious that the dental health of British children was so horrendously bad that it would require a herculean effort to improve it. Fisher withdrew from the subsequent years of the study because he thought that the solution to the problem was to devote all available manpower to treating the children. He believed that the collection of data and its statistical analysis, rather than instituting urgent treatment for all the children, set the wrong priorities.

As a result, he had fierce arguments with those who appeared to derive academic satisfaction from data analysis but did not seem to be driven to want to help the children. He began to isolate himself from these debates. When his son John died in the Boer War (1899-1902), Fisher withdrew further from public and even from family life.

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The Rettie memorial window in the stairwell of 2 Park Place. Known as the 'Knight in Shining Armour', and subtitled 'Faithful unto Death'. Designed by Lt Ballantine.

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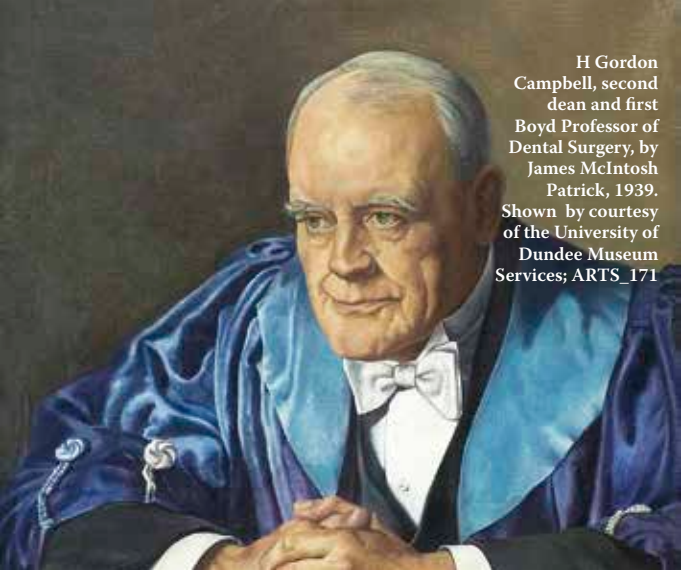
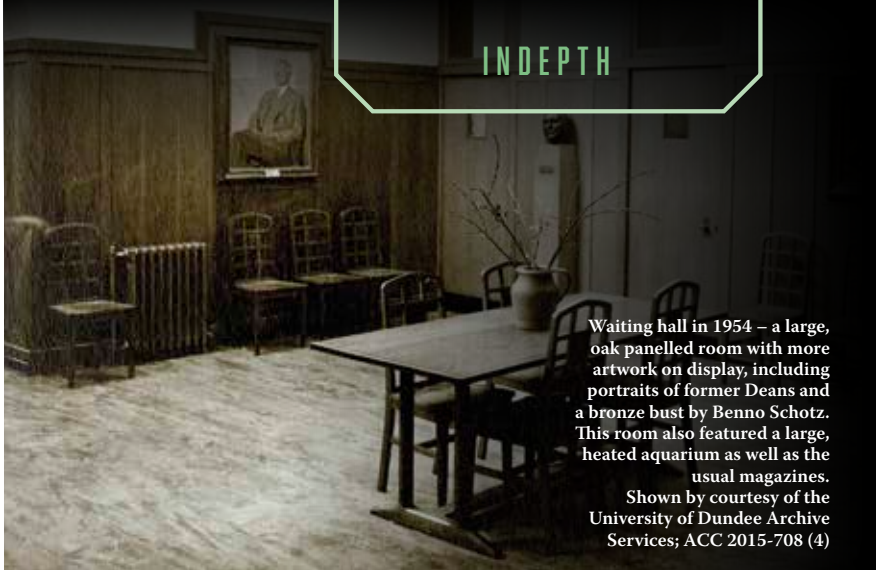


H Gordon Campbell, second dean and first Boyd Professor of Dental Surgery, by James McIntosh Patrick, 1939. Shown by courtesy of the University of Dundee Museum Services; ARTS_171



Waiting hall in 1954 – a large, oak panelled room with more artwork on display, including portraits of former Deans and a bronze bust by Benno Schotz. This room also featured a large, heated aquarium as well as the usual magazines. Shown by courtesy of the University of Dundee Archive Services; ACC 2015-708 (4)

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It seems that the formation of Dundee Dental Club, the Dental Dispensary and then the Dundee Dental Hospital, where altruistic dental practitioners provided treatment for the poor and needy without monetary gain, excited the interest WM Fisher. In fact, he became one of the prime movers of the Dental Club and subsequently, through the dental hospital, organised a local School Dental Service, based in Dundee, many years before any national scheme was implemented. Fisher was awarded a state pension in recognition of public service work.

In 1934, Graham Campbell (first dental hospital dean) was president of the BDA, whose annual meeting was also in Dundee that year. In his presidential address, at which a frail 81-year-old William Fisher was present, Dean Campbell spoke of his pride in the achievements of WM Fisher, noting that such a valuable contribution to the health of a nation would, in almost any other country, have merited at least a statue, located in a square bearing his name, in his home city.

THE HOSPITAL

The initial hospital was a four-room flat, open for one hour a day, five days a week. One room was a two-chair clinic for routine treatments, a second room was for extractions under general anaesthesia. The third room was the surgeons dressing-room and the fourth was the waiting room.

Although the new hospital was not busy from the outset, within the first six months some 486 patients had been seen in the 125 hours that the clinic had been open. Add to this the fact that the First World War had started and that all soldiers had to be made dentally fit before going to fight, then the clinic became very busy.

The 1915 patient throughput was 1,741 in a clinic that was open for one hour on 250 days per year. This highlights the common thread that runs through the whole history – there was never sufficient space to accommodate all the clinical needs. By 1916 the patient throughput was 2,781 and there was a desperate need for a larger hospital.

THE BUSINESS MEN

From the outset until the NHS was established (34 years), Dundee Dental Hospital was a self-sustaining charity that was always short of funds. Two particular businessmen among a larger group of supporters came in succession to lead the Board of Management of the Dental Hospital; through hard work and personal cash injections kept the enterprise solvent. The first of these was William Rettie, chairman of William Low and Co., who had been chairman of the board of the Dundee Dispensary from 1909 and of the hospital from 1914. He bought a large villa (1916/17) next to the existing, four-room hospital, converted it into a modern dental hospital and gifted the whole to the board of Dundee Dental Hospital in 1918. The new hospital was a memorial to his son, Lieutenant Philip Rettie, killed in the Battle of the Somme (1916).

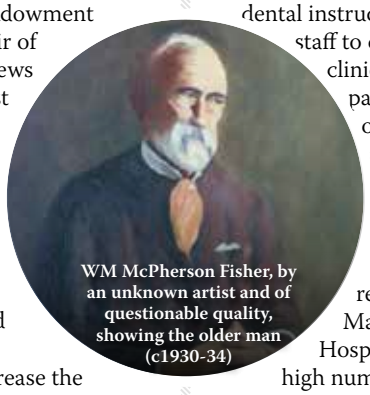
WM Rettie died in 1922 and was replaced by William Boyd, past chairman of Jas Keiller and Son Ltd who made many gifts to the hospital and school but the most significant was his endowment (1938/39) of the Boyd Chair of Dental Surgery, in St Andrews University, creating the first clinical dental professor in Scotland.

HOSPITAL GROWTH

By 1919, 2,464 patient visits were recorded. However, because of the heavy usage, it was deemed necessary to renovate the nearly new hospital, to increase the number of dental chairs and create more clinical space. All these growing numbers of treatments increased the running costs so that, by 1920, the hospital accounts were in deficit. Although the dental surgeons worked without payment, the dental materials used were expensive and ancillary staff had to be paid.

Just to compound the problems of the hospital, the UK Government (now 1919 and post war) had introduced a scheme whereby it guaranteed financial assistance to any ex-serviceman who wanted to enter a profession, including dentistry. Being a government directive, the dental school was powerless to refuse them. In 1920, there were 32 ex-servicemen who enrolled, all with government help. Prior to this intake bombshell, the school had also offered places to 14 civilian students, four of whom were female. In order to cope with these 46 new students in first year of the LDS and a proposed extension of the course to four years, the school was again upgraded. There were now 17 operating chairs. Opening times were more than doubled, from five to 11 hours per week.

By 1921 there were some huge clinical problems. The mammoth 1920 intake were starting the clinical part of the course and, although there had been a significant drop-out at the end of first year, there were still more clinical students than could be easily accommodated. The 1921 Dental Act required that: "Only appropriately trained senior clinical students could operate on a patient and then only when under the direct supervision of a qualified dental instructor." There were too few staff to directly supervise all the clinical students and also treat patients. With the extended opening hours, patient attendances increased to 5,641, the cost of materials used also grew, as did the deficit.



WM McPherson Fisher, by an unknown artist and of questionable quality, showing the older man (c1930-34)

The 1921 annual report of the Board of Management of the Dental Hospital states that the above high number of treatments was only possible due to competent senior students being able to provide the necessary treatments (implied – without proper supervision). Such was the shortage of space that, despite the ongoing renovations, staff and clinical students were competing for the available 17 chairs.

Once the Dental Act (1921) was fully embedded, the dental hospital and school had to restrict its student intake to that

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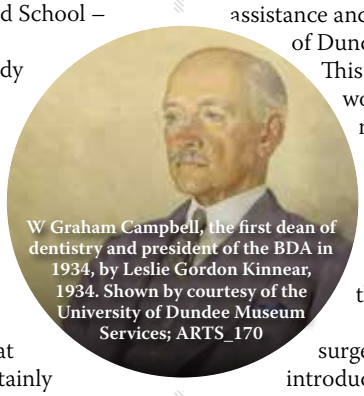
small number that could be properly supervised in the clinics. Since student fees were a significant part of the income of the institution, the money problems did not improve.

The hospital continued to provide a major service to the community and to transform lives. The public appreciated the value of the dental hospital and patient attendances continued to grow – so did the deficit.

The period 1926/7 was a pivotal time because the deficit had reached 30 per cent of the income. This figure was regarded as requiring fairly urgent attention. The same problem existed in 1925 but that year the student 'flag day' raised £500 – enough to buy a small house then – which kept the hospital solvent. In 1927, chairman of the board William Boyd made a national public service broadcast, using the BBC, to solicit financial support for his good cause; the Dundee Dental Hospital and School – but with no response.



W Graham Campbell, the first dean of dentistry and president of the BDA in 1934, by Leslie Gordon Kinnear, 1934. Shown by courtesy of the University of Dundee Museum Services; ARTS_170

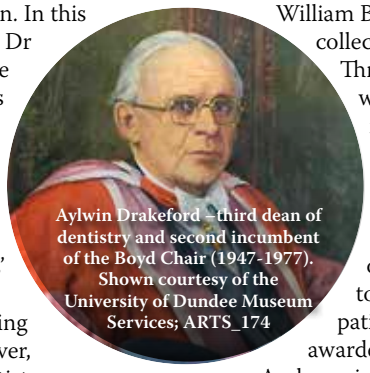
William Boyd was already treating the dental hospital as his special responsibility and personally paid for some items needed by the hospital. A number of sources have suggested that after this crisis point he instructed that requests for certain payments be directed to him personally at his private address. It is certainly true that William Boyd attended the hospital almost every day, like a clerk of works, and did his best to prevent problems from arising.

In 1929, the University of St Andrews assumed responsibility for all the staff, including the clinicians, of the Dundee Dental School. This was in preparation for the next major academic announcement.

This was that a diploma in public dentistry would be established in 1930, at the request of the BDA, closely following the course content defined by them. This was the first postgraduate dental diploma in the UK, only possible thanks to another hospital expansion. This time a room was created in the back garden of the hospital.

By 1934, further major hospital expansion was being opened. The earlier expansions had only just reduced the problem. This time, the solution was for a second phase garden extension and some serious remodelling within the house. A conservation room with eight chairs was inserted on the first floor and the caretakers flat within the basement was modified to accommodate student training.

This was to be a pivotal year as it was a time of financial depression. In this year, the dean of dentistry, Dr Graham Campbell, was the president of the BDA, thus very much in the national eye and that probably did help generate more grant aid. However, funds were so limited that Mrs Campbell formed a Ladies' Committee that set about generating funds and seeking sponsored support. However, prior to being dean of dentistry, Graham Campbell had had a patient called Lady Elizabeth Bowes-Lyon, now the Duchess of York. He knew her sufficiently well to be able to invite her to open the extended dental hospital.



Aylwin Drakeford – third dean of dentistry and second incumbent of the Boyd Chair (1947-1977). Shown courtesy of the University of Dundee Museum Services; ARTS_174

Not only did she agree to perform the formal opening ceremony but was sufficiently interested to offer more assistance and became the Royal Patron of Dundee Dental Hospital. This is an association which would have attracted many more financial sponsors. The same lady, 34 years later and now the Queen Mother, opened the new Dental Tower in her capacity as Chancellor of the University of Dundee.

The batchelor of dental surgery degree (BDS) was introduced in the session 1936/7. It was an academic year of full time study and practical experience entered into after successfully completing the LDS hurdle. The extension and alterations noted above were in part to allow for this extra year of students. A Master of Dental Surgery degree was also introduced and defined as requiring a BDS qualification to which was added an advanced clinical element, and a thesis.

THE BOYD CHAIR OF DENTAL SURGERY

Dr Graham Campbell, the first dean of the dental hospital, retired as dean in 1938 (but continued to teach until 1947) and was succeeded by his younger brother Gordon. By 1939, thanks to an endowment by William Boyd, the first chair in dental surgery in Scotland was created in the University of St Andrews; to be called the Boyd Chair.

Professor Gordon Campbell became the first incumbent. Boyd raised the monies to sponsor the chair by selling one of his three Van Gogh paintings.

FINE ART WORKS IN THE DENTAL HOSPITAL AND SCHOOL

William Boyd was a knowledgeable collector and sponsor of artists. Throughout his association with the hospital, Boyd made gifts of fine art to individuals, on the understanding that the paintings, sculpture and stained glass remained on display in the hospital to calm and educate the patients. In 1939, he was awarded an honorary LLD by St Andrews in recognition of his support for the Dental Hospital and School. He died in 1941.

William Rettie who donated the first dental hospital had a large stained glass memorial window fitted in the stairwell of the hospital.

THE SECOND HOLDER OF THE BOYD CHAIR

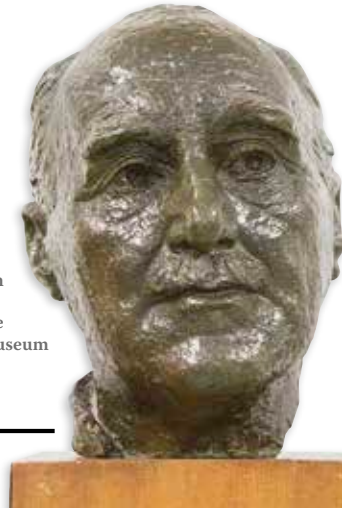
Professor Gordon Campbell retired in 1947, after the Second World War had ended and was succeeded as the Boyd Professor by Aylwin Drakeford Hitchin. Running the dental hospital and school through two world wars and the depression between the wars, took its toll on both the Campbell boys – Graham died in 1948 (84 years) and Gordon in 1950 (80 years) so neither enjoyed a significant retirement.

The NHS was established in 1948 and thereby saved the dental hospital from failing due to lack of space and insufficient funds.

The second part of this short serialisation will give an account of Dundee Dental Hospital and School during the Second World War and into the modern era and appear in the September/October issue of the magazine.

MORE INFO

If you are interested in buying a copy of *Transforming lives for 100 years*, published by Connect Publications, there are still a few copies available. To buy your copy, priced at just £10, visit bit.ly/DundeeCentenary



A bronze bust of William Boyd by Benno Schotz. Shown by courtesy of the University of Dundee Museum Services; ARTS_175

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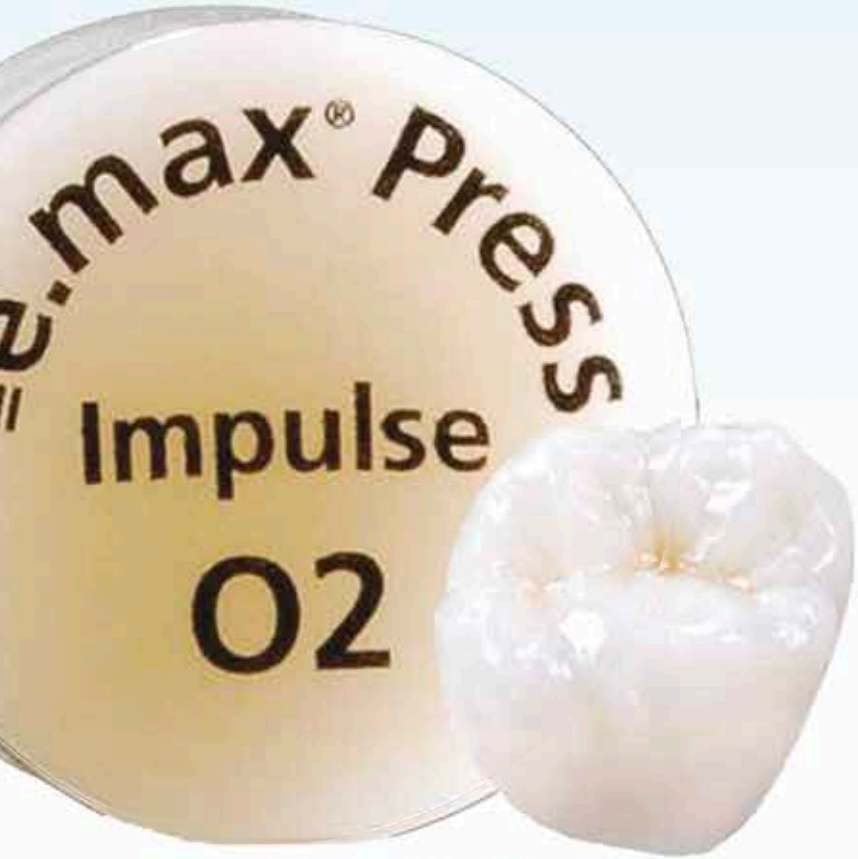

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ACTING ON IMPULSE

A GLASGOW LAB IS INVESTING IN FACILITIES AND INTRODUCING NEW PRODUCTS TO THE SCOTTISH DENTAL MARKET

When Paul McFall started Impulse Dental Laboratory in February 2013, it was just himself and two other technicians working out of a former computer repair workshop in Baillieston.

Within a year, Paul had moved the lab to new premises in Shettleston Road and it now employs nine technicians, including Paul, and 15 staff in all. However, Paul explained that this expansion is not the start of a wider plan to keep on growing. He insists that the lab has simply reached the optimum number of staff to operate efficiently and maintain the highest level of quality control.

He said: "To be honest we are not looking to grow too big as I want to maintain our excellent reputation for service and quality. If we grew too big, my main concern would be that it would affect the quality of our work. We have worked hard to get the reputation we have and over-stretching ourselves might jeopardise that."

He also explained that, at their current size, he is still able to provide a personalised service to his clients. He said: "If you phone up Impulse Dental Laboratory you will get me on the phone. I value the dentists' time and quite often they will call to speak to me about a restoration or an aspect of work and I am always available to do that. I have forged some really close relationships with dentists and dental practices and I think it is that personal touch that helps build and maintain those relationships."

Paul started work at DP Nova in the early 1990s, working his way up to manager of the gold department before leaving to join Lincoln Ceramics in 2008. It was there that Paul first started working under magnification, a development in his career that he describes as "a revelation". After two years in Lanarkshire he moved to HDL Dental Laboratory in Falkirk before deciding to set up on his own in the winter of 2013.

Last year, Paul launched the Impulse Aesthetic Crown, a metal-free, all ceramic crown which is available and affordable for both private and NHS patients. Following on from the success of this, the lab is now using Ivoclar Vivadent'sIPS e.max Press Impulse ingots for the fabrication of partial crowns, single crowns and bridges. The Value shades allow for seamless tooth matching, not to mention e.max press ceramic having an impressive flexural strength of 400MPa compared to CAD/CAM produced e.max with a flexural strength of 360 MPa. Impulse will continue to produce e.max by the pressed ceramic technique rather than CAD/CAM produced due to pressed ceramic being proven to be stronger.

As well as new products and innovations, the lab has also invested in a new state-of-the art Wieland milling machine allowing them to completely digitise all the workflow, with the ability to receive intra-oral scans from all the major manufacturers. Using the 3Shape scanner to lab scan models, the lab will produce full contour zirconia restorations, PMMA restorations, metal substructures and zirconia substructures with improved

accuracy and micron level fits internally and marginally on all restorations. Paul has also started accepting implant work and is able to work with all the major systems.

Paul also explained how he has invested in his staff by installing new Tavom work benches with built-in extractors and bench lights to provide a more ergonomic and comfortable working environment for his technicians.

As well as a daily pick-up and delivery service across central Scotland they provide an eight-day turnaround for private work and a five-day turnaround for NHS work. All their restorations are subject to multiple checks and inspections before dispatch and they guarantee all private work for five years.

In the face of competition from labs that outsource their work to the Far East, Impulse has introduced a guarantee card that is dispatched with all restorations, declaring that all work is carried out in-house by GDC-registered technicians.

MORE INFO
For more information, contact Impulse Dental Laboratory on 0141 237 6464 or email impulsedentallab@gmail.com

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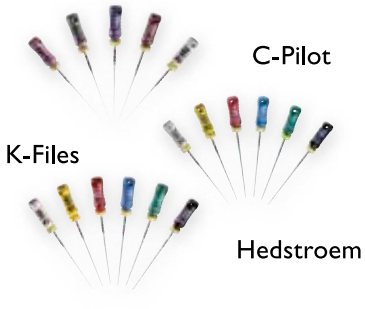

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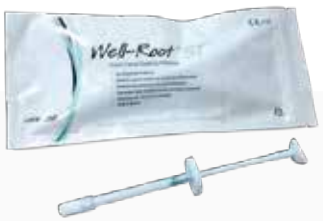

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Clinical

DO ENDODONTIC TREATMENTS ACTUALLY WORK?

ENDODONTICS

Dr Bob Philpott tackles some of the most pertinent questions he has been posed regarding the outcome of endodontics in practice

BOB PHILPOTT

Depending on what you read, there are various criteria proposed for assessment of endodontic outcome and these differ depending on whether a surgical or non-surgical approach has been used. The European Society of Endodontology proposes the following definition of non-surgical root canal treatment (NSRCT) outcome:

- Healed: Absence of clinical signs and symptoms and a return to normal architecture of the periodontal ligament radiographically.
- Healing: Absence of clinical signs and symptoms and reduction in size of the periapical lesion.
- Failure: Presence of clinical signs/symptoms and/or no reduction in lesion size, increase in lesion size or emergence of a new periapical lesion.

From the literature, it would seem that success rates of NSRCT are relatively high depending on the criteria used yet often teeth exhibiting reduced lesion size are hard to classify. Although Orstavik (1996) highlighted that teeth showing these radiographic signs of healing at 12 month review, continue to heal in almost 90 per cent of cases (Figs 1a and b). For those dubious cases it is important to arrange follow up for anything up to four years and not condemn a tooth to failure too early (Strindberg 1956).

Does survival count?

The stringent outcome criteria outlined above have been used to assess NSRCT for decades. More recently, however, survival rates have been mentioned in the endodontic literature (Salehrabi 2004).

This has partly been driven by the endodontic discipline in order to level the playing field between endodontics and implants. Much of the implant literature uses this less stringent definition of treatment outcome, with survival rates in excess of 90 per cent being reported. The reality is that it is very difficult to compare the two treatment modalities and unnecessary also as both have a place in daily practice life. Direct comparisons, although shining a favourable light on endodontics (Doyle 2006) are also confusing and probably best avoided.

More recently, the term functionality has appeared in the endodontic literature and this may be more relevant to practice. Friedman (2004) described this as a tooth presenting with an absence of clinical signs/symptoms but with evidence of pathosis radiographically. How often do we see patients who, when faced with the prospect of dismantling a tooth which has been in function for decades and exposing themselves to the risk of it being unrestorable, choose to continue to monitor the situation instead? This may pose problems later in terms of potential flare up and possible systemic impacts of oral infection although the evidence supporting the later in the endodontic literature is scarce.

Are cracked teeth doomed to failure?

Diagnosis of and prognostication in relation to cracked teeth is difficult. Where does the crack end? How likely is it to progress? Will it affect longevity? All of these questions spring to mind when we consider this clinical scenario.

Patients presenting with symptoms of a crack in a vital tooth should always be investigated thoroughly and this often involves removal of the direct restoration, visualisation of the crack under magnification and illumination and possibly a period of stabilisation with a stainless steel orthodontic band. In the cases of root filled teeth, again the tooth should be dismantled and the crack visualized in order to attempt to assess its severity (Figs 2a-c). Care should also be taken to identify and assess any soft tissue signs such as multiple draining sinuses or deep narrow isolated probing defects adjacent to heavily restored root filled teeth. Cracks can often be very difficult to diagnose radiographically unless there is frank separation of the tooth fragments although a characteristic J-shaped radiolucency may indicate a split tooth.

The American Association of Endodontists (AAE) have attempted to classify cracked teeth according to severity, ranging from an enamel infraction up to a split tooth and this is helpful in terms of reaching a diagnosis and labelling these teeth. It does not, however, offer much help in terms of deciding on whether to treat or extract these teeth. Traditionally, it was felt that the presence of a crack on the floor of the pulp chamber often precluded endodontic treatment, but more recent outcome studies have highlighted the importance of the presence of a deep probing defect associated with the tooth as a negative prognostic factor (Tan et al. 2006, Kang et al. 2016) while others have found that extension on to the pulpal floor

resulted in greater tooth loss (Sim et al. 2016). So, that just seemingly adds to the confusion.

Most importantly, the patient needs to be made aware of the presence of a crack and its potential effect on outcome. Ultimately, it is the patient who decides, although I would personally caution against attempting to save teeth with extensive cracks due to the detrimental effect this would have on the surrounding bone should the crack propagate and the subsequent effect on the bony site for implant placement.

Does rubber dam actually matter?

Although the use of rubber dam is widely recommended during endodontic treatment, two things become clear when the evidence is examined more closely:

1. Rubber dam is not routinely used during treatment. According to Whitworth et al. (2000), 60 per cent of dentists never use it, with factors such as patients' perceptions, time to apply and a lack of training being cited as obstacles.

2. There is actually very little in the literature which highlights the positive impact rubber dam use can have on the outcome of endodontic treatment, with only van Nieuwenhuysen et al. (1994) and Lin et al. (2014) showing a positive association.

However, this should not mean that we do not recognise the multiple benefits of rubber dam use during endodontic treatment, namely retraction of soft tissues, better visualisation and protection of the airway among them. The reality is that rubber dam makes our job easier and that makes a difference (Fig 3).

What effect do missed canals have?

Uninstrumented and unfilled root canal anatomy can clearly have an effect on endodontic outcome, and nowhere is this more evident than in the case of the second mesiobuccal canal or MB2 in maxillary molars.

The key to successful identification of root canal anatomy lies in the design and execution of our access cavity. Large, overblown access cavities, incorrect positioning and small contracted cavities lend themselves to problems later. Magnification and illumination are also key with Kulild & Peters showing that almost 10 per cent of MB2 canals were not identifiable without the aid of a dental operating microscope (DOM). They also highlighted the fact that the MB2 is present in excess of 90 per cent of the time (Fig 4a-d).

The effect of missed canals on outcome may be a function of canal configuration in that canals joining before the apex are less likely to have a negative effect. Their presence may also play a strong role in decision-making in failed cases in terms of choosing a surgical or non-surgical approach. Wolcott et al. (2005) discussed the impact of a missed MB2 on prognosis and highlighted its increased incidence in non-surgical re-treatment cases.

Which factors actually affect the outcome?

Outcome studies have highlighted many factors that affect endodontic outcome with the length of the root filling, its density and the quality of the coronal restoration being common to many of them. Ng et al. (2011) cited 13 factors that can affect the outcome of both primary and secondary NSRCT. Interestingly, many of these factors are related to our treatment of root canal infection and obturation, of course, is merely a surrogate measure of what went before. The key to successful treatment lies in the adherence to strict biological principles (isolation, hypochlorite use, patency, dense obturation to length) and the execution of this clinically (Fig 5).

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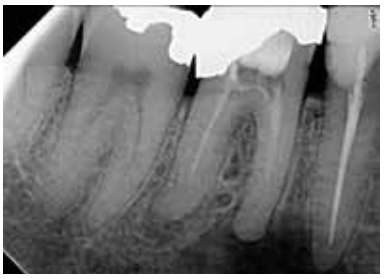
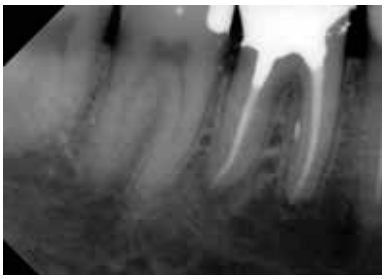




FIGURES 1A AND 1B
Pre-operative and six-month review radiographs following root canal re-treatment showing signs of healing

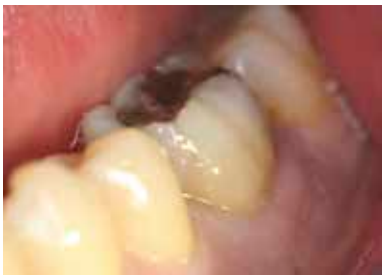


FIGURE 2A
Photograph showing crack at MB aspect of tooth 36

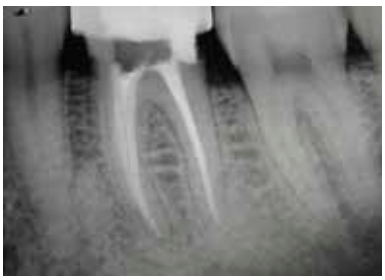


FIGURE 2B
Radiograph following endodontic treatment

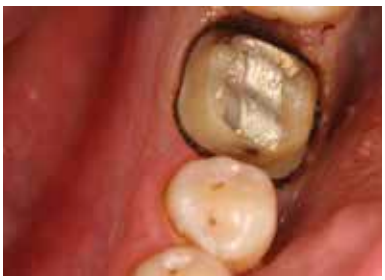


FIGURE 2C
Tooth prepared subsequently for full coverage restoration

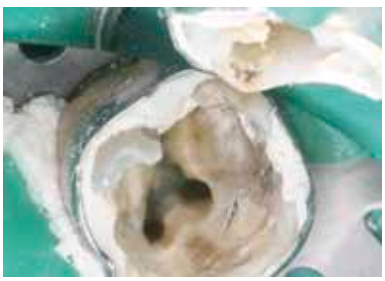


FIGURE 3
Maxillary molar isolated under rubber dam (note stabilisation with orthodontic band and Oraseal used to fill deficiencies in dam)

FROM PREVIOUS PAGE>

How important is the coronal restoration?

The role of the coronal restoration is also important. Many papers have discussed this with some proposing the restoration as a more important prognostic factor (Ray and Trope 1995), others emphasising the importance of the restoration (Tronstad 2000) and others wisely stating the importance of both (Hommez et al. 2002).

Ng et al. (2011) describes a number of 'restorative factors' that may affect the outcome:

- Presence of temporary vs. cast restoration
- Terminal location of tooth
- Presence of cast post and core
- Missing proximal contacts.

It has been routinely accepted that indirect cuspal coverage for posterior root filled teeth with breached marginal ridges constitutes best practice, although Sequeira-Byron et al. (2015) in their Cochrane review, have questioned the evidence base for this although they stop short of not recommending cuspal coverage clinically.

The issue of cast/metal versus fiber posts is also one which is raised regularly (Figs 6a-c). The issues of root fracture and dentine removal are reported as disadvantages of the former while issues with bonding to root canal dentine are cited by those opposing the use of the latter. Theodosopoulou and Chochlidakis (2009) in their systematic review on the subject reported that carbon fiber posts perform better than precious metal cast posts although there are numerous other sources which are not in agreement with this. The reality is that decisions should be made on a case by case basis based on both canal anatomy and remaining dentine distribution and thickness.

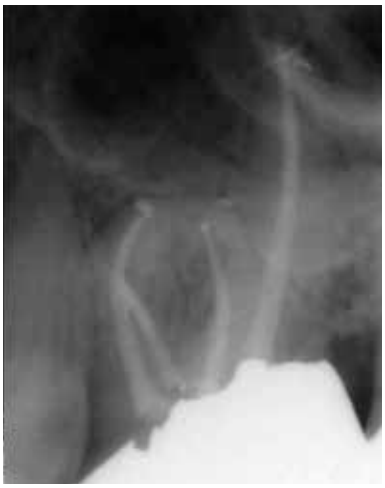
How often should I review the patient?

Although Orstavik found radiographic signs of healing within three weeks post-treatment, it is almost universally accepted that a minimum period of six months should elapse before review is considered. The ESE recommend clinical and radiographic review at one year and continued follow up for a period of four years depending on the initial response. Fristad et al. reported 'late successes' with radiographic signs of healing being evident up to 27 years after treatment. They also caution against labeling radiographic overfills with persistent radiolucencies as failures as delayed healing is often seen in these cases and they are best monitored.

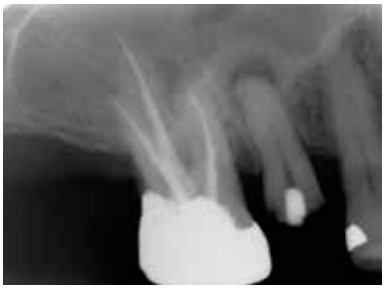
Clinically, we do also sometimes encounter patients who appear to have inexplicable symptoms of discomfort or awareness of a root filled tooth, even in the presence of radiographic signs of healing. Polycarpou et al. (2005) reported the prevalence of persistent pain following successful root canal treatment to be as high as 12 per cent, with a number of factors influencing this including pre-operative tenderness to percussion, a history of chronic pain and presence of pre-operative pain associated with the tooth. We should possibly remember this when consenting patients in certain cases prior to treatment.

Conclusions

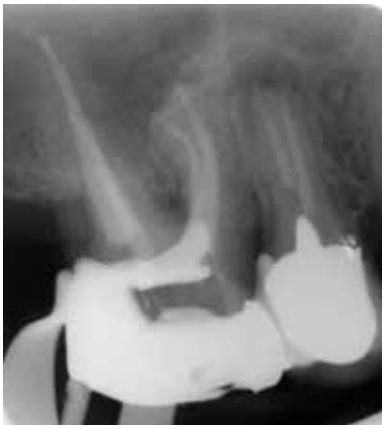
In conclusion, the factors affecting the outcome of endodontic treatment, our role in achieving it and the required follow up period and protocol are clear. Unfortunately, despite all of this as Marton and Kiss (2000) outlined in their review paper, root canal treatment is merely a permissive factor for healing and so we do not have direct control over it. We can only try our best and hope that it is good enough.



FIGURES 4A-C
Radiographs above showing MB anatomy following obturation in both primary and re-treatment cases



FIGURES 4B



FIGURES 4C

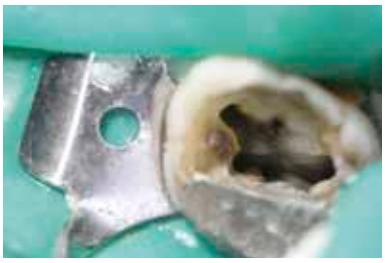


FIGURE 4D
Photo showing position of MB2 on floor of pulp chamber

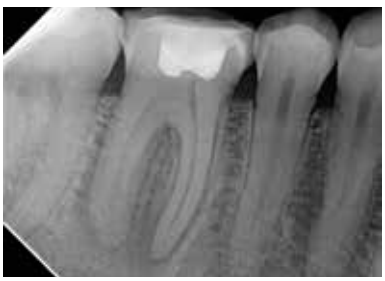


FIGURE 5A
Periapical radiographs showing satisfactory obturation and almost complete resolution of lesion at six-month review

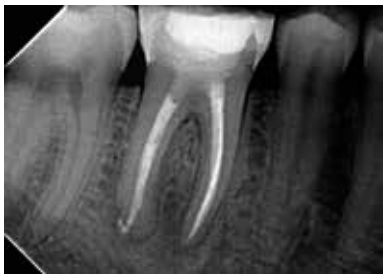
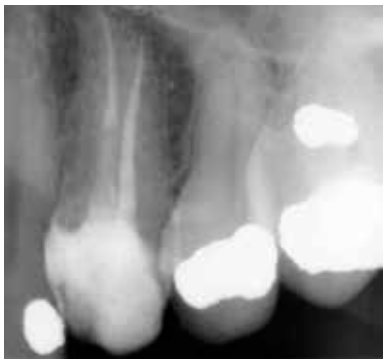
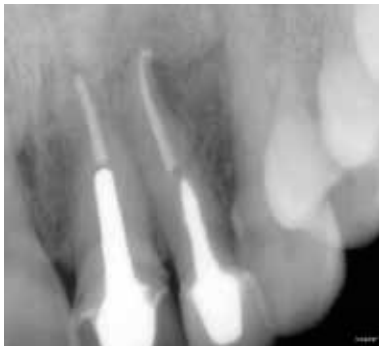
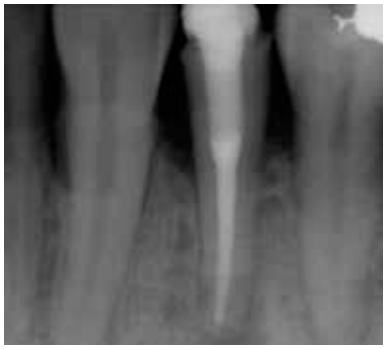


FIGURE 5B
Periapical radiographs showing satisfactory obturation and almost complete resolution of lesion at six-month review



FIGURES 6-C
Radiographs showing teeth restored with fiber post and composite core, direct composite core and cast post and core





VERIFIABLE CPD QUESTIONS

AIMS & OBS:

- To address the questions that may arise in relation to achieving a successful outcome during non-surgical root canal treatment
- To discuss relevant clinical issues
- To provide tips to help optimise outcomes in the clinical setting

LEARNING OUTCOMES:

At the end of the article our readers will:

- Have an understanding of the factors related to successful endodontic outcomes
- Identify the most important clinical factors needed to achieve the best results
- Be able to apply a biological understanding of endodontics to their day-to-day practice
- Recognise the importance of long-term follow-up of patients following root canal treatment.

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ABOUT THE AUTHOR

Dr Robert Philpott, BDS MFDS MClinDent MRD (RCSEd), qualified from Cork Dental School in 2003 and completed his endodontic training at Eastman in London in 2009. He has worked as a specialist in endodontics in Ireland, London and Australia. He currently divides his time working as a consultant in endodontics at Edinburgh Dental Institute and in private practice at Edinburgh Dental Specialists.

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COMFORTABLY NUMB

LOCAL ANAESTHETICS

Dr Laura Fee explores the controversies surrounding local anaesthetics and the medically complex patient

LAURA FEE

Local anaesthetics interrupt neural conduction by inhibiting the influx of sodium ions through channels within neuronal membranes. When the neuron is stimulated, the channel is activated and sodium ions can diffuse into the cell, triggering depolarisation. Following this sudden change in membrane voltage, the sodium channel assumes an inactivated state and further influx is denied while active transport mechanisms return sodium ions to the exterior.

After this repolarisation, the channel assumes its normal resting state. Local anaesthetics have the greatest affinity for receptors in the sodium channels during their activated and inactivated states rather than when they are in their resting states [1], [2].

Pharmacology

Local anaesthetics consist of three components that contribute necessary clinical properties:

- Lipophilic aromatic ring – improves lipid solubility of the compound
- Intermediate ester/amide linkage
- Tertiary amine.

Articaine consists of an amide group and an ester link. It has a thiophene ring instead of a benzene ring, as seen in the chemical structure of lignocaine. The thiophene ring improves its lipid solubility. Therefore in some studies articaine shows better potential for penetrating through the neuronal sheath and membrane when compared with other local anaesthetics [3].

The dissociation constant of an anaesthetic affects its onset of action. The lower the pKa values, the greater the proportion of uncharged base molecules can diffuse through the nerve sheath. Articaine has a pKa of 7.8, whereas lignocaine has a pKa of 7.9. This proves important when a local anaesthetic is administered to anaesthetise inflamed tissues, where the ph of the tissues is reduced [4]. Articaine has a half-life of 20 minutes, whereas lignocaine has a half-life of 90 minutes. Therefore, articaine presents less risk for systemic toxicity during lengthy dental treatments when additional doses of anaesthetic are administered [5].

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Dr Laura Fee graduated with an honours degree in dentistry from Trinity College, Dublin. During her studies, she was awarded the Costello medal for undergraduate research on cross-infection control procedures. She is a member of the Faculty of Dentistry at the Royal College of Surgeons and, in 2013, she completed the Certificate in Implant Dentistry with the Northumberland Institute of Oral Medicine and has since been awarded the Diploma in Implant Dentistry with the Royal College of Surgeons, Edinburgh. Laura is currently completing the Certificate in Minor Oral Surgery with the Royal College of Surgeons, England. She has also been involved with undergraduate teaching in the School of Dentistry, Belfast where she has an honorary oral surgery contract.

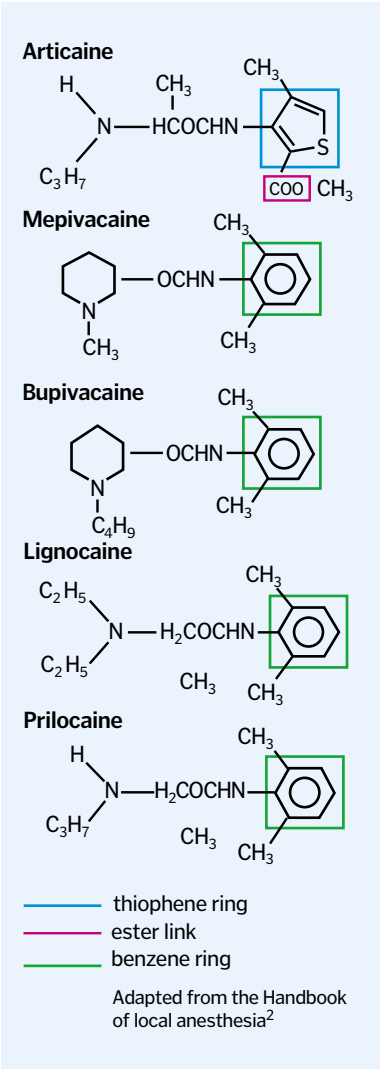

FIGURE 1
Chemical structure of local anaesthetics

Comparison between articaine and lignocaine

Some studies argue that there is no significant difference in pain relief provided by 2 per cent lignocaine and 4 per cent articaine where both formulations contain adrenaline [6]. However, a recent systematic review demonstrated a different conclusion [7]. This review showed that when considering successful infiltration anaesthesia, 4 per cent articaine solution containing adrenaline was almost four times greater than a similar volume of 2 per cent lignocaine also containing adrenaline. Other studies have stated that 4 per cent articaine offers superior levels of anaesthesia in the anterior maxillary region when compared to 2 per cent lignocaine, however this level of superiority appears less significant in the maxillary molar region [8].

There is evidence to support that articaine is more effective in the maxillary posterior region when compared with lignocaine when tissues are inflamed [9]. However, there is insufficient evidence to suggest a similar level of superiority for mandibular teeth, where the solution has been administered with the inferior alveolar nerve block technique [10].

The additive administration of lignocaine using the IANB technique and buccal infiltration with articaine could potentially increase the level of pulpal anaesthesia achieved in the mandibular molar and premolar area [11]. The inclusion of adrenaline in 4 per cent articaine is considered critical in achieving its profound anaesthesia [12].

Brandt et al demonstrated that articaine was superior when administered using the inferior alveolar nerve block technique (IANB) [7]. However, it must be stressed that the potency of the agent administered via the inferior alveolar block was considerably lower than the potency administered by the infiltration technique. It was shown that neither articaine or lignocaine demonstrated superiority over the other when administered to symptomatic teeth. It is important to recognise the limitations in this study of comparing a 4 per cent solution of articaine with a 2 per cent solution of lignocaine [7]. Other studies also reported no difference between articaine and lignocaine when using the IANB technique while treating symptomatic teeth [11,13].

Interestingly, it has been demonstrated that 4 per cent articaine with 1:100,000 adrenaline administered using the buccal infiltration technique had a significantly faster onset of pulpal anaesthesia when compared with the inferior alveolar nerve block. Therefore, dentists can consider the use of articaine administered by a buccal infiltration as an alternative to the inferior alveolar nerve block when anaesthetising the mandibular first molar [14]. Another study also concluded that articaine delivered by buccal infiltration alone was more effective than lignocaine administered by the inferior alveolar technique when anaesthetising mandibular first molar teeth [15].

Paraesthesia

In 2010, Garisto et al reported 248 cases of paraesthesia after dental treatment [16]. Most cases involved mandibular nerve blocks and, in 89 per cent of cases, the lingual nerve was damaged. Paraesthesia was shown to be 7.3 times more likely with 4 per cent articaine when compared with lignocaine. Similar findings were reported by Hillerup et al, who demonstrated greater neural toxicity of 4 per cent compared to 2 per cent articaine. Therefore, it might be advisable to limit the use of 4 per cent articaine to infiltrations and avoid for nerve blocks [17].

Articaine has also been shown to be superior for infiltrations in the mandible and does not cause neural toxicity unless injected near the mental nerve [18].

Paraesthesia has been associated with the use of local anaesthetics, especially when administered using the inferior alveolar nerve block technique [19]. Observational research performed in Denmark reported a 20-fold greater risk of nerve injury when articaine was used compared with other local anaesthetics and administered via the IANB technique [17]. Given that articaine is less neurotoxic than other anaesthetics, the findings of this research were unexpected [20]. It is important to consider that the aetiology of paraesthesia may be the result of a needle injury to the lingual and inferior alveolar nerve. Factors including intra-neural haematoma, extra-neural haematoma, oedema and chemical neurotoxicity of articaine may also play a role [21].

Dentists must also consider the 'Weber effect' [22]. This occurs when a new product is launched onto the market and is scrutinised more closely. Immediately after 4 per cent articaine containing 1:100,000 adrenaline was introduced, there was a significantly increased incidence of paraesthesia. But, two years later, a reduction was recorded despite an increased number of cartridges being sold [21].

The literature reports that the lingual nerve is more frequently damaged than the inferior-alveolar nerve. Approximately 70 per cent of permanent nerve damage is sustained by the lingual nerve, whereas a 30 per cent occurrence was recorded affecting the inferior alveolar nerve [23]. Current data indicates that 85-94 per cent of non-surgical paraesthesia caused by local anaesthetics recovers within two months. After a two month period, two thirds of those patients whose paraesthesia has not resolved will never completely recover [23].

Articaine is also used in areas of medicine such as plastic and reconstructive surgery, ophthalmology and orthopaedic surgery. It is interesting that there are no reports of paraesthesia from articaine following its use in medicine. Is it possible that articaine only affects nerves supplying the oral cavity and specifically the lingual nerve? It is thought that paraesthesia affects the lingual nerve twice as much as the inferior alveolar nerve due to the fascicular pattern of the injection site. Also, when a patient opens their mouth for treatment the lingual nerve is stretched and more anteriorly placed; this decreases its level of flexibility, which is needed to deflect the needle. During administration, the barbed needle can damage the inferior alveolar or lingual nerve during withdrawal [24].

Interestingly, in 2006 – when Hillerup raised concerns that articaine was responsible for neurosensory disturbances – it was found that 80 per cent of all these reports came from Denmark. It is worth noting that, at the time, the Danish population was approximately 5.6 million compared with 501 million in the wider EU community. This research led to the Pharmacovigilance Working Party of the European Union conducting an investigation involving 57 countries and more than 100 million patients treated with articaine. The conclusion was emphatic, stating that all local anaesthetics

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may cause nerve injury. They estimated that the incidence of sensory impairment following administration of articaine was one in every 4.6 million treated patients. Therefore, no medical evidence existed to prohibit the use of articaine and the safety profile of the drug remained unchanged.

It is worth considering that, before articaine was introduced to the USA, the incidence of permanent nerve damage from inferior alveolar nerve blocks was 1:26,762. In 2007, Pogrel also concluded that nerve blocks can cause permanent damage regardless of which anaesthetic agent is used. Both articaine and lignocaine have been associated with this phenomenon in proportion to their use.

Negative side-effects

Articaine can result in restlessness, anxiety, light-headedness, convulsions, dizziness, tremors, drowsiness and depression [13]. Ocular complications have been reported due to interference with sensory and motor pathways [25]. Other adverse effects include headaches, facial oedema and gingivitis [13]. Skin rashes with itching after administration of articaine have also been cited in the literature [26]. Skin necrosis on the chin has also been reported after administration of 4 per cent articaine using the IANB technique [27].

With regards to the cardiovascular system, 4 per cent articaine can decrease cardiac conduction and excitability. Complications such as reduced myocardial contractility, peripheral vasodilation, ventricular arrhythmia, cardiac arrest and, rarely, death have been reported in the literature [28]. It is important to exercise caution in patients with severe hepatic impairment. However, the rapid breakdown of articaine into inactive metabolites results in low systemic toxicity [29].

Conclusions on articaine

Since 1973, there have been more than 200 papers published on articaine. Virtually all of these studies have concluded that articaine is as effective and safe as other comparable local anaesthetic agents such as lignocaine, mepivacine or prilocaine. It was shown that articaine is the least likely anaesthetic to induce an overdose caused by administration of too many cartridges. No significant difference in pain relief has been observed between adrenaline containing formulations of 4 per cent articaine and 2 per cent lignocaine.

The time of onset and duration of anaesthesia for 4 per cent articaine is comparable to other commercially available local anaesthetics. Furthermore, the majority of studies have indicated that the incidence of complications including paraesthesia are equal for lignocaine and articaine. The FDA has approved articaine 4 per cent with adrenaline 1:100,000 to age four years in paediatric patients.

The popularity of articaine cannot be disputed within the dental profession. In the USA in 2009, 41 per cent of all dental local anaesthetic used was articaine. In 2012, the market share for articaine in Germany was 97 per cent and in the same year, it was shown that 70 per cent of dentists use articaine in Australia.

Adrenaline-containing anaesthetics

Adrenaline causes constriction of blood vessels by activating alpha-1 adrenergic receptors. It aids hemostasis in the operative field and delays absorption of the anaesthetic. This delayed absorption decreases the risk of systemic toxicity and lengthens its duration of action. Adrenaline can cause considerable cardiac stimulation due to its affect as a beta-1 adrenergic agonist [30].

Cardiovascular influences

Adrenaline is an agonist on alpha, beta-1 and beta-2 receptors. It is a vasoconstrictor as the tiny vessels in the submucosal tissues contain only alpha receptors [31]. There is much debate regarding the influence of adrenaline on patients with cardiovascular disease. Dionne et al studied the influence of three cartridges of the American formulation Lidocaine with adrenaline 1:100,000. Submucosal injection of this dosage increased cardiac output, heart rate and stroke volume. Systemic arterial resistance was reduced and mean arterial pressure remained unchanged [32].

Likewise, Hersh et al observed similar results following the administration of articaine containing 1:100,000 and 1:200,000 adrenaline. Although the influence of adrenaline reported by Hersh et al was minor, it is noteworthy that all 14 participants were healthy and taking no medication, yet two of these patients experienced palpitations [33].

A dose of approximately two cartridges of lignocaine containing adrenaline 1:80,000, is the most conservative and frequently cited dose limitation for patients with significant cardiovascular disease. Ultimately, the decision requires the dentist to practise sound clinical judgement and to discuss any concerns with that patient's doctor if necessary. Peak influences of adrenaline occur within five to 10 minutes following injection and they decline rapidly [33].

Another practical suggestion is to determine the dosage based on patient assessment. If the medical status of a patient is questionable, a sensible protocol is to record baseline heart rate and blood pressure preoperatively and again following administration of two cartridges of lignocaine containing 1:80,000 adrenaline. If the patient remains stable, additional doses may be administered, followed by a reassessment of vital signs [30].

Hypertension

After administering one to two cartridges of adrenaline-containing local anaesthetic with careful aspiration and slow injection and the patient exhibits no signs or symptoms of cardiac alteration, additional adrenaline containing local anaesthetic may be used. A safe option preferred by some dentists is to firstly use a minimal amount of adrenaline-containing local anaesthetic and then supplement as necessary with an adrenaline-free anaesthetic [34].

The risk of the anaesthesia wearing off too soon, resulting in the patient producing elevated levels of endogenous adrenaline because of pain, would be much more detrimental than the small amount of adrenaline in the dental anaesthetic [35].

Drug interactions

Beta-adrenergic blocking drugs increase the toxicity of adrenaline-containing local anaesthetics. It inhibits enzymes in the liver and decreases hepatic blood flow. Therefore, it is advisable not to give large doses of local anaesthetic to patients on beta blockers. There have been multiple reports of stroke and cardiac arrest within the literature [36].

Slow administration and aspiration can also help prevent undesirable reactions [37].

Judicious use of adrenaline is recommended for patients medicated with nonselective beta blockers. Unlike selective agents that only block beta-1 receptors on the heart, nonselective agents also block vascular beta-2 receptors. In this case, the alpha agonist action of adrenaline becomes more pronounced and both diastolic and mean arterial pressures can become dangerously increased. This is often accompanied by a sudden decrease in heart rate. Significant consequences of this interaction are well documented [38].

The interaction with beta blockers follows a time course similar to that observed for normal cardiovascular responses to adrenaline. It commences after absorption from the injection site, peaks within five minutes and declines over the following 10-15 minutes. Adrenaline is not contraindicated in patients taking nonselective beta blockers, but doses must be kept minimal and monitoring of blood pressure advisable [39].

Verapamil, which is a popular calcium channel blocker, increases the toxicity of 2 per cent lignocaine. As for patients taking beta-adrenergic blocking drugs, two cartridges should be the limit [40]. With regards to bupivacaine, calcium channel blockers enhance the cardiotoxicity of this longer acting anaesthetic [41].

Antihypertensives are the main cardiovascular drugs that interact with anaesthetics containing adrenaline. Theoretically, beta-blockers, diuretics and calcium-channel blockers may all result in adverse reactions when used with adrenaline-containing local anaesthetics [42].

Adrenaline causes alpha and beta-adrenergic agonism. Alpha-adrenoreceptor stimulation results in vasoconstriction of peripheral blood vessels, whereas beta-adrenoreceptor stimulation decreases vascular resistance due to vasodilation of vessels in the liver and muscles, therefore reducing diastolic blood pressure. If beta-effects are blocked, the alpha-adrenergic stimulation leads to an unopposed increase in systolic blood pressure triggering a cerebrovascular accident.

Therefore, if more than one to two cartridges are needed in such patients, adrenaline-free solutions should be administered. An advantage, however, of beta-adrenoreceptor blockers in dental patients is that the heart is protected from the elevation in rate produced by beta-adrenergic stimulation from exogenous adrenaline [43].

Diuretics can affect the metabolic actions of adrenaline. Increased levels of adrenaline reduces the plasma concentration of potassium [44]. These reductions have been documented in patients receiving dental local anaesthetics containing adrenaline [45].

In patients undertaking oral surgery procedures who are taking non-potassium-sparing diuretics, there have been incidences of adrenaline-induced hypokalaemia [44]. It should remembered that calcium channel blocking drugs may also increase adrenaline-induced hypokalaemia [46].

Angina pectoris and post-myocardial infarction

The use of adrenaline containing local anaesthetics is advisable as part of a stress reduction protocol. The dosage of the adrenaline should be limited to that contained in two cartridges of lignocaine 2 per cent 1:80,000 adrenaline. For patients with unstable angina, a recent myocardial infarction less than six months previously or a recent coronary artery bypass graft surgery within three months warrant all elective dental treatment to be deferred [47]. If emergency treatment is imperative, stress-reduction protocols with anti-anxiety agents are advisable with a limitation of two cartridges of adrenaline containing anaesthetic [48].

As part of a stress reduction protocol, the Wand allows the dentist to administer local anaesthetic with a non-threatening handpiece. The anaesthetic syringe is often the principle cause of stress for patients as it is considered by many as the most uncomfortable part of dental treatment. The Wand helps deliver a computer-regulated flow of anaesthetic that enables pain-free dental anaesthesia for the different types of injections. This can help to make the patient less anxious.

AGENT	CONC W/V	CONC MG/ML	MAX DOSE MG/KG	DOSE ML/KG	MG MAX DOSE	CARTRIGES
BUPIVACAINE 0.5%	0.5	5	1.3	0.26	90	8
LIDOCAINE 2%	2	20	4.4	0.22	300	6
MEPIVACAINE 2%	2	2	4.4	0.22	300	6
ARTICAINE 4%	4	40	7	0.18	500	5
PRILOCAINE 3%	3	30	5	0.17	400	6
MEPIVACAINE 3%	3	30	4.4	0.15	300	4
PRILOCAINE 4%	4	40	5	0.13	400	4

AGENT	CONCENTRATION	TRADE NAME
BUPIVACAINE	0.5%	MERCAINE
MEPIVACAINE	2%	LIGNOSPAN
LIDOCAINE	2%	SCANDONEST
PRILOCAINE	3%	SEPTANEST
ARTICAINE	4%	CITANEST
MEPIVACAINE	3%	SCONDONEST
PRILOCAINE	4%	CITANEST

Cardiac dysrhythmia

Elective dentistry should be postponed in patients with severe or refractory dysrhythmias until they are stabilised. It is safe to limit the local anaesthetic dose to two cartridges of lignocaine 2 per cent containing 1:80,000 adrenaline [49]. The use of periodontal ligament or intraosseous injections using an adrenaline-containing local anaesthetic is contraindicated [50].

Congestive heart failure

Patients taking digitalis glycosides, such as digoxin, should be carefully monitored if adrenaline-containing anaesthetics are administered as an interaction between these two drugs can trigger dysrhythmias. Patients taking long-acting nitrate medications or taking a vasodilator medication may show decreased effectiveness of the adrenaline and therefore may experience a shorter duration of dental local anaesthesia [48].

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Cerebrovascular accident
Following a stroke, it is recommended that dental treatment be deferred due to the significantly elevated risk of recurrence. Following a six-month interval, dental procedures can be rescheduled with the use of adrenaline-containing local anaesthetics. If the stroke patient has associated cardiovascular problems, the dosage of local anaesthetic with vasoconstrictor should be kept to a minimum [48].

Asthma
Stress can precipitate an asthma attack, making stress-reduction protocols essential. Conservative use of local anaesthetics containing adrenaline is advised. The Food and Drug Administration warn that drugs containing sulfites can cause allergic reactions in susceptible individuals [51].

Some studies suggest that sodium metabisulfite, which is an antioxidant agent used in dental local anaesthetic, may induce asthma attacks [52]. Data is limited on the incidence of this reaction and even in sulfite-sensitive patients, it appears to be an extremely small risk. Indications are that more than 96 per cent of asthmatics are not sensitive to sulfites and those who are sensitive are usually severe, steroid-dependent asthmatics [53].

Perusse and colleagues concluded that local anaesthetic with adrenaline can be safely used in patients with nonsteroid-dependent asthma. However, until we learn more about the sulfite sensitivity threshold, conservative use of local anaesthetic with adrenaline in corticosteroid-dependent asthma patients is advisable. This is due to their higher risk of sulfite allergy and the possibility that an unintentional intravascular injection might occur, causing a severe asthmatic reaction in a sensitive patient [54]. However, in recent times, the results of these older studies have been regarded as questionable by many in the profession.

Hepatic disease
In patients with chronic active hepatitis or with carrier status of the hepatitis antigen, local anaesthetic doses must be kept to a minimum. In patients with more advanced cirrhotic disease, metabolism of local anaesthetics may be significantly slowed, resulting in increased plasma levels and complications from toxicity reactions. Local anaesthetic dosage may need to be decreased and the time lapse between injections extended [55].

Diabetes
Some patients experience dramatic swings between hyperglycemia and hypoglycemia and, therefore, the use of adrenaline-containing anaesthetics should be reduced due to the risk of adrenaline-enhanced hypoglycemia [48].

Cocaine
The major concern in patients abusing cocaine is the significant danger of myocardial ischemia, cardiac dysrhythmias and hypertension. Some researchers recommend deferral of dental treatment for 24 to 72 hours [56].

Tricyclic antidepressants
One to two cartridges of adrenaline-containing local anaesthetic can be safely administered to patients taking these drugs. However, careful observation at all times for signs of hypertension is necessary due to enhanced sympathomimetic effects [57].

HIV
Protease-inhibitor drugs have been shown to increase the plasma levels of lignocaine potentially increasing cardiotoxicity 58.

Parkinson's disease
Athough there is no data regarding the influence of the anti-Parkinson drug entacapone, caution is advised while using adrenaline-containing anaesthetics. Three cartridges of 2 per cent lignocaine with 1:80,000 adrenaline is the recommended upper limit in adults [59].

Local anaesthetic reversal
A local anaesthetic reversal agent has been introduced that effectively reverses the influence of adrenaline on submucosal vessels. Phentolamine (Ora Verse) is an alpha receptor blocker formulated in dental cartridges [60].

In the future, this may prove useful for some medically compromised patients such as diabetics or elderly patients for whom adequate nutrition may be hindered by prolonged numbness. However, currently this reversal agent is not available in the UK or Ireland.

REFERENCES

Due to issues of space, the references for this article will only be available online. To view the references in full, visit www.sdmag.co.uk

VERIFIABLE CPD QUESTIONS

AIMS AND OBJECTIVES:
- To encourage the dental professional to choose the most effective local anaesthetic for particular clinical situations.
- To educate the dental professional on the pharmacological differences between articaine and lignospan.
- To discuss the negative side effects of local anaesthetics.
- To educate the dental professional on appropriate local anaesthetic use in medically complex patients.

LEARNING OUTCOMES:
- Understanding the pharmacology of articaine and lignospan.
- Considering the evidence in the literature regarding the risks of paraesthesia associated with articaine versus lignospan.
- Gaining a more in depth knowledge of the negative side effects of local anaesthetics especially in relation to medically compromised patients.

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HOW TO TACKLE DENTAL STRESS

STRESS

Morag Powell outlines the various tools and options available to dental professionals to manage and control their stressful lives

MORAG POWELL

There is no doubt that dentistry is a high-stress profession. Recent studies have reported that dental teams are subject to a variety of stress-related physical and emotional problems [1,2,3,4]. These include heart disease, high blood pressure, adrenal fatigue, alcoholism, insomnia, depression and anxiety [5]. Stress can be defined as "an adverse reaction that people have to excessive pressure or other types of demand placed on them".

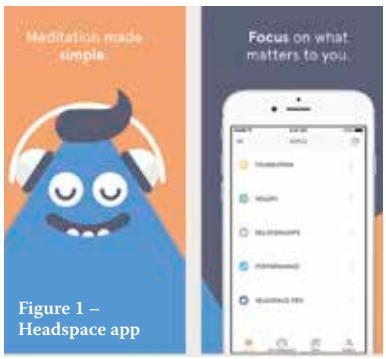

Figure 1 – Headspace app

Research suggests that the top five stressors in dentistry include running behind schedule, causing pain to our patients, heavy workloads, patient management and the treatment of anxious patients [2]. As well as these factors, we have litigation on the increase [6] (the UK has now taken over the US with regards to litigation cases), and the GDC's Fitness to Practise committees to worry about. When you take all of these factors into account, it is unsurprising that stress levels in dentistry are soaring to dangerously high levels. Yet, there is a lack of proactive measures being taken within our working environment and teams to address this issue of stress.

The signs of stress in an individual include feeling tense, feelings of anger and frustration, worry and anxiety, lack of concentration at home and at work, impaired sleep, depression, lack of interest in hobbies, poor appetite, comfort eating, increased consumption of alcohol and other stimulants to help to cope with the emotional impacts of stress. This can manifest within the dental team in many ways which include conflict within the team, absenteeism, a high turnover rate in staff, low morale, increased complaints, poor performance while at work and at times a lack of care in the standard of treatment provided. It is not only in the workplace that the effects of stress can manifest. They can also be present in the home and can cause problems with personal relationships. So, as there is no doubt that dentistry is a high-stress profession, what steps can we take within the dental team to prevent this?

We are regularly given advice on how to lead healthy lives, but sometimes we are so caught up in the stresses of life and work that we don't know how or where to begin. I frequently hear colleagues suffering with stress say that they do not have time to fit exercise and attending the gym into their life due to their workload, commuting and their family commitments. It is only when they reach near-breaking point with their stress levels that they consider introducing some form of stress management into their life. I prefer a more preventive approach with stress involving a combination of regular physical exercise and well being activities such as yoga or tai chi.

I have been practising yoga for more than 15 years; initially it was the only type of exercise that I felt completely relaxed afterwards. I could go into a yoga session completely wired after a stressful day and come out the class an hour later in a blissful state. After a while I started to realise, though, that this blissful state would only last for a few hours after the yoga class or if I was lucky maybe 24 hours, and then the stress levels would rise again. What I realised was that if I made time to meditate every day in between the yoga classes I could return to the relaxed state that I had experienced quite easily to keep me going to my next class.

Meditation is an easy stress-management tool, which can be incorporated into your daily life very easily. When an individual is stressed, it is the sympathetic nervous branch of the autonomic nervous system that becomes overloaded. This is our 'fight or flight' response. The sympathetic nervous system (SNS) stimulates the adrenal glands when we are in flight or flight mode, releasing adrenaline and noradrenaline. This increases our heart rate, our blood pressure and our breathing rate. Once activated it can take anything from 20-60 minutes to return to pre-stimulation rates. By meditating and focusing on our breath we can turn off the

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SNS and switch on the parasympathetic nervous system (PNS), which is known as the 'rest and digest' response. When the PNS is activated, our heart rate drops, our blood pressure falls, our muscles relax and our breathing slows and deepens.

A practice of daily meditation can make our minds calm and peaceful, allowing us to take a step back from the hectic lives we are all leading. The more we incorporate it into our daily lives the more peaceful our minds become, the less stress our bodies have to cope with and we become happier in both our professional and personal lives.

Meditation is not a complicated practice; all we basically need to do is focus our minds. It can be done anywhere and at anytime, and the results can be seen very quickly by the individual. For me, I find that spending my last 15 minutes of my lunch hour sitting on my dental chair meditating is the time I can fit my daily meditation routine in. Of course, in order to be able to achieve this I have to be organised with taking my lunch to work with me everyday, either preparing my lunch the night before or purchasing it on the way to work in order to give me the time during my lunch break to meditate. When I first started to do this at lunchtime, no one actually knew what I was doing in my surgery. I think everyone thought I was sat relaxing listening to music on my iPhone!

How to begin meditating

The practice is a very simple one. I would suggest you find a quiet space and sit down. You can sit normally on a chair or sit on your dental chair, being comfortable with a straight back is the main aim. Keeping your eyes open initially, bring your focus onto your breathing. I like to do a three-part breath, that is taught in yoga, to initially calm my breathing down. I breath into my stomach, rise the breath into my chest and feel my back expand and then feel my collar bones rise. To exhale I lower the collar bones, deflate my chest and pull in my stomach gently squeezing the last of the breath. I repeat this for a few minutes, then I close my eyes.

Depending on how my mind is on the day will determine what I focus on during my meditation. My mind will vary from day to day like any other mind. What I have found that really helps me to deal with all of my thoughts is to accept and acknowledge that, once my meditation is over, I will be able to get to them, and that the time I allocate for meditation is just for that. Everything will be still be there in 15 minutes when I start work again. Meditation is the process of getting to know our mind and understand it. The trick is not to identify with your thoughts and give them any energy or focus, just observe them.

Once my eyes are closed I continue with my breathing and do a mental scan of my body to see where any tension may be. Working my way from my head down to my toes I relax any tension that I have in my body, and then return my focus to my breath. Any thoughts that come into my head I let come and go, observing them without feeding into them. At this point my mind starts to settle fully and becomes peaceful.

This is the parasympathetic nervous system switching on and starting to do all of the good work in getting you back to feeling human again. I like to stay in this headspace with my eyes closed for as long as I can, at least 10 minutes. I use an app on my phone to time this, which really helped in the beginning as it stopped me worrying about how long I was sitting there for.

When my mediation time is up, I open my eyes and carry on with my working day. It is now part of my daily working routine, which I look forward to each day.

Guided meditation

If you find that the breathing meditation does not work for you in the beginning you can try a guided mediation. This is a when you are guided into a relaxed state by a teacher or trained practitioner. There are many of these available in app form and also free on YouTube.

Mantra meditation

This is the practice of repeating a mantra over and over in your mind during your meditation. It is a really good method of meditation for beginners as it really helps to focus your mind on the words that you are saying, giving a distraction from your thoughts. The mantra can be anything you want, from a positive affirmation of 'I change my thoughts, I change my world' to using a Hindu mantra, an example being a simple 'Om' or 'Om Namah Shivaya' or just a simple phrase or word like relax or peace.

Yoga and meditation

You gain the most benefit from your meditation when combining it with a yoga practice. Yoga has the ability to trigger both the SNS and the PNS, and is designed, when practised in its traditional form, to prepare you for meditation. A good rounded yoga class will trigger the SNS at the beginning of the class with sun salutations and more challenging postures then introduce postures that trigger the PNS such as seated forward bending postures and shoulder stands (these can be easily done by beginners by placing their legs up against a wall with their back staying flat on the floor), before taking you into yoga nidra which is the deep relaxation at the end of a yoga class, which stimulates the PNS further. This is followed by some breathing exercises, or pranayama as it is called in yoga, to help prepare your mind further for the meditation at the end of the class, which again stimulates the PNS further.

Apps to help with meditation

There are many apps available either free or at a small cost to help you with your meditation. I find that these can be really helpful with introducing a new habit or routine. As with any form of behaviour change it is forming a good habit and getting into a good routine that will ensure you keep the daily practise going. The apps monitor your progress and help with the formation of new habits with different methods of reinforcement.

- *Headspace (Fig 1)*

Headspace is an app that has 10 free introductory sessions before requiring you to subscribe. It is available from the app store and is a good way to introduce meditation into your daily routine. It records your progress with each session building on the last. If you subscribe, there are sessions available to help with many different topics from depression to over eating.

● *Insight (Fig 2)*
The Insight timer is another app available from the app store. It is a timer for your meditation where you can determine the length of time you would like to meditate for. It is also has a great resource of guided meditations available free on topics including an introduction to meditation, morning meditations, sleep meditations, relaxation, mindfulness, self love and compassion and a collection of talks and podcasts.

● *Oprah and Deepak's 21-day meditation (Fig 3)*
Oprah Winfrey has teamed up with Deepak Chopra, introducing a free 21-day mediation course at different times throughout the year. There are 21 daily downloads of meditation and wisdom from Deepak and Oprah, with each day building on the previous day's session. If you miss the sign-up for this programme you can purchase it from their website www.chopracentremeditation.com

Alternatively you can visit Deepak's own website – www.deepakchopra.com – which is a great resource for information on meditation including many free downloads.

● *Breathe (Fig 4)*
This app monitors your progress and also has a range of free guided meditations. It is designed to reinforce behavioural change and habits with rewarding you with different stickers when you have completed any of the goals that are set for you by the app.

Conclusion

Dentistry is a high-stress profession, not just for the dentist but also for each member of the team. If we do not manage our stress levels effectively, eventually we will become demotivated, burn ourselves out and put ourselves at risk of stress-related illnesses. Forming a good habit of taking a time out of 10-15 minutes each day to relax and refocus can help to reduce stress levels of all members of the team.

Figure 2 – Insight timer app

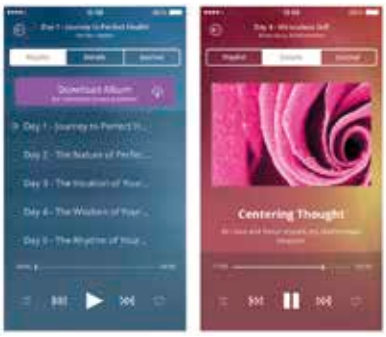

Figure 3 – Oprah and Deepak's 21-day meditation app

Figure 4 – Breathe app

VERIFIABLE CPD QUESTIONS

LEARNING OUTCOMES:
By the end of the article you will have the appropriate knowledge of:
- How to introduce meditation into your daily life
- Different methods to choose from for your meditation practice
- How to recognise the 'fight or flight' response.

EXAMPLE QUESTION:
What stress-related physical and emotional problems are the dental team at risk from?

a. Heart disease and high blood pressure
b. Insomnia, depression and anxiety
c. Adrenal fatigue and alcoholism
d. All of the above

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ABOUT THE AUTHOR
Morag has been involved in the dental industry for 25 years. She is dually qualified, as a hygienist and a therapist, with a primary focus on delivering high-quality dental care in private practice. She has a special interest in adult periodontics, peri-implantitis and composite restorations.

An advocate of lifelong learning, she has recently completed the BSc (Hons) course in Dental Studies at UCLAN. Prior to relocating to Gibraltar, Morag ran a study club for hygienists and therapists in the north of Scotland, delivering education to local colleagues. Morag is also a consultant for the Swiss dental instrument company Deppeler and a tutor for Aspiradent, a postgraduate teaching company.

Working as lead hygienist therapist at Fergus & Glover, Morag led the team to win the 'Best Preventive Practice' in the UK at the DH&T awards 2012, and has been shortlisted for both Hygienist of the Year at the DH&T awards and DCP of the Year at the Scottish Dentistry awards.

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KEEPING IT CLEAN

ONGOING CARE AND CLEANING OF INHALATION SEDATION EQUIPMENT IS AN IMPORTANT AREA, BUT TRAINING CAN BE SCARCE, SAYS JANET PICKLES

Relative analgesia (RA) or inhalation sedation (IS), as it is more commonly referred to now, is well established in the UK and has been since the 1960s. In that decade, Cyprane (West Lane, Keighley) began manufacture of the Quantiflex Analogue MDM (Fig 1) – the first dedicated RA flowmeter, developed by a Canadian, Fraser Sweatman. This machine is still in production today, although sadly no longer in the UK.

Since that time, many other RA flowmeters have become available: Digital MDM (Fig 2) and MXR – all now manufactured by Porter Instruments (Philadelphia, USA). A further range is available from Accutron (Phoenix, Arizona): Analogue Ultra (Fig 3), Digital Ultra and the Newport. Also available is the McKesson Mc1, along with some older types of unit such as the QRA Mark I and II flowmeters, the latter of which are still in use, but no longer in production.

In addition, over the years there have been a variety of mounting options for these flowmeters, the most common of which is the mobile four cylinder stand – allowing the flowmeter to be a stand-alone system. The stands have undergone several improvements since the 1960s. The original Cyprane stands (Fig 4) are now mostly replaced, although a few still remain out in the field along with the original Cyprane flowmeter, making them at least 50 years old. The flowmeter can be overhauled but, sadly, nothing can be done with the stand and it should be replaced with the modern version (Fig 5). Another popular mounting for pipeline use is the telescoping swing arm bracket (Fig 6).

It is important that staff recognise their equipment and are able to identify the individual components that make up the specification. If in any doubt, advice should be sought from the supplier.

MAINTENANCE AND CARE OF INHALATION SEDATION EQUIPMENT

This subject is unfortunately something of a grey area. There are no textbooks that teach how to maintain and care for IS equipment on a daily basis and training in this area appears sketchy and varied. However, staff should be able to demonstrate a good working knowledge of the following:

IDENTIFY THE EQUIPMENT SPECIFICATION USED IN THEIR PARTICULAR ENVIRONMENT

Flowmeter type, manufacturer, analogue or digital. Mounting type i.e. mobile four-cylinder stand, bracket, high or low stand.

IDENTIFY SCAVENGING ARRANGEMENT

Type of breathing circuit, masks and tubings – autoclavable or disposable. Method of active draw (i.e. for removal of waste gases) i.e. central AGSS with AGS Adapter, HVE chair Suction port or Miniscav. Be able to identify which is suitable (e.g. does chair suction comply if that is the chosen method). Understand the differences between passive and active dental scavenging and why only active should be used. Be able to demonstrate a working knowledge of the effects of nitrous oxide exposure.

MEDICAL GASES

Demonstrate an ability to identify types and sizes of medical gas cylinders. Ability to fit and remove E-size cylinders from a mobile four-cylinder stand. Check and replace bodok seals. Check oxygen and nitrous oxide pins on stands are intact. Demonstrate ability to read cylinder contents gauges on four-cylinder stands or pipeline regulators and that they have a basic knowledge of the different characteristics of oxygen and nitrous oxide gases and how they behave.

For centrally supplied medical gas systems, be able to identify the 'type' of system i.e. full-blown Hospital HTM02-01 standard[1], smaller compressed gas fittings down to small 'in-surgery' pipeline

CONTINUED OVERLEAF>

Fig 1 Old Cyprane MDM advert

Fig 2 Matrx Digital MDM

Fig 3 Accutron Analogue Ultra

Fig 4 Old Cyprane 4-cylinder stand yoke assembly

Fig 5 Universal 4 cylinder stand

Fig 6 Telescoping swing arm bracket

Fig 7 Miniscav

FROM PREVIOUS PAGE>

systems with flexible colour coded medical gas hose.

Demonstrate an ability to engage and disengage supply hoses from gas-specific terminals or self-sealing valves on pipeline regulators. Understand how to change cylinder regulators on smaller systems. Know why the use of hand cream when handling cylinders is prohibited and the effects of grease in conjunction with oxygen. Have a working knowledge of medical gas signage and why it is required.

DEMONSTRATE AN ABILITY TO READY EQUIPMENT FOR USE

Follow an appropriate pre-use checklist for the type of equipment. Turn on medical gases, if appropriate. Clean equipment if necessary. Select and assemble breathing system tubing and connectors correctly. Select appropriate nasal masks for IS session and fit to tubing, ensuring that components such as flapper valves on Porter brown inner liners are intact. Connect correctly to scavenging outlet of whichever type available, ensuring that, for example, the vacuum control block is undamaged and correctly orientated and vacuum line is unkinked. Ensure the reservoir bag is correct and intact (be able to identify why it may not be).

ON COMPLETION OF IS SESSION

Understand how to clean, sterilise or dispose of the breathing system masks and tubing as appropriate. Clean the IS equipment with an appropriate method and materials (and how to identify suitable cleaning materials and methods) according to type. Turn off medical gases – if appropriate.

DESIGNATED PERSON

Demonstrate an awareness of why there needs to be a named person to manage the IS equipment and who is responsible for overall management including ordering of sundry ongoing equipment requirements and management of medical gases (if appropriate). Understand why regular OEM maintenance of equipment is necessary. Many problems are caused by a lack of understanding of these basic points, all of which are entirely preventable if correct training is received.

CLEANING OF INHALATION SEDATION EQUIPMENT

Cleaning and sterilisation of equipment, either pre-use or post-use, is an important factor in patient care. However, modern excessive cleaning methods are causing extensive damage to inhalation sedation equipment – both hardware such as flowmeters and stand and also breathing systems. The damage caused has serious cost implications as it is expensive to remedy, costing the NHS unnecessary expense in a time when budgets are stretched and even reduced. This is labelled as equipment misuse and therefore not covered under normal maintenance contracts.

DAMAGE INCLUDES:

1. Flowmeters – cleaning liquid in the medical gas flow tubes, tide marks behind the Perspex covers and internal damage to the seals, valves and diaphragms. Pitting of metal and etching of the perspex cover.
2. Mobile four-cylinder stand – damage to bodok seals and pitting of metals.
3. Miniscavs – external pitting of case and damage to internal components – pump diaphragms etc.

This list is not exclusive, but serves to illustrate the type of problems reported.

RECOMMENDATIONS FOR CLEANING – DOS AND DON'TS

Do:

- Ensure that any pre-moistened wipe is only just damp – i.e. squeeze to remove any excessive liquid prior to applying.
- E-cloths can be used but care must be taken to ensure there is no excessive moisture in the cloth prior to applying to equipment.
- After wiping over, polish the equipment with a soft clean cloth or paper towel to remove any remaining moisture.
- Follow manufacturer's guidance for cleaning/autoclaving.

Don't:

- Spray onto the equipment.
- Use any cleaning material containing bleach or alcohol.
- Use excessive moisture of any kind.
- If using a wet and foaming type of wipe – Clinell is an example – ensure that it has first been squeezed to remove excessive moisture. Alternatively, source another type of wipe that is not as wet/foamy.

MAINTENANCE

It is important to understand the need for regular OEM (Original Equipment Manufacturer) maintenance of this equipment. MHRA guidance now states that manufacturer recommendations must be observed. A well-established pattern (since the 1960s) exists in the UK of one service visit per annum. A more frequent service interval may be required in departments with high equipment use. Teaching establishments, for example, are often serviced six-monthly; however nothing more frequent should be needed.

Some type of equipment, e.g. Miniscav (Fig 7) may require something a little different. Year one would be an on-site service check. In year two, the unit is 'service exchanged'. This effectively means the unit is swapped out, being replaced with a fully serviced/upgraded unit. This principle was developed for anaesthetic vaporisers – a unit of equipment that is impossible to service on site and works extremely well.

Regular maintenance will ensure the equipment is functioning correctly. It is necessary to be certain that the flowmeter is within calibration tolerance and all fail-safes and hypoxic guards are intact and working.

Inhalation sedation is an incredibly safe procedure with no recorded episodes of morbidity when using dedicated, regular OEM-maintained units.

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ABOUT THE AUTHOR
Janet Pickles is the chairwoman and founder of RA Medical Services and is passionate about the subject of relative analgesia and its varied aspects. For more information, contact her on janet@ramedical.com or visit www.ramedical.com

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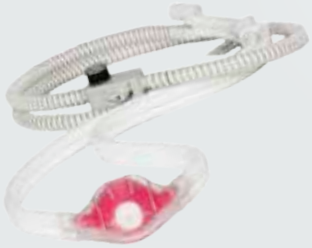

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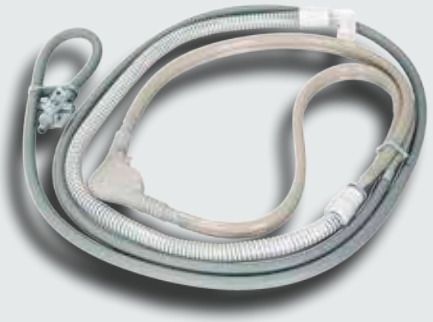

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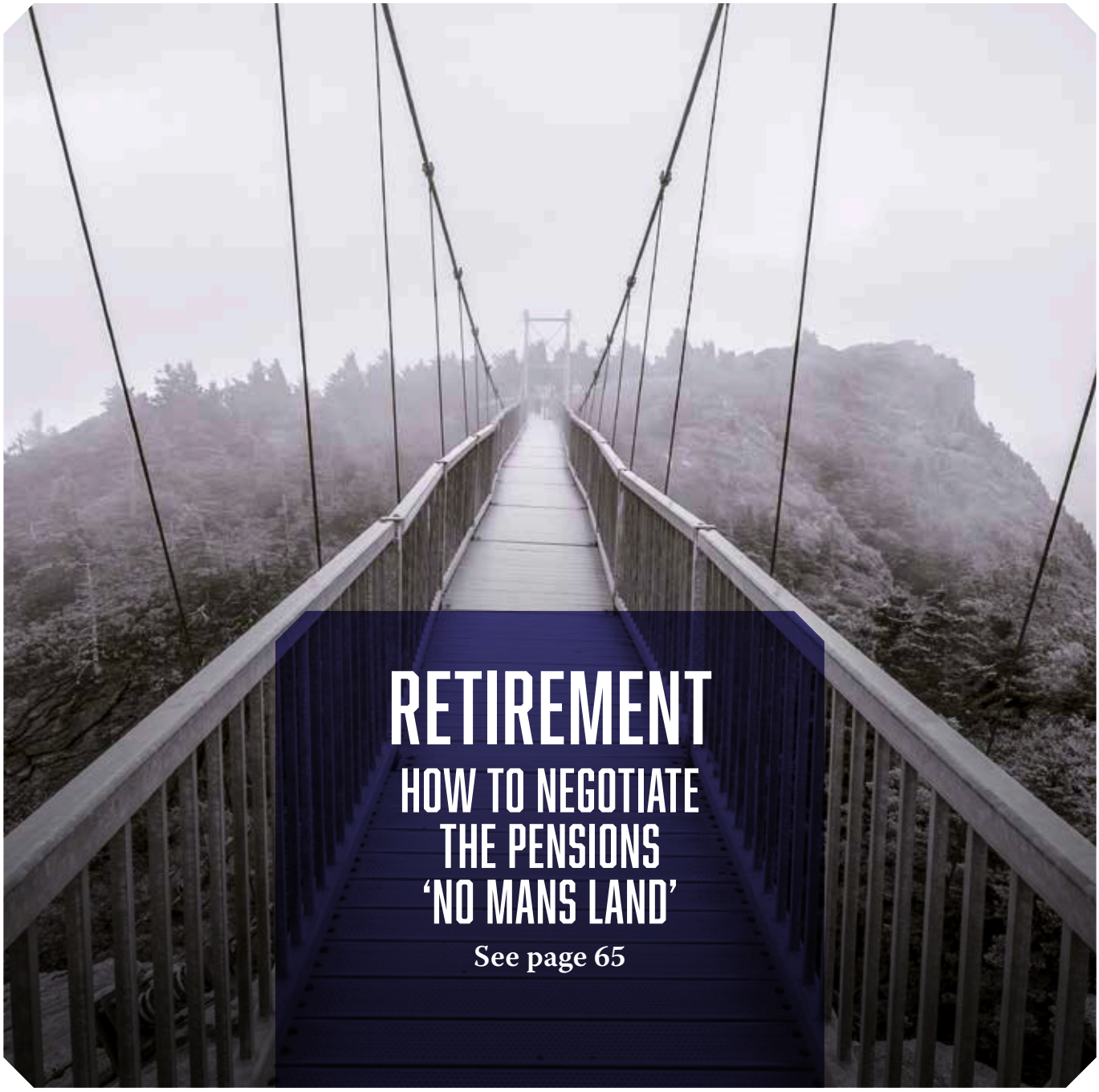

RETIREMENT

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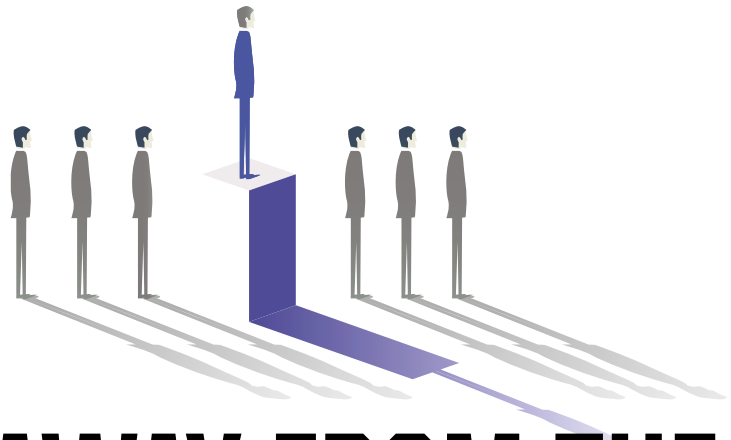


SAIL AWAY FROM THE SEA OF SAMENESS

ADAM MORGAN TALKS ABOUT STANDING OUT FROM THE CROWD AND HOW IT IS ESSENTIAL TO GO BEYOND WHAT EVERYONE EXPECTS

ADAM MORGAN

I recently taught a class where I spoke about the sea of "average". Now, I know no-one wants to be average, yet so many of us get caught up in the trap of "playing it safe" and not truly utilising every ounce of potential that we have. Let me explain:

Have you ever met someone who has so much potential and yet seems to do nothing significant with it? Often it is so easy to see that happen to someone in our world, in our office or friendship circle, that we fail to see the exact same thing happening to ourselves.

I am here to tell you that opportunity is truly everywhere for those willing to step out, take a risk and break away from the social norms that surround us today.

People are looking for real and authentic people to do business with; for people with energy and passion who have belief and conviction to break away from the norm and be someone who adds value and energy to those around them. And, believe me, that goes beyond doing what is expected while "on the job".

I challenge you today, step out of your comfort zone and talk to the person standing next to you at the bus station, train station, airport security line, or coffee queue at your favourite coffee house. Engage. Participate. Be someone who brings energy to the table.

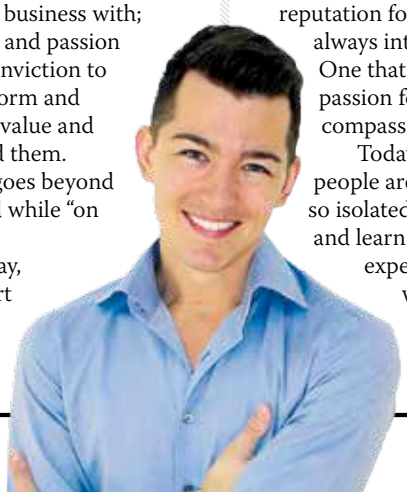
In times of uncertainty where it is hard to stand out from the crowd – breaking away from the silence and lack of communication with those around us makes such a massive difference. Give a compliment and take an interest in someone else's life even if just for a fleeting moment. I have met so many wonderful and interesting people by just reaching out, taking a leap of faith and opening my mouth to speak to those around me.

We should also engage with those in our own teams and encourage them to do the same with our customers, other staff members and team mates. Build a reputation for being the team that is always interested in its customers. One that is renowned for its passion for excellence as well as its compassion and friendliness.

Today, more than ever before, people are so connected and yet so isolated – let's buck the trend and learn how to create seamless experiences for our customers when they visit us that goes beyond what everyone else does – and that does not involve spending money or wasting resources. I guarantee that if you do open up and break away from our social norm of keeping ourselves to ourselves that you will find a world of opportunity in business and relationally.

My business is built on my reputation and yours is the same – what are you and your team known for right now?

Go ahead, try it – take the risk, use your potential to get to know your team mates, customers and even the people who accompany your customers! You will be amazed at the opportunities that will surface by taking an interest and reaching into someone else's life...



ABOUT THE AUTHOR

Adam Morgan is an award-winning training specialist who teaches businesses and individuals how to grow and create greatness in their marketplace. His fresh approach and dynamic style make him highly popular with companies around the world.

Adam works specifically with practices throughout the UK and helps dental teams to raise the bar, be more successful and achieve their goals and vision. With more than a decade of expertise working with many of the leading hotels and resorts, retailers, financial institutions of the world, he is a talented consultant able to deliver results.

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PENSION PLANNING

BETWEEN DECIDING TO RETIRE AND ACTUALLY DOING SO CAN TAKE UP TO TWO YEARS, SO CAREFUL CONSIDERATION OF THE OPTIONS IS ESSENTIAL

JON DRYSDALE

Often for dentists, the most frustrating aspect of retirement is the 'no-man's-land' that lies between making the decision to retire and putting the plan into action. Astonishingly, this can stretch to two years, especially where the sale of an NHS practice is involved. With this in mind, factors in the decision-making process should be considered as soon as possible. The key to things going smoothly is planning and preparation.

The timing of retirement has historically (and arbitrarily) been at the age of 60 – when earned income can be replaced by the NHS pension. However, in recent years, a far more flexible approach has been adopted, underpinned by the steady rise of goodwill values. I expect 'flexible retirement' is here to stay, especially now that the NHS retirement age is stretching ever further into the future (the state pension age is 68 for a newly qualified dentist). So what do I mean by flexible retirement and how in practice can this be achieved?

24-HOUR RETIREMENT

This means having your cake and eating it in relation to the NHS pension because you take your pension and continue to earn NHS or non-NHS income. There are some basic rules that surround this, such as the need to take a 24-hour break when your pension starts and not working more than 16 hours in the first month. As part of your practice sale agreement, you may intend (or have) to continue as an associate, albeit on a much-reduced output. Supplementing NHS pension income with continuing employed income is an excellent way of deferring drawing on other savings. Most associate agreements will only require a three-month notice period so no long-term commitment is required.

EARMARKING PRACTICE SALE PROCEEDS

Your practice is probably worth more than you think. Goodwill values in Scotland have likely doubled in the last decade – perhaps more so, depending on location. The favourable capital gains tax exemption known as entrepreneur's relief (ER) will apply to your business sale and to any related property sale. Care needs to be taken here if you intend to sell the property at a later date, as this may not qualify for ER. The effective rate on the gain is 10 per cent, a significant reduction on the prevailing capital gains tax applied to non-business assets. So, the higher value and lower tax bill might just enable you to earmark capital for 'early' retirement.

UNDERSTAND YOUR INCOME AND EXPENDITURE

Dentistry is undoubtedly a well-paid profession and you may be guilty of not knowing the minutiae of your monthly outgoings. Such details come into sharper focus when income is more finite. Establishing a true picture of likely retirement expenditure should involve more than a list of direct debits and include a realistic allowance for the expense associated with increased leisure time. However, you may also spend less than you initially think, especially when you strip out work-related costs such as insurances. Either way, working out a budget is important.

POSITION YOUR PENSIONS FOR 'DRAWDOWN'

The chances are that you will have funded longer-term savings vehicles such as ISAs and/or personal pensions. The allowances for these have been relatively generous for many years and it is not uncommon for the overall pot to run into several £100,000s. How you take income from these needs some thought. Annuities, where you exchange your pension fund for a fixed income, are rarely the right method of taking pension income. Pension drawdown, where the income tap can be turned on and off as required, is a far more flexible approach. Most personal pension contracts don't allow for drawdown, so you will need to take steps to transfer to the appropriate arrangement. Personal pensions also allow for 25 per cent of the fund to be withdrawn tax-free, but partial withdrawals are only facilitated through the correct plan.

ABOUT THE AUTHOR

Jon Drysdale is an independent financial adviser for chartered financial planners, PFM Dental, which has offices in Edinburgh and York. Visit www.pfmdental.co.uk for more information.

MITIGATE THE LIFETIME ALLOWANCE TAX CHARGE

Taking pension income (NHS or personal) triggers a test of the HMRC's Lifetime Pension Allowance (LTA), a limit on the combined value of your pensions. If you don't know how close your likely pension income is to this limit, don't leave it to chance – find out in advance. Steps can be taken to reduce or entirely avoid an LTA charge – a tax for exceeding the limit. HMRC has transitional protection rules for the LTA, but they are relatively complex, especially where the NHS pension is concerned. I strongly advise seeking professional advice from someone familiar with these complexities.

NEVER TOO SOON TO START

It's never too early to plan for retirement. Decisions taken early, together with a constantly developing action plan, will help you get the most from your post-dentistry years. To help dentists consider all the issues relating to retirement, PFM Dental has run retirement planning seminars for a number of years. There is one in Edinburgh on 19 October (2pm-5pm). For details visit bit.ly/PFMretire

GIVING THEM THE BEST FINANCIAL START IN LIFE

ALASDAIR MACDOUGALL FROM MARTIN AITKEN FINANCIAL SERVICES EXPLAINS HOW PROVIDING FOR YOUR CHILDREN CAN BE TAX EFFICIENT

It's often said that, while we may not be able to prepare the future for our children, we can at least prepare our children for the future.

With this thought in mind, many parents, grandparents, uncles and aunties are looking for ways to save and contribute towards the big financial events in a child's life – schooling, university, marriage or even a deposit for a first property.

If my own experience of parenting is anything to go by, it's also better to start sooner rather than later. One moment you are bringing them home from the maternity ward, the next you are dropping them off at their halls of residence.

Here are some tips and suggestions for you to consider. You can continue the conversation by sending me an email and I'll arrange a time to meet up with you to create an investment plan for your children. If you want to do some further reading, there are more ideas on maco.co.uk: Tax Planning for Life 2016-17.

TAX-EFFICIENT SAVING

Junior ISAs (JISAs) are a tax-efficient way to build up savings for a child. Contributions of up to £4,080 annually (tax year 2016-17) can be saved tax-free into a cash JISA or a stocks and shares JISA.

Generally speaking, they work in a similar way to adult ISAs in that interest on cash is paid tax-free, and there's no capital gains tax (CGT) to pay on stocks and shares on encashment. They can also be transferred between providers to get a better return. However, unlike adult ISAs, children can't take out a new JISA every year.

One significant advantage of a JISA is that once it's been opened by the parent or guardian, anyone can make contributions, including grandparents, friends and family.

> "ONE MOMENT YOU ARE BRINGING THEM HOME FROM THE MATERNITY WARD, THE NEXT YOU ARE DROPPING THEM OFF AT THEIR HALLS OF RESIDENCE"

From April next year, any young adult under 40 will be able to open a new Lifetime ISA (LISAs) with a 25 per cent annual bonus paid by the Government on every £1 invested up to an annual contribution limit of £4,000. Contributions can continue up to the age of 50 and funds can be withdrawn tax-free from age 60, or earlier for the purpose of buying a first home.

If, however, you don't want to give direct, you could consider a trust. With a little planning, you can transfer asset(s) into a trust with no CGT or IHT consequences and it also reduces your taxable estate. There are, however, some additional tax charges and costs related to trusts that may be applicable.

THINKING ABOUT PURCHASING PROPERTY FOR YOUR CHILDREN?

The Help to Buy ISA for first-time buyers will provide a Government bonus of £50 for every £200 a first-time buyer saves, up to a maximum of £3,000 for those who save at least £12,000 for a deposit to purchase their first home. The scheme is available per person, rather than per household, meaning that couples or families looking to buy together will be able to receive multiple bonuses.

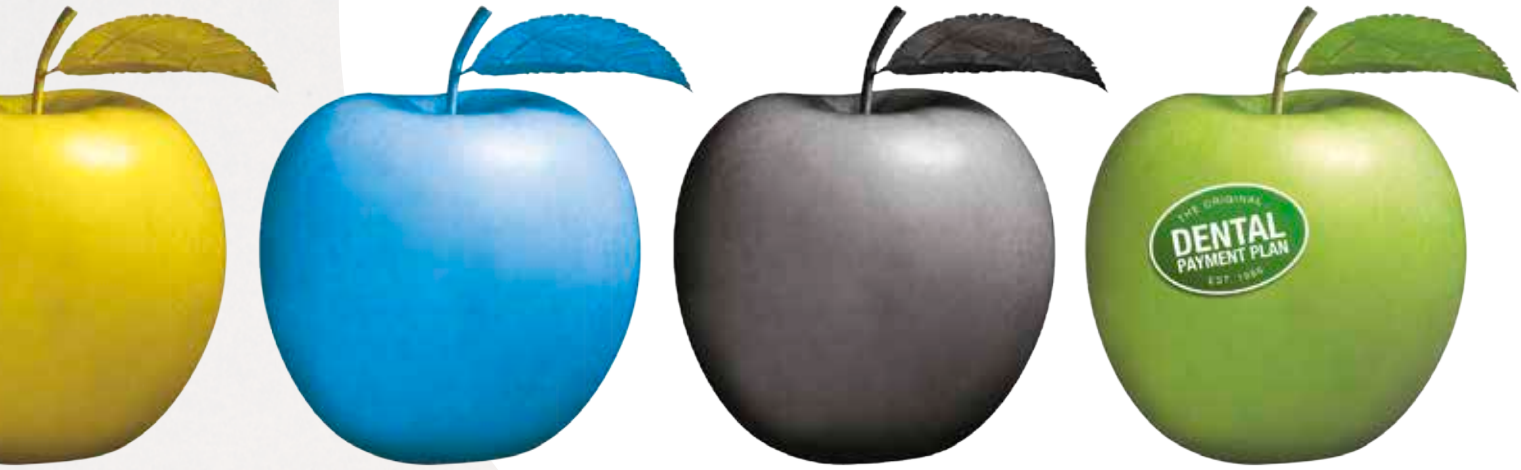
GIVING GIFTS

You can gift a total of £3,000 per year to your children, which will be exempt from IHT. If you didn't make a gift of this kind in the previous tax year, the threshold rises to £6,000. A married couple doing this for the first time this year can combine their allowances and gift up to £12,000 to their children.

To celebrate the marriage of your children, you could consider giving the happy couple a gift of up to £5,000, or up to £10,000 if from a couple, which will again be exempt from IHT. Grandparents can also gift the happy couple up to £2,500 (£5,000 if from a couple) to reduce their IHT bill.

Using your pension pot could also be a tax-efficient way of raising funds. Parents can take up to a quarter of their pension fund as a tax-free lump sum when they reach 55. While few will be able to retire this young, it's possible to take the lump sum and continue working. If this is too late, then there are other options available to you.

MORE INFO
Alasdair MacDougall is a director of Martin Aitken Financial Services. To contact Alasdair, email amd@maco.co.uk



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Thinking of selling up? Timing is everything

PUTTING YOUR PRACTICE ON THE MARKET IS A BIG DECISION, SO MAKE SURE THE CONDITIONS ARE RIGHT, SAYS PAUL GRAHAM

Deciding when to sell a dental practice is one of the biggest decisions an owner will make in their career, therefore they will want the market conditions to be the best possible, with premium prices being paid and an abundance of buyers ready and willing.

Market activity in Scotland shows no signs of abating, with demand from buyers exceeding supply. We often see achieved values being within the market guidelines/average, both as a multiplier of Net Annual Adjusted Profit (EBITDA) and as a percentage in the pound, although within certain circumstances, multipliers and percentages are at significantly higher levels depending on the demand of the practice in question. Just this month, Christie & Co completed on the sale of a multiple surgery site in Fife with a record sale/multiple being achieved.

Demand across the central belt of Scotland is obviously the strongest, in particular around Edinburgh and Glasgow.

The practices we've been recently instructed on in these areas have been marked 'Under Offer' after just a couple of weeks on the market, attracting multiple bids. However, since the turn of the year, we have also brokered sales in other areas including Inverness, Perthshire, Fife and Dumfriesshire.

The majority of banks appear very willing to lend to the dental sector and we continue to see competitive terms being offered to woo operators away from existing lenders or to attract new business.

Most banks will assess cases on an individual basis and continue to have regard for loan-to-loan value and interest cover.

Where this is supported by appropriate advice from professional valuers, they continue to lend.

MORE INFO
Paul Graham is an associate director at Christie & Co. To discuss how Christie & Co might help you achieve your future plans to buy or sell a dental practice please contact Paul on 0131 524 3416.

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Define your practice goals and rediscover your zest

USE YOUR TIME ON THE SUNBED TO REINVIGORATE YOUR ENTHUSIASM

IAN MAIN

As our minds wander towards the holiday season it is often a time of reflection on how our practices are performing. I regularly meet practice owners who feel "battle weary" and have lost their zest for practice after continual challenges from all angles be they team, patient, financial, personal or regulatory pressures. It can be a tough journey running your practice and it is understandable that you may face exhaustion and deflation from time to time.

It's important that you have clearly defined goals for the practice and yourself. Without these in place, you miss out on the enhanced focus opportunity which comes with this clarity and, importantly, your team may be in the dark on how they "fit in" to your ambitions. You lose out on their effective "buy in" and miss opportunities to celebrate success when you hit milestones along the way.

We have found a clear link between the high-performance practices we act for and their clarity of goals. So why leave your future success to chance? Make sure you use the time on the sunbed to recharge and reinvigorate your enthusiasm for the future, and with the "head space" this time allows why not attempt to set out some SMART goals for the short, medium and long term? You have my promise you will not regret it!

If you find it hard to articulate your goals, I'd love to help you facilitate these. Just get in touch and I will gladly spend a few hours in your company at my cost, with no obligation to help you set out your "pathway to success".

I wish you every success.

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

Take care of your employees

MAKE SURE YOUR STAFF KNOW THEIR EMPLOYMENT PROTECTION RIGHTS IN THE EVENT OF A PRACTICE SALE OR ACQUISITION

JOHN COWAN

Where you are involved in the sale or purchase of a dental practice, attention (understandably) tends to focus on the commercial agreement to be reached between buyer and seller. However, it is important for both parties to be mindful of the obligations imposed by the Transfer of Undertaking (Protection of Employment) Regulations 2006 (TUPE).

TUPE provides employees with basic minimum rights, which both seller and buyer must observe so as not to be at a risk of claims being raised before the Employment Tribunal. In summary, TUPE provides for:

- Every employee who is employed within the practice has the right to have their employment automatically transfer from the seller to the buyer, with continuity of employment being preserved.
- Every employee's terms and conditions of employment must be maintained by the purchaser after the transfer has taken place.
- The seller has an obligation to provide specified information (Employee Liability Information) to the purchaser in regards to the employees who will transfer.
- The seller (and to a more limited extent, the purchaser) has an obligation to inform and consult with employees about the transfer of their employment and any measures which are proposed by either seller or purchaser in respect of the same. Any consultation needs to be done through elected employee representatives or a recognised trade union where there are more than 10 employees who will be subject to a transfer.

While there are limited exceptions to the rules set down in TUPE, they will apply in the vast majority of transactions involving the sale of a dental practice. While employees can object to a transfer through their own choosing, if an employer (whether seller or purchaser) does not comply with their TUPE obligations and that results in the termination of an employee's employment, they run the risk of being on the wrong end of an unfair dismissal claim.

We at Miller Samuel Hill Brown LLP regularly advise clients (both sellers and purchasers) on employment law matters and have a great deal of experience in assisting clients comply with their employment law obligations under TUPE when buying or selling a dental practice. For detailed advice, support and assistance, get in touch.

MORE INFO
John Cowan is a partner in Miller Samuel Hill Brown LLP. To contact John, email jbc@mshblegal.com

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UNDER THE SHADE OF THE LINDEN TREE

FIFE PRACTICE BENEFITS FROM A EUROPEAN FOCUS AS GERMAN DENTIST STEPHANIE KERK SETS UP ON HER OWN

In eastern Germany, where Stephanie Kerk grew up, the linden tree is the heart of the local community. Typically situated in village squares, the tree provides a focal point for locals to gather and share stories under the protection of the tree's branches. The tree's flowers, leaves, wood and charcoal have been used for medicinal purposes for centuries, being used to treat anything from coughs and colds to liver and gallbladder disorders.

So, when Stephanie and husband Peter were deciding on a name for their new dental practice in Dunfermline, they had no doubt and the Linden Tree Dental Lounge was born.

Stephanie studied at the prestigious Heidelberg University in Germany and, during a year out in Newcastle where she was studying English literature, she met her future husband Peter, who was studying history. Upon graduation in 2003, the couple were looking to start their new life together and, having met in the fell walking society they decided that Scotland, with its beautiful countryside and spectacular Munros, would be the perfect place to set up home. Stephanie subsequently applied for seven associate jobs and, amazingly, was offered all seven jobs. She decided to join a practice in Dalgety Bay in Fife and, four years later in 2008, she moved with the practice principal when he relocated the short distance to Dunfermline.

After spending more than 10 years as an associate, Stephanie decided in September 2014 that the time was right to open her own practice. The couple attended a "practice boot camp" held by a firm of dental practice consultants. Stephanie said: "We got great advice during the boot camp event and they helped us to figure out what our options were. They gave us great support with our search for premises and they have even helped us with marketing for the new practice."

Stephanie explained that they only looked at two potential sites, before settling on their current premises at Masterton Business Park, which is situated near junction two of the M90. The unit that Stephanie and Peter identified had lain empty for a number of years after being built and had never been occupied. Despite a lengthy negotiation with the local council, who initially insisted that the new practice

be situated in or near the town centre, they received the go ahead and got the keys on 3 June 2015. A number of issues outside of their control, including the flooding of autumn 2015 and the closure of the Forth Road Bridge, meant that work didn't start until 14 Feb 2016.

Stephanie had contacted a German architect to design the layout of the unit and, while the unit was slightly bigger than they actually needed, it allowed them the freedom to create a practice with wide hallways and a really bright and open feel. The whole ethos of the practice is geared towards helping patients relax and Stephanie explained that the layout and design are vital components of this.

She said: "The German approach is very holistic, it is about treating the whole patient and the reception and waiting areas are an important starting point to create the right atmosphere. We used the words 'dental lounge' in the name as we wanted to promote a relaxed atmosphere from the moment they contact us to the first appointment and beyond."

The waiting area at the Linden Tree is very much like a lounge in a typical family home, with two comfortable sofas, coffee table and flat screen television. Stephanie explained that, as well as offering the full range of adult general dentistry and NHS for children, the practice also plans to introduce holistic treatments such as massage, podiatry and acupuncture as a means to treating the whole patient.

She said: "We want to take a 20-year view rather than a one to two year view. I think it is important to understand the patient, to look further than just restoring a tooth and look at the reasons for their problems.

"If someone grinds their teeth, we want to fix the reason behind the bruxism, not just fixing the ground down dentition each time."

Stephanie is also one of only a handful of clinicians in Scotland to offer telescopic dentures, or German crowns as they are also known. As the name suggests, this is a predominantly German technique and it provides an incredibly stable removable denture that is not only a viable alternative to implants but has been found to improve stability in patients with periodontal problems.

As the technique relies heavily on the skills of German master technicians, in the past Stephanie has sent her cases to her home country but in recent times she has

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FROM PREVIOUS PAGE>

found a master technician closer to home.

Bianca Mueller is a German-trained master technician based in Livingston and, at her Ceramic Art Laboratory, she has the required skills to produce telescopic crowns. Stephanie said: "I was very excited when Bianca set up her laboratory as I had previously sent lab work for these dentures to Germany and it just wasn't efficient or cost-effective, so I stopped doing it. Now that we have a master technician on our doorstep we can offer telescopic dentures and get a quick turnaround and consistently excellent results."

Other crown and bridge work is undertaken by Southern Cross Dental Laboratory.

Stephanie said that she is keen to help patients better understand their oral health and their treatment. She said: "We are aiming to start a patient education programme so that patients can take control of their own oral health. We don't want to be prescriptive and just tell patients what to do. They need to really understand why what we are telling them is important, give them all the facts and let them be partners in their care rather than just passively accepting what we tell them."

The practice currently features one dental surgery and a hygienist surgery, kitted out with new Denstply Sirona C2+ chairs, with a Power Tower compressor and Mini Vista x-ray scanner from Durr Dental. Their practice has room for two more surgeries when the patient list increases sufficiently, although one of these rooms is also going to be used for the alternative therapies.

Stephanie is currently the only dentist at the practice but she is joined by hygienist Alayne Saleh, dental nurses Rhona Jamieson and Adele Williams and patient co-ordinator Alison Swift. Peter is the practice co-ordinator and, as well as having previous experience in customer service, he is also a trained psychotherapist having ran his own private practice before joining the dental business this year.

Stephanie is delighted with the team she has brought together. She said: "Our focus will always be on the patient as a practice but when we were designing the practice I knew I wanted the staff room and staff areas to be bright and airy as well. As I didn't want my staff to take their lunch breaks in a windowless room, it was important for me that they had natural light.

"Next to our patients, our staff are the most important part of the business and we have a great team at the Linden Tree, with a real family atmosphere."

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WYSDOM PUTS INNOVATION FIRST WITH NEW MANAGEMENT

THINGS ARE CHANGING AT WYSDOM DENTAL TECHNOLOGIES, DEVELOPERS OF THE ICONIC PRACTICE MANAGEMENT SYSTEM

Laurie Trewinnard, one of the original founders, has retired, and long-time consultant to the company, Glenn Wynsor, is the new owner and MD.

Glenn has a wealth of management experience in the dental and general healthcare sectors and he will now be accelerating WYSdom's evolution. With the introduction of new technologies currently under development ICONic is set to become the best way for dentists to maximise their practice efficiency, and profitability.

Glenn said: "WYSdom was one of the original system suppliers in the UK and to connect to the NHS. It's a company with a great heritage, and an exciting future.

"The innovations planned for the next 12 months will put WYSdom where it can be of most value to the profession – as the leading independent supplier."

WYSdom's ICONic dental practice management software puts you in control of your whole business. From the highly adaptable patient records and appointment booking system through to the unique charting and treatment planning, ICONic delivers sophisticated management of patient and business information to your practice.

Laborious end-of-day tasks and routine patient contacts can now be triggered at the touch of a button, leaving you to concentrate on improving revenues and profitability.

Utilising the latest techniques and technologies for system management, maintenance and training means that WYSdom provides a level of service that is second to none.

WYSdom dental technologies

MORE INFORMATION
Call the Wysdom sales team on 01908 324 045 today to discuss your requirements.

EXPERTS IN THEIR FIELD

WE CELEBRATE A DIVERSE ARRAY OF DENTAL PROFESSIONALS AND SOME ASSOCIATED PROFESSIONALS IN THIS SPECIAL FEATURE

Scotland is blessed with some of the finest dental professionals in the UK and over the next few pages this feature is designed to celebrate their expertise.

Many of the names and faces will be familiar to many of you as you have worked with or come into contact with each other during the course of your careers. However, there may be a few new faces that you don't know about and hopefully the information in this feature might lead to the start of a new professional relationship.

While there are plenty of specialist dentists featured on these pages, like consultant oral and maxillofacial surgeon Martin Paley and prosthodontis Kevin Lochhead of Edinburgh Dental Specialists, periodontist José Armas from Clyde Munro and the team of specialists at Blackhills Clinic, not to mention the specialist orthodontists at Beam and Park Orthodontics, this feature also highlights a range of other experts.

We have mail solutions specialist Brian Graham of CFH Docmail, specialised dental recruitment agency professionals April East and Angela Milligan from PS New Job, as well as Patricia Munro of Strictly Confidental who's knowledge of the Scottish dental scene is second to none. They are joined by MDDUS head of dental division Aubrey Craig and DTS International's innovation and business development manager Tracey Marsh, facial aesthetic practitioners Heather Muir from Your Face – Facial Aesthetics and Aisling Hanly from Enhance Facial Aesthetics, not to mention implant dentist Tariq Ali from the Centre for Implant Dentistry.

The dental professionals and associated companies listed on these pages highlight the high quality and diversity of Scottish dentistry and we are proud to be able to celebrate them in this way.

MARTIN PALEY AND KEVIN LOCHHEAD

EDINBURGH DENTAL SPECIALISTS

Mr Martin Paley (consultant in maxillofacial surgery, GDC 64778) and **Dr Kevin Lochhead** (specialist in prosthodontics, GDC 62945) are pleased to offer the new "Quad Zygoma" implant concept for patients with extreme bone loss in the maxillae.

With this development of the original zygomatic work by Professor Branemark and the "All-on-4" concept, patients who were previously thought of as unsuitable for dental implant treatment are now able to have four zygomatic implants placed and loaded with a transitional, or final, bridge on the same day. There is no need for any other implants, sinus lifts or block grafting.

The patients most suited will have been struggling for years with a moving upper denture, usually requiring the use of dental fixative many times a day. They will have been suffering not only socially and psychologically, but also nutritionally being unable to eat a full and healthy diet.

We are offering this treatment concept in conjunction with the general anaesthetic facilities at the local Spire hospital and our onsite highly experienced implant laboratory

Martin and Kevin are happy to discuss, with you, any patients who you feel might benefit from this treatment concept.

MORE INFORMATION

For more information, call 0131 225 2666, or visit www.edinburghdentist.com

CLYDE MUNRO
DENTAL GROUP

JOSÉ ARMAS AND CLIVE SCHMULIAN

CLYDE MUNRO

Dr José Armas (GDC 81959) is a GDC-registered specialist in periodontics and has been part of the department of restorative dentistry at Glasgow Dental Hospital and School since 2011.

After qualifying from Glasgow Dental Hospital and School, José completed a range of hospital training posts. In 2007, he was appointed as a specialist registrar in periodontics at Glasgow Dental Hospital and, in 2010, he achieved his membership in restorative dentistry from the Royal College of Surgeons of Edinburgh, specialising in periodontology.

José is also director of the School of Hygiene and Therapy at Glasgow Dental Hospital and School, where with an outstanding team they are committed to providing high standard undergraduate training of hygienist and therapist graduates.

José specialises in the provision of advice as well as treatment of all periodontal and peri-implant diseases, paying particular attention to the more advanced periodontal cases, such as those with aggressive and severe periodontal disease with or without concurrent medical factors directly affecting the periodontal tissues. He also offers a wide range of periodontal mucogingival hard and soft tissue surgical procedures for severe single/multiple gingival recession, crown lengthening, drug-induced hyperplasia. José is also able to provide advice and treatment for the acute and chronic episodes of peri-implantitis and patients requiring surgery associated with osseointegrated implants.

Based in Glasgow, José is interested in establishing working relationships with referring dentists who wish to develop their own skills and knowledge base to improve the quality of care to their patients within the periodontal field.

Clive Schmulian (GDC 68815) graduated from Glasgow University in 1993, and began developing his clinical skills in general practice in Glasgow and Lenzie. Having made the decision to run his own dental practice, Clive worked at a steady pace challenging himself in the acquisition of further clinical skills such as the Fellowship of the Faculty of General Dental Practitioners as well as diplomas in sedation and implant dentistry.

Clive has always invested in the latest equipment and Clyde Dental Centre in Glasgow was the first dental practice in Scotland to install a CBCT scanner, in 2005. Thanks to this early investment, Clive has many years of experience working with referring colleagues, delivering high definition and low dose scans. Measuring each patient's unique bone characteristics and anatomical features allows referring dentists to carefully plan treatment.

Clyde Dental Centre now has two CBCT scanners in its advanced dental imaging suite, capable of taking small, medium and large volume 3D scans as well as 2D images – OPT/panoral views and lateral cephs. While the majority of the CBCT scans taken are for implant planning, an increasing number of colleagues are referring patients for assessing oral surgery, complex endodontic cases and orthodontic diagnosis.

Clive is pleased to provide training and support on request for any referring dentist requiring software and planning advice. He also accepts referrals for digital imaging at the Clyde Dental Centre in Glasgow, part of the Clyde Munro family.

MORE INFORMATION
Please visit the I-Refer website at www.i-refer.co.uk

BLACKHILLS SPECIALIST DENTAL CLINIC

In this modern era of dentistry, it is increasingly difficult for one person to truly be considered an expert in anything other than a very narrow aspect of dental care. At Blackhills Specialist Dental Clinic, a team of seven GDC-registered specialists work together to ensure that expert adult dental care is delivered across a broad range of treatments and disciplines. It is important for the reputation of the referring dentist that the dental care received is of a high standard, appropriate to the needs of their patient (the regulator also requires this).

Don't take chances with your complex, challenging or problematic cases (or just treatments you don't wish to undertake); refer with confidence to the specialists at Blackhills Clinic.

Visit www.blackhillsclinic.com and click on "refer a patient" (top right), complete the online referral and receive an instant email reply confirming receipt, together with a copy of the referral for your records. We aim to contact all patients within one working day to arrange a suitable appointment. We will write to you with a report of the outcome of the consultation and always return the patient to you for their ongoing dental care after completion of the specified item of treatment.

Whether it is implants, restorative or prosthodontic dentistry, endodontics, periodontics, oral surgery or CBCT, share the care with a specialist.

MORE INFORMATION
For more information, visit www.blackhillsclinic.com

BRIAN GRAHAM
CFH DOCMAIL

Brian Graham, is the operations manager at CFH Docmail, Livingston, the leader in providing the hybrid mail solution used by dentists, doctors and opticians for their bulk recall mailings and general post.

Brian said: "NHS practices are under increasing pressure to reduce budgets while achieving challenging targets. We are focused on creating solutions which help our customers improve communication while cutting costs.

"Docmail allows busy admin staff to upload their database and letter and, at the touch of a button, print, enclose, address and mail for less than the cost of a second class stamp. Docmail is fully ICO approved, 100 per cent IG Toolkit and ISO27001 accredited.

"Despite a move online, our dental clients report over a third of patients prefer to receive a printed letter and that response rates outperform those using other forms of communication. However, to ensure that patients can receive reminders and information in the way that suits them best, we have launched Dotpost – our secure online document delivery and depository portal. The service is free to use and allows organisations to send mail and documents to a secure online ISO/IEC 27001:2013 Dotpost account. Users can elect to receive the content via conventional post, via the web or secure email.

"It also includes modifications designed to meet the accessible Information and e-health targets while taking NHS Scotland one step closer to a paperless service. Dotpost is available via the website and through both Android and iOS apps.

"This method of delivery has no set-up cost and each mailing is 10p. Documents are stored and available for future reference reducing the incidence of requests for duplicate information."

MORE INFORMATION
For more information, go to www.cfh.com or call 01506 462 468.

ANDREW MCGREGOR
PARK ORTHODONTICS

Andrew McGregor (GDC 80505) graduated from Glasgow Dental School in 2002 and went on to specialist training in orthodontics in 2007 at the University of Newcastle upon Tyne. He worked in hospitals and family dental practices for five years before moving to Australia to teach dental students at the University of Sydney.

In 2010, he attained his MSc in orthodontics along with the MOrth qualification from the Royal College of Surgeons in Edinburgh. Since then he has worked at Park Orthodontics in Glasgow's West End and bought into the business in 2012. Over the last three years, Andrew and his team have transformed the practice from a purely NHS orthodontic provider into a modern clinic that offers all types of orthodontic treatment.

His major area of interest and growth has been in digital appliances whereby patient's malocclusions are set up using computer software.

Andrew has found the main advantage of digital orthodontics is that lingual fixed appliances are now producing results comparable to traditional labial appliances.

MORE INFORMATION
To find out more, call 0141 332 5107 or visit www.parkorthodontics.co.uk

AUBREY CRAIG
MDDUS

Aubrey Craig qualified from the University of Dundee in 1987 (BDS) and has worked in hospital posts and as an associate and principal in general dental practice. He gained an FDS from the RCPS Glasgow in 1991, an MPhil in medical law from the University of Glasgow in 2001 and an MBA from Glasgow Caledonian University in 2009.

Aubrey worked as a partner in an NHS vocational training practice in Glasgow from 1994 until 2009 and is a former clinical teacher in restorative dentistry at Glasgow Dental Hospital and School. Aubrey joined MDDUS in January 2006 and took on his role as head of dental division in 2009. With more than a hundred years' experience assisting members, MDDUS offer dentists access to occurrence-based professional indemnity as well as access to unlimited settlement of damages and uncapped legal costs.

The combination of our mutual status, lifetime protection and flexible use of discretion in our members' interests gives greater protection than the commercial alternatives available. Discretion allows us the flexibility to provide assistance and meet claims which an insurer may very well turn down.

Aubrey and his team of experienced dento-legal advisers also provide assistance with patient complaints, referrals to the GDC as well as the myriad dento-legal and ethical problems that present to every practitioner.

MORE INFORMATION
For more information, visit www.mddus.com

HEATHER MUIR
YOUR FACE – FACIAL AESTHETICS

Heather Muir (GDC 74294) qualified from Glasgow University in 1998. She has more than 13 years' experience in facial aesthetic treatments and a masters degree in non-surgical facial aesthetics from the University of Central Lancashire. She is fully qualified to treat wrinkle relaxing injections, dermal fillers, chemical peels, dermal rollers, PRP, laser and cosmeceuticals.

Heather was previously a trainer with Med Fx and Medics Direct teaching peels, toxins, fillers and skin health courses and she is currently mentoring practitioners in advanced techniques.

She feels passionately about the changes that can be made with non-surgical aesthetics and the difference that it can make to patients' confidence.

Heather is currently practising at Uddingston Dental Care and the Scottish Centre of Excellence in Aesthetics in Glasgow.

MORE INFORMATION
To find out more, visit www.uddingston-dentalcare.co.uk/facial-aesthetics

TARIQ ALI
CENTRE FOR IMPLANT DENTISTRY

Tariq Ali (GDC 74600) has been placing implants for almost 10 years. Starting off treating his own patients, he soon realised the added implant benefit he and his team could offer other colleagues and their patients. And so, the Centre for Implant Dentistry, a referral-based implant practice in Glasgow, was established. Many referring colleagues have found the service offered to be of great value. Dr T Bhatti BDS, said: "I know that Tariq and his team will always look after my patients. He will let me know what is happening with the patient and ask me to do any other treatment that is needed. Patients always comment on his professionalism and they always know what is involved."

Tariq qualified in implant dentistry from the FGDP Royal College of Surgeons and accepts referrals from dentists for all types of implant work. He is involved in teaching the restorative aspect of implant therapy and runs courses (Ultimate Implant Restorative Programme) so that referrers can become involved in their own patient's treatment in a true partnership role.

Five reasons you should refer to Tariq at the Centre for Implant Dentistry:

1. We only do implants – we only carry out the referred treatment and your patient will always be returned to you

2. Affordable treatment plans for your patients with 0 per cent finance options

3. Practice support including free implant info packs to give to patients

4. Approachable team approach to your patients care

5. Experience the benefits of becoming involved in your patient's implant therapy – restorative training and support.

MORE INFORMATION
Call 0141 772 2841 or email info@centreforimplantdentistry.com

AISLING HANLY

ENHANCE FACIAL AESTHETICS

Aisling Hanly (GDC 73486) is a partner in the multi award-winning Kirriemuir Dental practice. She has been a facial aesthetic practitioner since 2010 and set up Enhance Facial aesthetics in 2011. This has continued to expand over the last few years and offers a wide range of non-surgical injectable treatments and skin care. Aisling was one of the first practitioners in Scotland to be awarded the IHAS quality assurance mark, proving that the premises and practitioner conform to high standards. Aisling is regularly invited to attend advanced masterclasses given by internationally renowned clinicians.

Aisling has recently been appointed as a clinical trainer at the Re-nu training academy in Dundee. The academy run with Kristeen Geddes RGN NIP Ba BSc will offer foundation and advanced training in toxin and fillers to doctors, dentists and nurses as well as bespoke mentoring after completion. Aisling has just completed advanced anatomy training with Dalvi Hummzah in London and, in 2015, Aisling received the award for Dentist Practising Facial aesthetics at the Scottish medical cosmetic awards.

MORE INFORMATION

For more information visit re-nuskinclinic.co.uk

APRIL EAST AND ANGELA MILLIGAN

PS NEW JOB

PS Newjob is a specialised dental recruitment agency offering a professional and comprehensive service at a competitive price. As well as dental nursing and practice management experience, recruitment consultants April and Angela also have more than 15 years' experience in dental recruitment. This means that they have first-hand knowledge of what is required from candidates and what practices are looking for in their prospective employees.

PS Newjob ensures that recruitment is carried out with as little disruption as possible and its consultants are on-hand to provide professional knowledge and expert help at any time.

"At PS Newjob we are passionate about dental recruitment and passionate about finding the perfect person for your practice. We have a large database of candidates who have all either been recommended to us or we have tried and tested them. We make sure that all their registrations and checks are up-to-date and that they have good references before you meet with them."

MORE INFORMATION

To find out more, contact April or Angela who will be able to explain how PS Newjob can help you. The 24/7 telephone number is 07970 964 174 or you can email info@psnewjob.com All information will be dealt with in the strictest confidence

PATRICIA MUNRO

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Strictly Confidental has been operating for more than 16 years within the dental profession in Scotland.

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- Valuation – dental equipment, goodwill, insurance and legal.
- Purchase – acquiring a practice or practices.
- Recruitment – contact us to fill your temporary/permanent vacancy for either an associate (full or part time) or a locum position.
- All of our valuations and meetings are held out of hours and on weekends, to ensure a confidential service is provided.

MORE INFORMATION

To find out more, contact Patricia Munro on 07906 135 033 or 0141 641 3963. Alternatively, email patricia@strictlyconfidental.co.uk

TRACEY MARSH
DTS INTERNATIONAL

Tracey Marsh is the innovation and business development manager at DTS. A digital expert, she has been involved in the digital realm for more than a decade, first realising the impact digital would have in the dental market 13 years ago when she was integral in bringing the 3M Lava Zirconia system to the UK market.

Tracey was on the cusp of the digital revolution, working out the digital workflow and streamlining and perfecting a workable solution for dental labs to embrace the start of the digital age.

Tracey was integral to the introduction of 3Shape into our portfolio, allowing DTS to offer more indications and alternative solutions in order to grow as a business. She works closely with the leading dental scanner and milling machine manufacturers to carry out beta testing on new parts of the software, develop workflows and to resolve any pre-launch issues.

Working with Core3dcentres Global gives Tracey a bird's eye view of digital dentistry worldwide. Twice a year she attends a technical meeting, collaborating with CAD/CAM engineers and software specialists worldwide to discuss and test new materials, strategies, software and machinery.

Tracey continuously develops new strategies and new digital dentistry workflows and has had a hand in the entire process, including scanning, designing, milling and fitting. This experience gives her awareness of the full solution.

She is a regular guest speaker at Barts and Kings College hospitals in London where she educates and trains on the scanners and workflows. Tracey is known for her experience and knowledge in the dental industry, with most dentists and dental labs calling on her to provide support.

She is dedicated to helping people embrace digital dentistry.

MORE INFORMATION
Find out more about DTS by visiting www.dts-international.com

RUARIDH MCKELVEY, RUTH FOWLER AND ELINOR CHALMERS
BEAM SPECIALIST ORTHODONTIC PRACTICE

With Beam managing to successfully entice Ruth Fowler from her hospital position to commit to Beam in the last 12 months we are now also delighted to welcome Elinor Chalmers to the Beam team. This brings Beam's 'Experts in Their Field' Total to three, including Rhu McKelvey. The Beam Team won Services Business of the Year Award at The Courier Business Awards 2015 – as a result of their commitment to both patients and referrers alike.

Ruaridh McKelvey (GDC 70532) graduated from Glasgow in 1995, gained his fellowship in dental surgery with the Royal College of Surgeons in 1998 and then spent three years in specialist orthodontic training in Bristol and Exeter, completing the MOrth in Edinburgh in 2002. Rhu has worked both in practice and as a locum consultant. He has been based in Dundee since 2005.

Ruth Fowler (GDC 63208) graduated from Glasgow in 1988, gained her fellowship in dental surgery with the Royal College of Surgeons of Glasgow in 1992. Her specialist training was undertaken in Dundee and Perth – completing the orthodontic exam in Glasgow in 1995. Further specialist training was undertaken before being accredited for a consultant position in 1999.

Elinor Chalmers (GDC 113738) completed her undergraduate qualification at the University of Glasgow in 2007 and obtained her orthodontic specialty registrar training post at Dundee Dental Hospital. During her training, Elinor completed a masters by research at the University of Dundee. Her study has been awarded the prestigious Arnold Huddart Medal by the Craniofacial Society of Great Britain and Ireland, for her ground-breaking cleft lip and palate research. After successfully obtaining her membership in orthodontics in 2015, Elinor has been working as a locum specialty dentist in orthodontics at the Dundee Dental Hospital and is excited to be joining Beam in July.

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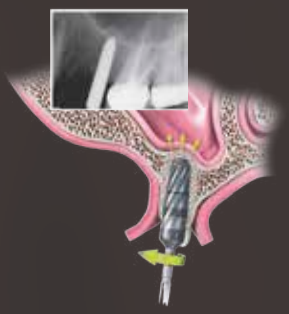

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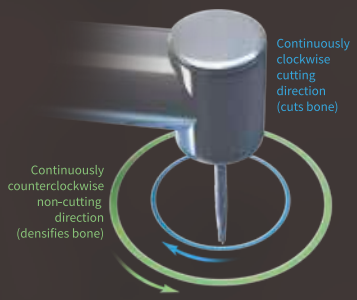

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SHOW IS BACK BY POPULAR DEMAND

THE 2016 HIGHLAND DENTAL SHOW RETURNS TO THE KINGSMILLS HOTEL IN SEPTEMBER

Hosted by dental plan providers Independent Care Plans (ICP) and Highland Dental Plan (HDP), together with co-sponsors Wright Cottrell, the 2016 Highland Dental Show will take place again at the Kingsmills Hotel in Inverness. The event is being held on Friday 9 September and has previously had more than 22 exhibitors and 80 attendees.

Having an event in the north of Scotland is a fantastic opportunity for all those in the dental industry to chat with other colleagues and take advantage of some event-only deals, all without the barrier of long travel.

Exhibitors will include leading suppliers in dentistry materials, equipment and oral hygiene products, along with companies providing business support such as finance, accountancy and legal advice.

Feedback from previous events has been extremely positive from delegates and suppliers alike.

Gary Frost, Ivoclar Vivadent, said: "The venue and organisation of the show were first class. We were kept busy all afternoon as the various members of the dental team visited our stand to discuss our products and educational activities. This led to a number of orders and leads being secured."

Isobel J Mutch BDS, MacDuff Dental Surgery, added: "It proved to be a very informative day catching up with the new dental products and services all in one venue as we rarely have time to spend with the visiting reps in practice these days."

The 2016 Highland Dental Show is a great opportunity to combine with a weekend away at the beautiful Kingsmills Hotel, an attractive mansion house set in

four acres of gardens with Inverness city centre only one mile away. The hotel also features great facilities, including a spa and a swimming pool.

Entry is free and the event will be finished off with a drinks reception and buffet from 5pm, so add it to your diary and don't miss out on this fabulous event.

MORE INFORMATION
For more information or to register for the event, contact Moira Macdonald at Highland Dental Plan on 01463 223 399 or email moira@ident.co.uk

DOLBY MEDICAL IS STEAMING AHEAD

DECONTAMINATION SPECIALIST HAS EXTENDED ITS RANGE OF AUTOCLAVES AND INVESTED IN STAFF

Dolby Medical, Scotland's leading supplier of dental products and services, has extended its range of autoclaves to include the new W&H Lisa steriliser with 17-litre and 22-litre capacity options. Offering a choice of two cycle times, both machines are fast, easy to use and feature wi-fi capability with a mobile app for real-time monitoring and secure traceability.

They complement an impressive autoclave product line-up available from Dolby which includes 16-litre and 22-litre vacuum and non-vacuum models from premiere manufacturer, Prestige.

Derek Gordon, managing director of Dolby Medical, said: "We aim to offer Scottish dentists the best quality decontamination products available on the market. Everything we supply has

been fully tested and approved in line with stringent NHS framework standards. As well as autoclaves, we have also added new models to our washer disinfector range and an extended choice of dental chairs."

As well as selling equipment, Dolby Medical also offers a full installation service, ongoing maintenance, repair and support packages and has a team of technical experts available to offer free advice.

Derek continued: "We have recruited additional engineers and invested in their training so we can now offer dentists an even more comprehensive service. Our engineers can care for a growing range of dental equipment from LDUs to dental compressors, chairs and imaging equipment. Our technical experts offer free advice to practices to help them make the best choices and we also provide CPD approved training. Our aim is to ensure the dentists we work with can get the best from their equipment and use it to aid the smooth operation of their practices."

MORE INFORMATION
For more information on Dolby Medical services and product sales can be found at wwww.dolbymedical.com

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NEW SPECIALIST FOR PERTHSHIRE PRACTICE

BLACKHILLS CLINIC WELCOMES ENDODONTIST LORNA HARLEY TO ITS TEAM OF SPECIALIST CLINICIANS

Lorna Harley trained under the world-class instruction of Professor Bill Saunders at Dundee and gained entry to the endodontic specialist list in 2010. Previously, she graduated from Glasgow in 2001 and gained her MFDS from the Royal College of Surgeons of Edinburgh in 2003.

Lorna is regarded as an outstanding endodontist with considerable experience in specialist practice.

She is available to take referrals for all aspects of endodontics, including:

- De-novo and repeat root canal treatments
- Broken posts and endodontic instruments.

SURGICAL ENDODONTIC TREATMENT

Lorna is also very happy to talk with referring colleagues to offer advice about specific endodontic issues.

ENDODONTIC REFERRALS

While the majority of endodontic procedures are completely appropriate for treatment within a general practice setting, a small number are more complex, requiring the additional skills, equipment and instrumentation offered by a specialist.

The team at Blackhills Clinic is trained and equipped to manage all aspects of endodontic treatment using the most up-to-date techniques and materials.

We will only carry out the treatment that has been agreed and will always return the patient to the referring dentist (usually to include the provision of the crown restoration to the endodontically treated tooth).

So, for all our many dental colleagues who have referred patients for endodontic treatment over the last few years, thank you and let's continue to work together.

If you haven't experienced the benefit of a specialist endodontist, please consider referring your next case to Lorna and have peace of mind about the increased success rates possible.

EXPERTS IN THEIR AREAS

Blackhills Specialist Dental Clinic is located in Aberuthven near Perth and under clinical director Paul Stone, brings together a team of consultants and specialists in the major aspects of modern clinical dentistry.

This means that when a patient is referred to Blackhills, they may often be seen by more than one specialist clinician, as each team member has their own area of expertise. We ensure that virtually all treatment is carried out within the clinic, avoiding further travel elsewhere.

New procedures in dentistry are constantly being developed and Paul and the specialist team employ the most up-to-date skills, materials, techniques and equipment.

Whatever the complexity of the dental problem, there is usually a combination of specialists who will work together to provide the required treatment.

At Blackhills Clinic, our registered specialists take referrals for all aspects of adult dentistry (except orthodontics). We try to ensure that all patients are contacted within one day of receipt of referral.

Dentists can use the clinic's online referral system on our website by visiting www.blackhillsclinic.com

To get in touch, call 01764 664 446 or email info@blackhillsclinic.com

A **Dental Laboratory** with a **difference**

A Full Service Laboratory

Thomas, Martin and Nick Leca run this family business with precision and efficiency. 2015 saw the laboratory moving to larger purpose built premises to ensure that the team of 60 provides the service to clients that excels their expectations. Our departments of Crown and Bridge, Chrome, Orthodontics, Prosthetics, Implants and lab-to-lab services are all available to clients.

Continuing Investment

Our new 10,000sq ft. premises have been equipped with the very latest equipment. This has been a considerable investment but one that has made us a premier dental laboratory ensuring we offer the very best in dental restorations. We have also built in-lab surgery allowing our partners to utilise this area for patient support.

COME AND VISIT US TO SEE FOR YOURSELF

Our Expertise

Our experience and expertise starts with the combined 75 years experience of the Leca family. All of our technicians are highly skilled and are continually updating their knowledge. A driven and efficient team of support staff, who ensure that deadlines are met and all areas of admin and delivery run smoothly, complements the technicians.

Our new expanded premises

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LECA PUTS ITS FAITH IN YOUTH

NICK LECA, OF LECA DENTAL LABORATORY, SHARES HIS THOUGHTS ON THE IMPORTANCE OF DRIVING FORWARD APPRENTICESHIP SCHEMES IN THE INDUSTRY

Following the recent expansion of their dental laboratory, Scottish-based Leca Dental are looking to the future – with the training and development of young apprentices to form a key role in their plans for growth. Nick Leca, director of Leca Dental, explains why the lab is putting its faith in the apprenticeship scheme.

WHY ARE APPRENTICE TECHNICIANS SO IMPORTANT TO YOUR BUSINESS?
We have seen first-hand the benefits that an apprenticeship scheme can bring to an organisation and have made sure that our recruitment drive seeks to encourage more young people to get into the industry. We believe this gives people who may otherwise not be given a chance to develop a solid career path and become some of the UK's best future technicians.

We have a number of current technicians who graduated five to six years ago; these technicians are now manufacturing very complex cases and are critical for our business success. Our current apprentices represent the building blocks for the future. Without this pipeline of talent being developed, our business will not achieve its full potential.

HOW LONG DOES IT TAKE TO BECOME A QUALIFIED TECHNICIAN?
If you do your training through an apprenticeship scheme, it takes around four years to become fully trained. If the four years is successfully completed, the trainee will gain a Level 6 SCQF NC in dental technology along with the ability to apply to register with the GDC as a qualified dental technician.

WHAT'S INVOLVED IN THE APPRENTICESHIP PROGRAMME?
Over the course of the four years, trainees will benefit from a full training programme through Telford College, and first-hand practical support from our experienced technicians. At Leca Dental we firmly believe that the best form of training comes from the hands-on experience of working in a busy dental laboratory. Our students learn about the materials and procedures used in the manufacture of dental appliances and about the increasing role that digital dentistry plays in the process.

HOW DO YOU ATTRACT YOUNG APPRENTICES?
We have recently become a part of the Scottish Enterprise 'Invest in Youth' policy, a scheme set up to help young people find employment and support businesses like ours to recruit young talent. This gives us access to potential candidates by allowing us to engage directly with schools and colleges, where we can promote current opportunities. Being part of this initiative also lets us play our part in providing an opportunity for the 30,000 young people in Scotland who are not currently in work or education. Recently, three new first-year apprentices signed up through the Invest in Youth policy and we are excited to have them on board with us.

WHY SHOULD YOUNG TRAINEES CHOOSE LECA?
Following a period of significant growth, we have a long-term strategy in place that will see the business expand and develop further in the coming years. Our youth programme plays a significant role in this so it's a great opportunity for our apprentices to develop their career in a dynamic and growing business.

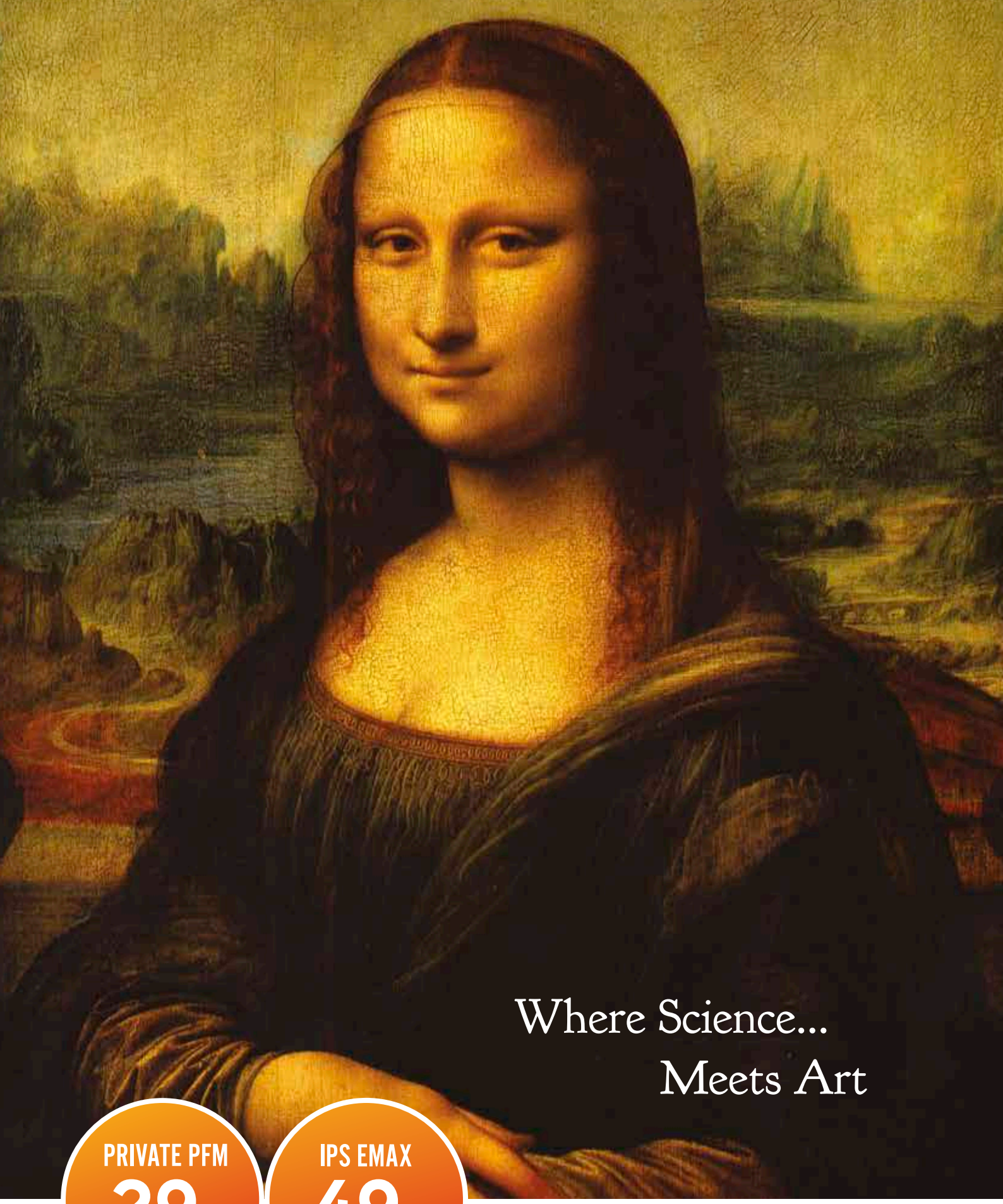
Only recently we have celebrated three graduate technicians, who have successfully come through the apprenticeship scheme and all have a bright future ahead of them.

WHAT DO YOU THINK IT TAKES TO BECOME A GREAT TECHNICIAN?
To be a successful technician you should firstly have an interest in the industry, followed closely by an ability to understand and follow technical instructions. In addition to all of this, however, we find that some of the best technicians are those who have a degree of natural artistic flair. The job requires long periods of concentration, fantastic attention to detail and an ability to produce perfectly accurate work.

ANY FINAL WORDS?
We are committed to investing in the most important part of our business – our people. All businesses need an injection of new talent, new ideas and new skills to stay competitive and we believe that when you create opportunities for young people, you create benefits not only for your business but for the industry as a whole.

We look forward to driving our youth policy forward over the coming months and years.

MORE INFORMATION
Visit www.lecadental.com



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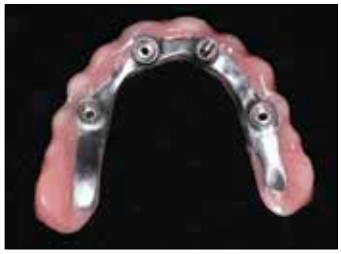
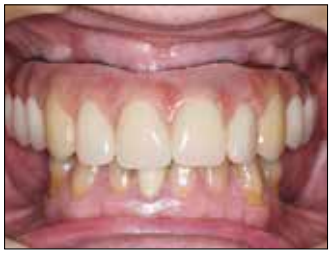
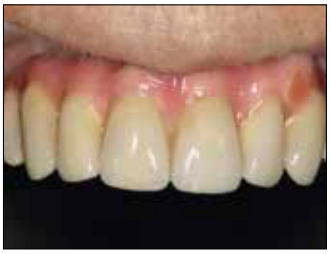
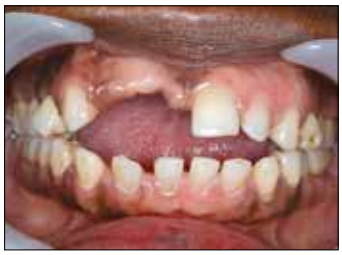
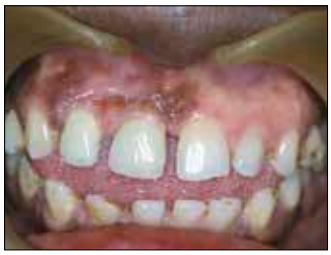



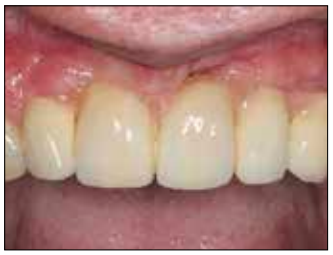
All on 4 (or more) titanium and resin full arch bridges

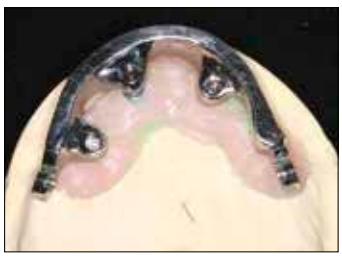
Full arch, one piece, zirconia bridges with ceramic veneer

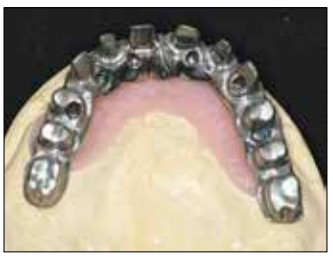
Personalised pink porcelain on all aesthetic bridgework

Angled screw channels in zirconia, titanium and chrome, from one crown to a whole arch (no cement)




"Double structure" "over dentures" and milled bars

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THE ROYAL TREATMENT

DUNFERMLINE DENTAL LAB PROVIDES A 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

FAST, EASY TO USE AND RELIABLE

Fast instrument cleaning is vital in a busy practice, so quick cycles, a large chamber volume and low power consumption are key. But that's not all – when it comes to a dental practice's sterilisation unit, it has to be reliable and affordable.

At Stafford Street Dental in Edinburgh, they have been using the NSK iClave plus since one of their old autoclaves broke down late last year.

A busy private practice with four surgeries, they cannot afford to be without a reliable autoclave and practice manager Ashley Howaniec is delighted that Angela Glasgow, NSK's territory manager for Scotland and Ireland, persuaded her that the iClave plus was the right choice for them.

She said: "We have worked with Angela for many years and I always trust her judgement and knowledge. Autoclaves are notoriously the bugbear of a practice and can cause a lot of issues, but we've had no problems with the iClave plus. It's used all day, every day and the feedback from our dental nurses is that it's fast, easy to use and the large chamber means we can process many more instruments at a time."

Stafford Street Dental uses a range of NSK products, including NSK handpieces, all made affordable through NSK's rental scheme.

Ashley said: "Practices often don't realise how great the NSK rental scheme is. Everything is taken care of so you never need to worry should anything go wrong. All parts, labour, shipping costs and accidental damage are covered, all in one manageable monthly payment. It's a pretty good deal."

Combining the performance of the most advanced sterilisers, NSK's iClave plus features a compact and elegant design.

In 18 minutes, the iClave plus's Flash cycle quickly and securely sterilises both wrapped and non-wrapped instruments, with three temperature sensors to control the steam and eliminate the risk of early deterioration.

Plus, the iClave plus's large chamber volume means you can sterilise more of your instruments (+20 per cent) at a time, while the optional integrated USB log allows all sterilisation cycles to be saved and documented.

MORE INFORMATION
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CLICK, SEND AND REVIEW

GO-PAPERLESS SOLUTIONS PROVE A HIT AT THE SCOTTISH DENTAL SHOW

As one of the UK's longest established and most trusted dental practice management software companies, and with nearly 30 years' market experience, Systems for Dentists was proud to showcase its latest technology at the Scottish Dental Show back in May this year.

Following the changing legislation surrounding the GP17, the recent Scottish Dental Show was the perfect platform for demonstrating everything that's great about its cutting-edge technology. Proving extremely popular, the company certainly created a buzz for forward-thinking dental practices planning on "going paperless" in 2016 and beyond. Its impressive, but easy-to-use Wireless Signature Pads proved a popular choice for those who took the time out to get hands on at the show.

Systems for Dentists' new wireless signature pads allow patients the ability to simply click, send and review mandatory documentation, from medical histories right through to consent forms. And visitors trying out the technology at the show were delighted to discover at first hand the core benefits, translated in time and money savings. And with the completion of current manually signed forms instead being digitally created and captured, dentists were quick to see how they could achieve an end to the current necessity to collect and file signed paper records for those thinking of opting to take up signature pad technology in the future.

Beyond the success of last year's pilot scheme and now rolling out dynamically by forward-looking practices throughout Scotland, the company's Wireless Signature Pads are now widely available, both as an integrated component of Systems for Dentists V6 practice management software.

And, growing demand from interested dental practices throughout Scotland at the show continued to suggest that managing director Ryszard Jurowski and his team have their approach to new software development for dentists in Scotland just right.

He said: "We were delighted to talk to interested dentists and to share how we are at the cusp of the demand curve for going paperless beyond the legislative changes affecting the GP17 in Scotland. The availability and acceptance of our Wireless Signature Pads presents both choice and further money and time-saving solutions for forward-looking dental practices looking to achieve even greater efficiencies and improve their patient experience even further in the future.

"Having listened to the feedback of our client base and having kept a watchful eye on the changing needs of our marketplace, this development of our product range is simply a natural extension of our commitment to ensuring we respond to and continue to serve our clients with value added products and services that deliver sustainable impact and make a positive difference to their patient's experience."

With such a proactive approach to new product development, backed by years of rich market knowledge, Systems for Dentists certainly look poised to continue to push the boundaries of systems software development to ensure their product and service offer delivers to demand and continues to be at the forefront of innovation in their market in the years ahead.

And with a market drive predicated on proactively developing intuitive software and value added solutions, coupled with an attractive offer which includes tailor made software solutions for those Dentists that need bespoke, Systems for Dentists look set to continue to deliver to market a noticeable difference to systems efficiency and dental practice management for those looking to put their practice at the very forefront of the latest technological advancements.

For further information, contact Nathan Ross at Systems for Dentists on 0845 643 2828, or email nathan@sfd.co

Sales

Valuations

Purchase

Recruitment

Strictly Confidental has been operating for over 16 years within the Dental Profession in Scotland.

We can source and supply all relevant information regarding sales, valuations and acquisitions of Dental Practices and we can also assist with recruitment.

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Preparing for retirement course 2016

Booking now open

Edinburgh – Wednesday 19 October 2016

Practice valuers and sales agents PFM Dental in association with dental solicitors Thorntons and dental accountants Campbell Dallas invite practice owners to a retirement course at The Novotel Hotel, Edinburgh Park. The seminar is ideal for practice owners within 10 years of retirement and will cover:

Goodwill values and successfully marketing your practice: Practice valuer and sales agent Martyn Bradshaw (PFM Dental) explains how to achieve the best price for your practice, with terms that suit you. The presentation covers Goodwill valuations.

The legal aspects of selling your practice: Michael Royden and Ewan Miller of Thorntons provide specialist legal advice to dentists and will cover the various legal aspects of selling a dental practice including pre-sale planning. Thorntons are a leading provider of legal advice for dentists in Scotland.

Accounting issues when selling your practice: Roy Hogg and Neil Morrison of Campbell Dallas cover taxation issues on the sale of the practice including the use of entrepreneurs' relief and pre-retirement tax strategies. Campbell Dallas is one of Scotland's leading firms of accountants with a specialist healthcare division.

Financial planning for retirement: Independent financial adviser Jon Drysdale of PFM Dental considers how delegates can best forecast various income sources in retirement. The NHS Pension will be covered including flexible retirement options and mitigating the Lifetime Allowance Charge.

FOR MORE INFORMATION AND BOOKING:

The seminar runs between 2.00 and 5.00. To book your place(s), please email your name and address to Olivia Citrone olivia.citrone@pfmdental.co.uk or call Olivia on 01904 670820. The delegate rate is £40.

Campbell Dallas Chartered Accountants

PFM Dental Sales & Valuations

THORNTONS giving you more

FAST, SECURE PAPERLESS DOCUMENT DELIVERY

Leading hybrid mail company CFH Docmail Ltd has launched the latest software release of Dotpost, its secure online document delivery and depository portal which includes modifications designed to help organisations providing NHS or adult social care to meet the Accessible Information and e-health targets. The Dotpost service, which is free to users, allows organisations to send mail and documents to a secure online account. Users can also elect to receive the content via conventional post, the web or secure email.

Managing director Dave Broadway said: "This represents a further initiative as part of our commitment to helping our dental and NHS customers to communicate with their patients as efficiently and cost effectively as possible and to achieve their targets."

LUXACORE Z-DUAL – 'PREFERRED PRODUCT'

LuxaCore Z-Dual, DMG's premium composite for core build-ups, has once again received the highest possible five-star rating by the professional journal, *The Dental Advisor* (vol. 32, no. 01, January – February 2015).

LuxaCore Z's decisive advantage is its authentic dentine feeling because its mechanical properties are similar to that of the natural tooth. Consequently, dentists cannot feel any difference in the transition from dentine to the material during preparation and their hands move smoothly from one to the other. This ensures controlled substance removal, as well as a precise preparation line.

Details available at www.dmg-dental.com. Alternatively, contact your local dealer or DMG Dental Products (UK) Ltd on 01656 789 401 or email info@dmg-dental.co.uk

BACK-TO-BASE AT DOLBY

Dolby Medical has launched a new back-to-base repair and servicing facility for portable dental equipment. Devised particularly to enable cost-effective care of kit such as classic autoclaves or ultrasonic baths, Dolby can arrange for the item to be uplifted and delivered to its engineering workshop in Stirling, and will provide a quote for servicing or repair and arrange the item's return following any agreed work. Dolby has a number of loan units that can be provided to ensure continuity for the practice.

Derek Gordon, managing director of Dolby Medical, said: "Our back-to-base service is a far less expensive and quicker option than sending units back to a manufacturer, which can be a costly and time-consuming process."

For more information on the Dolby back-to-base service, contact Dolby Medical on 01786 460 600

TOP OF THE CLASS GLASS

The new Ketac Universal Aplicap glass ionomer restorative from 3M Oral Care is a restorative material with a difference.

With a higher surface hardness than many comparable materials, Ketac Universal Aplicap restorative is a reliable choice for stress-bearing restorations. It can also be placed quickly and easily – only requiring four steps. With no need for conditioner, coating or layering, Ketac Universal Aplicap restorative provides a simpler workflow for a wide range of indications and helps to reduce chair time significantly.

This is particularly useful when treating the most caries-prone patients, who are most often those who become restless during treatment.

To find out more about this innovative material, contact the 3M Oral Care team today.

For more information, call 0845 602 5094 or visit www.3Mespe.co.uk

A SPECIALIST BOND

Specialist orthodontics calls for specialist products and the APC Flash-Free adhesive coated appliance system from 3M Oral Care has been designed especially for this purpose.

Demonstrating an excellent level of tack and workability before light curing, and exhibiting particularly low failure rates (less than 2 per cent), this adhesive system offers reliable and predictable bonding.

What's more, thanks to its advanced adhesive technology, this system does not require flash removal, meaning you can move directly from bracket placement to bracket cure – reducing bond times by up to 40 per cent.

To discover more about this very special bond, contact the expert team at 3M Oral Care today.

For information, call 0845 873 4066 or visit http://solutions.3m.co.uk/wps/portal/3M/en_GB/orthodontics_EU/Unitek/

THE SHADE SELECTION SYSTEM OF CHOICE

Fiona Phillips from the Carisbrooke Referral Centre in Leicester was one of the first clinicians to start to see the benefits of using GC's new Essentia seven shade universal composite range. "My impressions of Essentia, so far, are that it is a high-quality composite system with excellent handling properties that make it easy to place and sculpt. The GC composite brushes are an excellent aid to sculpting the material," she said.

"The aesthetic properties are superb and, with only seven shades, the technique of selecting a shade based on value rather than hue and chroma is unconventional. The shade selection is made easier by taking a preoperative photograph, with a polarising lens, of the tooth with a small piece of the composite in situ to confirm the choice.

"The posterior composite universal shade has very good aesthetics for a single shade too."

For further information, contact GC UK Ltd on 01908 218 999, e-mail info@gcukltd.co.uk or visit www.gceurope.com

WERE YOU SITTING COMFORTABLY?

Were you at this year's British Dental Conference and Exhibition? If you weren't, you really missed out. That's because A-dec was on stand this year, ready to discuss its range of innovative and reliable dental equipment solutions – from chairs to lights and stools. The expert team were also happy to discuss the new my A-dec app – the inventive new app service developed for dealers, to help ensure dentists can design and order exactly the chair they need to practice excellent dentistry.

What's more, the A-dec team gave delegates the fantastic opportunity to sit in and try out the premier A-dec 500 and 500 series stools – showing practitioners exactly how comfortable, ergonomic and functional these products really are.

If you did miss A-dec, you can give the team a call on 0800 2332 85 or visit www.a-dec.co.uk

AS EASY AS ONE, TWO, THREE...

Designed specifically to make life in the modern dental practice easier, the various innovations from Carestream Dental were on display at the BDA Conference.

Delegates were particularly interested to discover benefits of the CS R4+ practice management software. Capable of efficiently managing patient recalls and UDA fulfilment, while also improving communication with the patient and other team members, the intuitive software is ideal for every practice.The new CS 3600 intraoral scanner also proved popular, delivering faster, easier and smarter imaging with its groundbreaking intelligent matching system and continuous workflow.

For more information, contact Carestream Dental on 0800 169 9692 or visit www.carestreamdental.co.uk Follow us on Twitter @ CarestreamDentl and Facebook

BIEN AIR BARGAINS ONLY AVAILABLE FROM WRIGHTS

Having recently revealed its exclusive partnership with Bien Air, Wrights is pleased to announce that it will be offering unmissable deals throughout the year – so keep an eye out!

The first promotions will be available until the end of August on a range of quality Bien Air products including contra-angle handpieces, the Bora L turbine handpiece, a variety of electric motors and the Lubricare maintenance device. Alongside these deals, Wrights ensures that customers receive a fast and reliable service as well as the opportunity to use a loan product in the event that the purchased item needs to be repaired.

The leading distributor even offers free delivery on all purchases, which can be ordered online, over the phone or in person from your local representative, so that you get even more value for money.

For more information, contact Wrights on 0800 66 88 99 or visit the easy-to-navigate website www.wright-cottrell.co.uk

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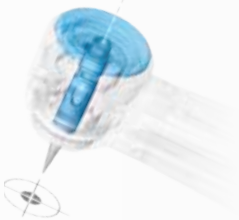

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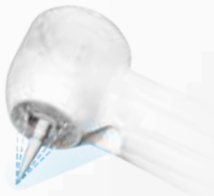

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