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IRELAND'S Dental

THE MAGAZINE
FOR DENTAL
PROFESSIONALS
IN IRELAND

MAY 2018



CONTRACT SYSTEM
BLAMED FOR CRISIS
OF MORALE

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PORTFOLIO TIPS
TO LAUNCH A
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Welcome to the first edition of the new-look *Ireland's Dental* magazine.

You'll see we've made some radical improvements! Yes, it's smaller in size, but we've added many more pages, allowing us to develop the content you need.

We've taken soundings across the profession and responded with more news, features and clinical articles than ever before.

We are also taking very seriously the comment that *Ireland's Dental* must have its own "voice", commenting on the issues facing dentists north and south of the border today.

So, it's more than a decade since the Scots realised they had a major problem with the oral health of their children. The statistics



then were frightening. However, under the leadership of Professor Lorna

Macpherson, the Childsmile programme has dramatically improved the situation.

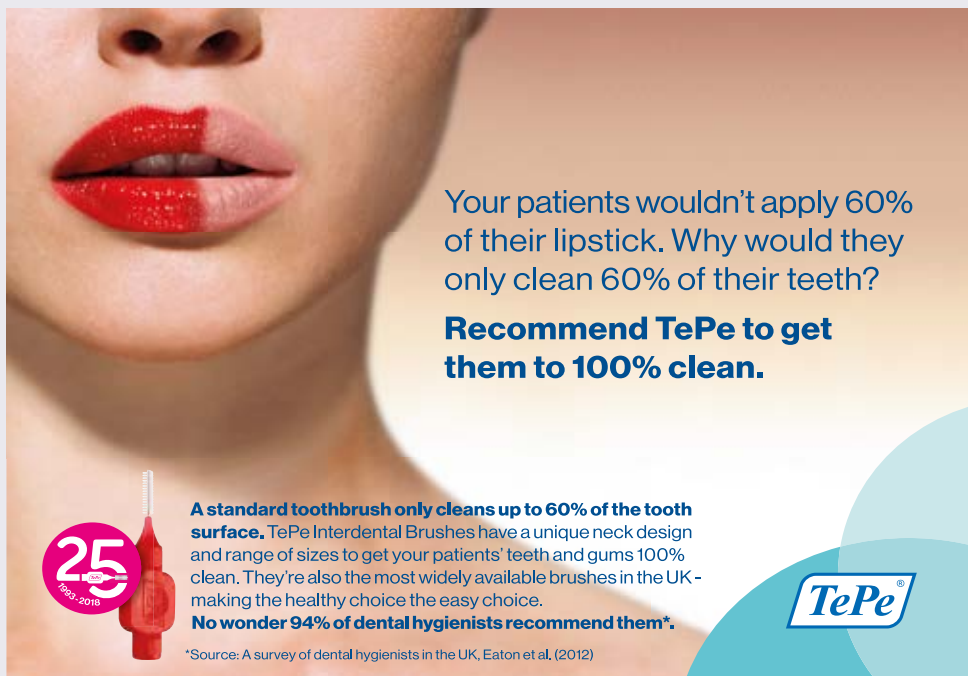
Now, Prof Macpherson is offering to support Ireland's dental community – authorities and practitioners –

with the huge task of tackling their own massive problems.

What Prof Macpherson has to offer should be grasped with both hands, and quickly, for the sake of Ireland's children. ■



Sarah Allen is editor of Ireland's Dental magazine. To contact Sarah, email sarah@connectcommunications.co.uk




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A CULTURE OF CHANGE

Recently at a workshop on practice management, I was struck by a discussion on team building. Often in our surgeries, we tend not to view our workplace as a Team Place. By this I simply mean that we work as part of the team. In some quarters there still tends to be a view that the dentist is single-handedly saving the nation, one tooth at a time! However, as we truly know, dentists and hygienists are entirely dependent on their dental surgery assistants/nurses, receptionists, practice managers and treatment co-ordinators (if they have them).

There is an array of people who, in some small ways and in some big ways, directly influence our ability as dentists to provide treatment and service to our patients. Think about our colleagues in the dental industry, our suppliers, waste management companies, dental laboratories. They all play a vital role in delivering good patient outcomes.

I would also argue that the term “our patients” refers to patients of our practice team and by that I mean the team of people I’ve listed above. This idea of team and workplace is central to good communication and clear, achievable work output.

One of the tenets of postgraduate study in healthcare management looks at the idea of culture in the workplace. Particularly, the work of Charles Handy (whom the *Financial Times*

calls a “world-class management guru”) is very instructive for culture.

As any dentist will know, small groups are easier to participate in than larger ones. Participation increases commitment and increased interaction leads to increased sentiment. Our patients will all concur with this. By examining this from a culture perspective, it is sometimes instructive to look at the culture of our own surgeries.

Culture can be thought of in simple terms as “the way we have always done things here”. And if you think about that sentence and apply it to your practice, it makes sense. You’ve always opened at 9am and taken lunch at 1pm. You’ve always used laboratory X or supply company Y. You’ve always taken holidays in July and always closed on the Friday before Christmas. These are some common examples of how culture becomes engrained in how we run our surgeries.

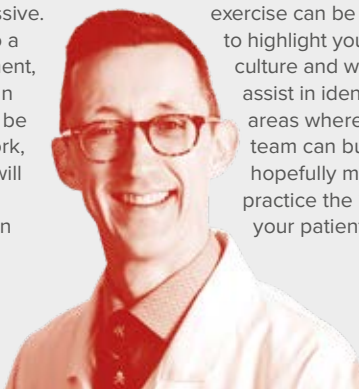
In the main, culture is a bedrock on which we build successful practice. We do, however, need to ensure that our culture is one that is growing, advancing, rewarding and progressive. Such a culture leads to a positive work environment, a fun place to work. Fun places to work tend to be profitable places to work, as Apple and Google will tell you.

Culture, however, can

sometimes be a challenge to change. If we are implementing a new cross-infection policy, changing our software or even putting a new card machine at the desk, change may prove difficult. Education and training are essential. And, like most changes in life, leading by example is the surest way to provide the best “how to” in getting a change over the line.

I have been delighted to see in recent years the increased number of “team events” catering for dentists with nurses and practice managers. As a profession, our cohesion in these teams can lead to better service to our patients, improved clinical outcomes and a healthier bottom line. To apply this to your own practices, think about how you would rate your surgery in terms of its ability to change. If you were to introduce a clinical change (formal cross-infection control reviews every three months) or practice management change (say, increased recall system), how would your practice fare? Would you lead the change? What challenges would you face in implementation? This

exercise can be instructive to highlight your surgery’s culture and will definitely assist in identifying areas where you as a team can build and hopefully make your practice the “apple” of your patients’ eyes! ■



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News, notes and networks

Childsmile offers helping hand to Irish profession

Scotland's Childsmile oral health programme for young people could hold valuable lessons for the ROI and Northern Ireland, the programme's director has suggested.

Prof Lorna Macpherson said she would be delighted to talk to policymakers and professionals looking to reform their systems.

Childsmile has had significant success in both reducing tooth decay among Scotland's young people and cutting the amount of public money spent on treatment (see pages 20-23).

Recent revelations that approximately £9 million a year is being spent on multiple extractions for under-18s in Northern Ireland have led to calls for root and branch reform.

BDA Northern Ireland Council Chair Roz McMullan said: "With the health service facing huge pressures, Northern Ireland needs to confront a wholly preventable



disease that not only causes untold misery, but is now costing us millions. Our oral health strategy is well past its sell-by date. Governments in Wales and Scotland have shown there's nothing inevitable about child tooth decay, and we can't afford not to put those lessons into practice."

Meanwhile, Prof Macpherson said: "We see it as part of our role to give others the benefit of our experiences. That's not to say we've got it all right. We are always learning and trying to

improve things. However, we've had the programme for around 10 years so we are very happy to share our knowledge with people who would be interested in learning with us."

The progress achieved by Childsmile has led to interest from Australia, Chile, Israel, the Netherlands, New Zealand and others. Prof Macpherson and her team were also asked to arrange a workshop for six Balkan countries with dental health problems.

Indicating the Irish interest, Prof Macpherson has been invited to address the Irish Society of Dentistry for Children annual scientific meeting (see below).

Reiterating the readiness to pass on lessons learned, she said: "All of us at Childsmile would be very happy to talk with anyone who wants to hear more about the programme."

Lessons of hope – page 20



Scientific meeting focus on challenges of children's oral health

Professor Marie Therese Hosey, head of paediatric dentistry at King's College London, will give the opening address at this year's Irish Society for Dentistry for Children annual scientific meeting.

The event, on 10 May, at Portlaoise Town, Co Laois, is set against the backdrop of some of the worst figures yet seen for children's oral health both

north and south of the border.

Prof Hosey will talk on the challenge of early childhood caries and discuss the options for how this major problem can be tackled.

She will be followed by Professor Lorna Macpherson, head of dental public health at the Dental School, Glasgow, and director of the Childsmile

programme who will give a detailed insight into the challenges faced by the initiative, how it has worked, the latest results and how it could be applied in both the ROI and Northern Ireland.



For more information on the event or to register, please go to www.dentistryforchildren.ie/meetings/



Spotlight

NI DPC warning on 'unacceptable' crisis of morale caused by contract system

The alarming and worryingly low morale among Northern Ireland's GDPs caused by working under the current contract system is totally unacceptable in a profession delivering patient care, according to the new chair of the Northern Ireland Dental Practice Committee (NI DPC), Richard Graham.

Discussing the major challenges facing GDPs in the next two years, Graham, who was elected in January, highlighted the negotiations towards a new contract that have stalled until the findings of an evaluation of the GDS pilots, which ended in August 2016, are published. The report is due later this year, when

talks are expected to start again.

He said: "Until new contract arrangements are in place, Northern Ireland dentists operate in a 'fixed fee per item' system. And so, the most pressing challenge facing GDPs is making the present contract work, when year after year of inadequate, below-inflation pay uplifts to health service fees, allied to the refusal to implement the pay award in 2015-2016, have left practices woefully underfunded.

"This combined with lengthy delays in the implementation of pay awards of up to a year in Northern Ireland not only makes cash-flow management increasingly difficult and reduces the ability of practices to invest in equipment and premises, but also causes great anxiety, personal and professional stress.

"Widespread disillusionment with the current system is evident as recent official figures, from NHS Digital, show that the more time dentists spend on Health Service work, the lower their levels of morale. More than a third (33.6 per cent) of practice owners rate their morale as 'very low' and 29.5 per cent as 'low'. The main drivers

are longer working hours and carrying out more health service work."

Graham declared: "These alarming and worryingly low levels are totally unacceptable among a profession delivering patient care, and the government can't pretend this problem will just go away of its own accord or be addressed through a new contract."

Graham, who has worked in general dental practice for more than 30 years, said that the Department of Health often pointed to the new contract as the panacea for all the current concerns, but practitioners needed more than the promise of a new contract, which may be years away.

"The very difficult environment for practitioners must be acknowledged and the full impact of growing costs on maintaining a viable dental health service must be recognised."



Roz McMullan re-elected

Roz McMullan is to continue in her role as chair of Northern Ireland Council of the BDA.

McMullan, who previously practised as a consultant orthodontist in the Western Health and Social Care Trust, also sits as a non-voting member on the Northern Ireland Dental

Practice and Salaried Dentists Committees.

She said: "I am honoured and delighted to be re-elected. Dentistry in Northern Ireland continues to experience profound challenges; confronting the treatment needs of an aging dentate population along with pressure for domiciliary care visits, more patients with complex health care needs impacting on oral health, and unacceptable levels

of hospital admissions for children with oral health problems.

"Dentists in Northern Ireland are labouring under an antique oral health strategy that's frankly unfit for purpose. Now, more than ever, patients need a dental service which meets their increasing complex care needs and we look forward to working with partners to ensure that both dentists' and patients' needs are fully met."

Belfast delegates to debate impact of devolution on dentistry in the NHS

The looming crisis in recruiting NHS dentists will be high on the list of hot topics to be debated when the annual conference of Local Dental Committees (LDCs) is held in Belfast next month.

Around 200 delegates at the two-day conference in June will also tackle the need for a level playing field for all dentists competing for NHS contracts.

And there are expected to be calls for the government to commit a portion of the tax raised from sugary drinks to oral health schemes for children and to improve funding of community dental services.

There will also be a timely discussion on whether devolution improves dental care or takes the 'N' out of the NHS.

This will include presentations from Michael Donaldson, responsible for commissioning health service dentistry in Northern Ireland, and Ben Squires, who has similar responsibility for Greater Manchester.

Ben will share his experience of DevoManc and where commissioning dentistry fits in the health and social-care framework.

**“IS THIS A WAY
OF TAKING THE
'NATIONAL' OUT
OF OUR HEALTH
SERVICE?”**



Joe Hendron © Peter
Medlicott Photography

Joe Hendron, chair of the 2018 LDCs conference, said: “Since we’re having our annual conference in Belfast, it seems fitting to look at the impact of devolution on dentistry.

“This is no longer confined to countries, as the government continues to push its traditional responsibilities out to the regions – look at DevoManc.

“Is this a way of taking the ‘national’ out of our health service and blaming the ‘outposts’ if they’re poorly funded by central government, or genuinely the best way of addressing local differences?

“Whatever the answers, I am looking forward to hearing the debates and the first-hand accounts of our expert speakers in dental commissioning.”

Contamination inquiry demand

An independent public investigation has been demanded over an incident at an HSE dental clinic in Ennis, Co Clare, in which a drainpipe cleaner contaminated water being used during dental procedures on children.

A source close to the internal inquiry into the incident has told *Ireland's Dental*: “This is an unreported scandal and it was only luck that prevented upwards of 40 children being permanently scarred.”

The drainpipe cleaner called ‘Red Streak’ had contaminated water being used during a number of dental procedures.

The HSE’s report acknowledges “adverse localised symptoms ranging from mild burning sensation to blistering and ulceration of the mouth”.

A 37-page HSE report on what happened at the clinic published on 26 March, but not publicly released has been written off by the source, who asked not to be named, as a “complete whitewash”.

Now, local Independent Councillor Ann Norton wants an external investigation. “I have solid information, concrete information from the report and will now go and talk to the HSE.

“It is not acceptable that something so serious can be overlooked.

“The HSE will delay it but sooner or later they will have to release that report for open debate and they are trying not to do that,” she said.

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News round-up

1 Foyle criticises strict competition legislation for restricting IDA

Ireland's dental profession has probably never faced as many challenges as it does today, making unity more important than ever, according to one of the sector's leading figures.

Dr Robin Foyle, outgoing president of the Irish Dental Association, criticised competition law and the Dental Treatment Service Scheme (DTSS) in his commentary opening the organisation's 2017 annual report. He said that strict legislation over competition starting with the Competition Act 2002 severely restricted the IDA's ability to represent the interests of its members and patients.

"Competition law is very important to prevent businesses price fixing and when used for that purpose, none of us can have any argument with it," Dr Foyle said. "Price fixing between local practices is fundamentally wrong and damaging to our patients, whose best interests are paramount.

"However, our government uses this to prevent any collective protest on inadequate state schemes that do not serve our patients well. The fact that the patients affected are the poorest in our society makes it even more shameful."

**“PRICE FIXING
BETWEEN LOCAL
PRACTICES IS
FUNDAMENTALLY
WRONG”**



Dr Foyle added that he felt the Primary Care Reimbursement Service (PCRS) had "added insult to injury" with the issue of 400 letters to contractors over surgical extraction claims.

2 HMRC move on job status of associates

The BDA is advising associate dentists to speak to their accountant before responding to a letter from Her Majesty's Revenue and Customs (HMRC) indicating that it is reviewing their employment status.

The association also asks that associates let it know as soon as possible at Advice.Enquiries@bda.org if they have been contacted by HMRC. It would be helpful if the BDA had a copy of the letter received and an indication of practising arrangements, such as NHS/private, and whether, for example, the associate works in a prototype practice.

Associates should scan or photograph the letter to attach it to an email and send it to the above address. The information provided will be used to help the BDA build a picture of what is happening, and personal information will not be used. Copies will be destroyed after the BDA's work has concluded. It is monitoring developments closely and will offer further information to members when there is more clarity around the scope of the HMRC process.

3 X-rays – Is your practice registered?

Dentists who have not yet registered their use of X-ray generations under new regulations have been urged to do so as soon as possible.

The request, by the Health and Safety Executive in Northern Ireland (HSENI), applies even if dentists have previously told HSE that they work with ionising radiation.

IRR17 has replaced IRR99 and introduces a three-point risk-based system of regulatory control – "notification" (for low-level risk activities), "registration" (for the operation of radiation generators) and "consent" (for the highest risks).

HSENI requires only one registration (the exact number of sites is not a major concern and one address will suffice for their records/contact needs). If dentists operate as two separate entities (e.g. as a limited company and a sole trader) and one set of radiation equipment is shared, two registrations are required.

Dentists can register by filling out the IRRNI17 questionnaire form and email it to: mail@hseni.gov.uk

4 RCSI postgraduate education programme

The RCSI's Faculty of Dentistry has unveiled its postgraduate education programme of events for autumn and winter this year. All are free to attend.

The series runs from September through to December 2018 and includes a series of lectures. Subjects covered encompass the whole range of dental practice and include basic

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sciences, practice management and practical tips.

The monthly modules provide an opportunity for dentists who wish to update their knowledge and are also particularly suited to those preparing for the Diploma of Primary Care and MFD examinations.

There will also be a paediatric dentistry lecture series, held in conjunction with the start of a three-year FFD Specialty Programme in Paediatric Dentistry in association with Hamad Medical Corporation, Qatar.

Another element of the programme is a one-day intensive revision course in September.

- The faculty is also running a two-day CBCT training course for dentists in October in collaboration with the British Society of Dental and Maxillofacial Radiology.

5 Diploma opportunity for new students

A new cohort of students will have an opportunity to gain a formal dentistry award from September when Trinity College Dublin begins a new session of its Diploma in Dental Nursing.

After successfully completing the 16-month long programme, students, who must already be employed in dental practices, will be permitted to enter the Voluntary Dental Council Register for Dental Nurses in Ireland.

The course is modular in design and is a joint initiative between the Dublin Dental University Hospital and Cork University Dental School. It will be offered in Dublin, Cork and, provisionally, Galway. An option is also offered for the course to be delivered to

participants in more remote areas, with teaching supported by distance learning and video conferencing.

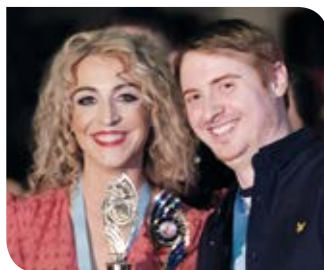
Content is delivered to students via the virtual learning environment known as Blackboard Learn. Academic teaching will take place in the Dublin Dental University and Hospital on the Trinity College Campus, while clinical skills and training will be at participants' own dental surgery.

The programme consists of lectures, tutorials, demonstrations and practical experience. Students will be assessed on a continuous basis. By the end of the course, they will have developed appropriate skills in patient and team management.

6 Dazzling duo win dancing competition

Two staff members from Enniskillen Bupa Dental Centre have displayed dazzling dancing skills by winning a company-wide 'Strictly' competition, and helping raise £26,800 for Make-A-Wish in the process.

Practice manager Aisling Leydon and dentist Joe Murphy underwent 12 weeks of training before competing in 'Bupa does Strictly'. They were one of 10 couples from Bupa's dental practices who took part.



Are you ready for GDPR?

Don't be tempted to sideline your responsibilities under the General Data Protection Regulation (GDPR) legislation, the BDA has urged dentists in Northern Ireland.

GDPR is the EU regulation intended to strengthen and unify data protection for all individuals within the European Union (EU). It also addresses the export of personal data outside the EU.

Many high-street dentists and dental practices are actually in a good position to deal with the requirements of the GDPR as dentistry has been a heavily regulated profession, and many practice owners already follow stringent data protection procedures and have robust policies in place.

However, there are some strengthened and new layers of compliance that will be required and you need to ensure that you have all the right structures and systems in place before 25 May to ensure your dental practice will be compliant when the regulation comes into force.

If you are geared up to give individuals their rights now, then the transition to the GDPR should be relatively easy, especially for dental practices that have a data protection policy in place and are registered with ICO.

It is a good time to check your procedures and to work out how you would react if someone asks to have their data deleted, for example.

Would your systems help you to locate and delete the data? Who will make the decisions about deletion?



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Practice news

1 Dental Care Ireland opens 13th practice

Dental Care Ireland, a Irish-owned network of dental practices nationwide, has celebrated three years in business with the opening of its 13th practice in Greystones, Co Wicklow.

Since its establishment in March 2015, Dental Care Ireland has embarked on a rapid programme of acquisition. Now with an annual turnover of €13 million, it is on track to reach its target of 15 practices by the end of the year.

Founded by Colm Davitt, former CEO of Affidea, and his brother Dr Kieran Davitt, a Galway-based dentist, the group acquires established, high-quality practices in local communities, with a view to helping them reach their full potential.

To date, it employs almost 200 team members across the country, comprising 80 general and specialist dentists, dental hygienists, dental nurses and practice managers, as well as operations, finance and



marketing support staff.

According to Colm Davitt: “Our business model is unique in that all of our dentists are established practitioners with a loyal patient base. We work closely with them to build on the traditions of each individual practice, while ensuring consistent standards for patients across the network.

“Our aim is to free dentists from administrative burden, allowing them to focus on clinical dentistry. We invest in upgrading the practices with latest facilities and technology, while providing administrative and management support.”

Speaking at the opening of Dental Care Ireland Greystones, formerly Kilfeather Dental, Dr Gerard Kilfeather said: “Today marks an exciting new chapter for the practice as we partner with Dental Care Ireland to enhance our overall patient offering.

“We would like to take this

opportunity to thank all of our patients for their continued loyalty and very much look forward to showcasing our newly refurbished practice.”

2 Fourth care centre for Valley Healthcare

Valley Healthcare, a vehicle owned by the state-backed Irish Infrastructure Fund (IIF), has acquired a primary care centre in Mitchelstown, Co Cork. It brings to four the number of primary care centres that Valley Healthcare now controls.

It bought a new primary care centre in Tralee, Co Kerry, in December, and also owns two other operational primary care centres, in Wicklow and Mayo.

Valley Healthcare is managed by Glencar Healthcare, a firm chaired by former HSE chief executive Brendan Drumm. Glencar’s founder is surgeon John Drumm.

The IIF was established in 2012, with a €250m commitment from the sovereign Ireland Strategic Investment Fund.

The 20,000 sq ft Mitchelstown centre is occupied by the HSE, a GP practice and other health services providers. ■

Durable and colour-stable hybrid ceramics in two layers and three types

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Childsmile's lesson of hope

Scotland's oral health initiative for the young has been a major success. The project's director, **Lorna Macpherson**, explains why and offers Irish dentists support in their quest for a similar strategy

Writer: Stewart McRobert

It's critical that we get a hold on the scale of the problem, and that we provide solutions for children in Ireland. When you consider the effects that dental decay has upon a developing child, the need for adequate prevention and treatment is overwhelming."

Writing this in the last edition of *Ireland's Dental*, Dr Brett Duane and Dr Kirsten FitzGerald starkly underscored the profession's continuing concern and frustration at the extent of the "tooth decay epidemic" afflicting the young and the lack of concerted action on children's oral health.

In their article, Dr Duane, associate professor in dental public health at Dublin Dental University Hospital (DDUH), and Dr FitzGerald, consultant paediatric dental surgeon at Our Lady's Children Hospital, Crumlin, highlighted, as they had at an Irish Dental Association seminar last year, the introduction of the Scottish Government-funded Childsmile scheme as an example of best practice that could and should be replicated in Ireland.

Having worked in Scotland earlier in his career, Dr Duane has first-hand knowledge of an initiative that has not only reduced the prevalence of decay by almost a third in a decade, but also saves the NHS up to £5 million a year.

The clamour for change in both the Republic and Northern Ireland was in the headlines again recently when the British Dental Association Northern Ireland threw its support behind calls from the NI Assembly

for fundamental reform of an oral health strategy "well past its sell-by date", as new analysis showed extractions of multiple teeth among under-18s could be costing the health service more than £9 million a year.

The BDA welcomed calls from MLA Roy Beggs for authorities to revisit the approach to oral health strategy across Northern Ireland, and to learn vital lessons from the Scottish Childsmile initiative and a dedicated programme in Wales.

It was against this backdrop of widespread concern that Professor Lorna Macpherson (pictured below), director of the Childsmile programme, was invited to address the Irish Society of Dentistry for Children annual scientific meeting in Portlaoise, Co Laois, and deliver an overview of the successful campaign, which started as a pilot in 2006 and has been delivered throughout Scotland since 2011.

Multi-agency approach

Speaking to *Ireland's Dental*, Prof Macpherson said Childsmile could hold valuable lessons for other countries, including the Republic and Northern Ireland.

Outlining her thinking, she said: "If any country is considering a programme like Childsmile, the first thing to do is make sure it is context specific."





About Childsmile

Every newborn child in Scotland is linked to Childsmile. Health visitors see all children and their parents/carers regularly between birth and the age of five, providing advice and practical help on oral health, as well as making a referral to dental health support workers where appropriate.

There is a supervised toothbrushing programme for three and four-year-olds attending nursery, and for at least 20 per cent of five and six-year-olds in schools in areas of high deprivation.

To promote home brushing, up to the age of five, every child is regularly provided with a dental pack, containing a toothbrush and a tube of 1450 F toothpaste.

Children aged three to at least eight living in the most deprived areas are given an application of fluoride varnish.

Children are encouraged to attend primary care dental services and the dental team provides a tailored programme of preventive care. Extended duty dental nurses in dental practices are trained in oral health promotion and fluoride varnish application.



That means understanding what the problem is, what programmes are already in place and the infrastructure you can build on, which, naturally, will be different in every country. For example, parts of Ireland already have water fluoridation, so that would need to be taken into account from the start."

In Scotland, she said, it had been decided to have a multi-agency approach, and preparations for Childsmile began with an assessment of how to utilise nurseries, schools, the health visiting system and community groups, as well as general dental practice.

Notably, Childsmile follows the "common risk factor" method recommended by the World Health Organisation. That puts the emphasis on integration and co-ordination across health issues. For example, sugar is not only a risk factor in oral health and multiple tooth decay, it has major implications in issues such as obesity. Accordingly, it's important for agencies to work together on sugar control, for example, advocating for policies such as a sugar tax.

"This approach can make the biggest difference because it has the biggest reach," she explained. "Plus, it means the cost of tackling the problems doesn't simply come out of the dental health budget."

She pointed out that success depends on long-term financial commitment from the government and that it's vital to continually monitor progress.

"Our system of process evaluation is constant.

We regularly speak to people on the ground, such as nursery teachers and health visitors and ask them if



the programme is working for them. If not, we try to find out why. We tweak the programme according to the information we receive and then monitor again once changes have been made.

“Childsmile is evolving and developing all the time. Learning from your mistakes is essential.”

New thinking

The Childsmile programme to improve children’s oral health and reduce inequalities in dental health and access to dental services is funded by the Scottish Government. It started as a pilot in 2006 and has been delivered throughout Scotland since 2011.

As part of the programme, every child in Scotland should have:

- a tailored programme of preventive care within primary care dental services
- free daily supervised toothbrushing at nursery
- free dental packs to support toothbrushing at home.

The programme also helps to develop national strategies and regulations relating to diet and nutrition.

Prof Macpherson believes this programme has encouraged new thinking among dentists and the dental team. In the past they might give advice on sugar, simply telling patients to cut down their intake. However, now they are aware that achieving a balanced diet can be a challenge for those who have restricted financial resources or no easy access to healthier foods. If dental teams understand what the



issues are at an individual family level, they can tailor their support. Similarly, Childsmile has an advantage in that the NHS payments system allows the government to more directly influence the behaviour and priorities of general dental practice. In other countries, however, insurance companies have a greater role in the health system and they don’t always have the same aims as authorities and policymakers.

Prof Macpherson pointed out that, though it has helped to deliver some significant steps forward, Childsmile has yet to have a major impact among the country’s poorer communities. Indeed, the Scottish government has recently produced a new action plan for oral health that aims to address persistent issues.

“We recognise that we need to do a lot in the more disadvantaged areas,” she said. “Among other things, we will be asking people in communities for their views and working with local organisations to take forward oral health initiatives. ■

A compelling record of major improvements

Childsmile has been associated with major improvements in child dental health.

The National Dental Inspection Programme data show substantial improvements in dental health for both five- and 11-year-olds.

In 2016, more than two-thirds (69 per cent) of five-year-old children had no obvious decay experience in their primary teeth in 2016, compared with 45 per cent in 2003.

Similarly, the mean number of decayed, missing and filled primary teeth has gone from 2.76 in 2003 to 1.21 in 2016. For 11-year-olds the percentage of those showing no obvious tooth decay has risen from 53 per cent in 2005 to 77 per cent in 2017.

A recent study* has shown the estimated annual savings in dental costs to the NHS, which range from £1.2 million in 2003/04 to £4.7 million in 2009/10.

However, inequalities in child dental health remain – only 55 per cent of five-year-olds in the most deprived areas have no obvious decay compared with 82 per cent in the least deprived areas.

As a result, a new national Oral Health Improvement Plan was published by the Scottish Government in 2018, which sets the future direction for expansion of the programme.

*Anopa et al 2015

The case for special treatment

Ten years ago, the Irish Dental Association warned the government that three in four Irish children had experienced tooth decay by the time they reached the age of 15. Last year there were headlines that 50 per cent of children have tooth decay by the age of five. And that's a figure that paediatric dentist Dr Rose-Marie Daly thinks is underestimated, as she is continuing to see dental decay in young children on a day-to-day basis, *writes Tim Power.*

In the years since she set up her first paediatric practice in Kerry in 2010, and now recently relocated to Dublin, she said that very little has changed: "I'm coming across very young children with dental decay every day of my working life so, in my experience, the incidence of children's tooth decay is certainly not reducing.

"Unfortunately, Ireland's Public Dental Service is not getting to children early enough, so by the time they are seen for the screening at around seven years old the damage is already done. It's like closing the barn door after the horse has bolted."

Dr Daly started her studies in dentistry at University College Cork and, after working in various dental

health settings, completed her specialist training in paediatric dentistry at the Leeds Dental Institute in the UK.

She was awarded a fellowship in paediatric dentistry from the Royal College of Surgeons of Ireland and worked as a consultant in paediatric dentistry for more than seven years at the Bon Secours Hospital in Tralee, Co Kerry, before moving to Dublin to establish Northern Cross Dentistry for Children.

As a passionate advocate for children's oral health, she said there was plenty of evidence to support the need for a national programme on early intervention, such as the Childsmile initiative used in Scotland.

She said: "The Childsmile programme provides the evidence that shows it has reduced the dependency on general anaesthesia to remove teeth, so it clearly means that resources can be used in much more effective ways.

"But we have our own studies from Cork Dental Hospital to show that when you provide proper preventive care for children it's eight times

cheaper than waiting for a problem to develop and then having to send them to hospital to have their teeth taken out.

"We've got to see children at an early age, at least 12

months, and to support this intervention by giving parents appropriate preventive oral health advice about diet, fluoride and cleaning."

To make this effective, Dr Daly argues for paediatric dentistry to be recognised as a specialism in Ireland by the Dental Council.

She said: "In Ireland, the case for treating children well can only be furthered by advocating for specialist recognition for paediatric dentistry.

"If you are going to see children early, you need to have dentists that not only have the specialist skills but the understanding of the best interests of children when it comes to their oral health planning. I believe you need specialists directing the care that children receive through the public dental system.

At the moment, it is not a specialist-led service, and that is to the detriment of the children in the service.

"We also need a national policy on what happens to children whose dentition is allowed to fall apart because extracting their teeth under general anaesthetic when they could be restored is not a modern and progressive way of approaching this problem. It is certainly not consistent with best practice and scientific evidence-based work and also not in the interest of the child to wait until they become sick."



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Planning for your next career move

Second-year dental core trainee **William Maguire** gives his advice for colleagues thinking about undertaking hospital training

When nearing completion of foundation training, it seems that every dentist gets asked the same questions about what they want to do clinically for the next year. Many go for associate jobs, but the hospital training pathway is another option to consider. I wanted more experience of complex surgical management of patients, especially regarding orthognathic cases, so I applied for the oral and maxillofacial surgery job.

Applicants must first complete the application form that is available online (www.oriel.nhs.uk/web). There is a considerable amount of information available on Dental Core Training (DCT) recruitment, such as what to include in your application, the timeline and what to include in the portfolio if you are required to bring one. Here I discuss some areas to consider now and how to prepare your portfolio.

1. The timeline is critical

Knowing the deadlines for each aspect of the recruitment process seems obvious, but this will ensure that you can prepare in advance and won't have to rush any section.

2. There are many jobs available at each level

You do not have to decide in January or February what department you would like to be working in by September. Most applicants will have some idea of what area of clinical dentistry they would like further training in, so you can do some shadowing or 'work experience' in various departments during these months to give you an idea of the work you are signing up for. Remember, there are many different roles, such as community, oral medicine, oral surgery, orthodontics, paediatrics, public health,

restorative, sedation, special care and many other combinations so keep your options open; if there is an area on which you would like more specific information, look on the deanery websites or contact a colleague working in a similar position.

3. Speciality training requirements

Some speciality training specifications state that previous job experience in certain specialities is desirable. If you are certain of a career pathway, plan your jobs to best suit your application and maximise your clinical experience. If you don't know at this stage what you want to do, that is fine, but remember that usually a dentist can only do three DCT years before deciding what to do next.

4. Location, location, location

The national recruitment process allows applicants to apply for jobs in England, Northern Ireland, Scotland and Wales. This should be familiar to many as this is similar to the foundation process, so consider early on what areas you would be willing to move to for work. The recruitment process is competitive, so the more places you are willing to work in increases your likelihood of being successful in your job search.

5. Salary

This will be paid monthly like foundation training. The amount will be more than DFT, but some colleagues working in general practice could be earning more as an associate. Factors to consider here are that each job and area may have different salaries, with tax and pension contributions calculated by your employer. This information will be available prior to ranking jobs, so again do your homework on this.





6. Clinical governance

If you didn't already know, there are seven areas of activity which are used to make sure we deliver the highest quality healthcare to our service users. This includes clinical audit, staffing and staff management, education, training and clinical effectiveness. You will be expected to carry out audits which can then be presented locally or made into posters for national conferences, and use all of the help available within your department as your colleagues will have a lot of experience with this.

7. DOPs, CBDs, MSF requirements

You will have experience with this from foundation training, so, again, the sooner you start the better. Expect to carry out at least two structured learning events each month, but read your own requirements specific to your job. Use the curriculum available online to design what areas of clinical work in which you want to demonstrate competence.

8. Personal Development Plan (PDP)

The GDC has made it a requirement for all members of the dental team to make and maintain a PDP. This is a requirement of DCT jobs as well, so use this time to plan ahead, consider what areas of clinical and non-clinical work you wish to improve measurably, and discuss this with your educational supervisor or training programme director.

9. Clinical skills

Expect to get more experience specific to your DCT job. Throughout my few months working in the oral and maxillofacial department I have gained new skills managing emergency dental care, including assessment and treatments in A&E. This includes closure of lacerations under local anaesthetic, prescribing when appropriate and onward outpatient appointments if necessary. This role also involves admitting emergency cases and prepping them for theatre, along with the administrative tasks involved with the admission and scheduling emergency theatre. I have enjoyed the team working aspect of the job, working with the registrars and consultants to provide the appropriate treatments for patients.

10. Extra-curricular events

International and national conferences, local lectures and social gatherings can be very useful for CPD and your portfolio, as well as being fun catching up with colleagues and friends.

For Dental Core Training (DCT) 2 and 3 level jobs within the UK, the applicants are required to produce a portfolio to bring to the interview. This is a requirement within the national recruitment process for further training posts. It can be very time-consuming to arrange all of your work in the correct format. I have had experience with this in 2017, and here are just a few tips for future applicants to make this process as easy as possible.

“WHILE A DCT JOB CAN BE HARD WORK, IT WILL BE A VERY EDUCATIONAL AND ENJOYABLE 12 MONTHS”

Continuing Professional Development (CPD)

- Keep a log of your CPD up to date, with certificates to verify the number of hours you have.
- Some CPD events only send certificates after you complete the feedback form, which can have time limitations. Make sure to do this as soon as possible after the event.
- Many journals have CPD questions, which can be easy to do online or with the tear-off answer page, usually at the back.
- Attend a wide range of CPD events, such as conferences, local meetings or journal clubs, as well as some speciality specific events if applicable.



About the author



William Maguire graduated from Queen's University Belfast Dental School in 2015. He completed GPT at Newcastle Dental Hospital and a general dental practice in Alnwick, which combines DFT and DCT1. He is currently completing a DCT2 position in oral and maxillofacial surgery.

Presentations, posters and publications

- Presentations can be given locally, nationally or internationally. This can sound daunting, but start small and work your way up.
- Most dental societies plan annual conferences, which allow for oral or poster presentations to be submitted.
- Posters can be presented at local, regional or international events also. Sometimes a regional audit day will be held by your hospital. Keep a record of the deadlines to submit to this.
- Publications can be difficult to complete but will be very valuable in your portfolio. Having a good mix of publications can show you are well-rounded.

Teaching and research

- Involvement with research can be achieved through volunteering
- Teaching undergraduate students on clinics can be useful to ascertain what areas in which they would like further lessons, and you can work with more senior colleagues to give formal lectures

or present a journal club.

- Read journals and clinical articles. You should be able to critically appraise articles.
- Postgraduate courses in teaching or research can be expensive and time consuming but could provide you with a foundation of knowledge in areas you are interested in.

Compiling your portfolio

This sounds obvious but it is important to buy a brand new folder to give a professional presentation of your work. Print on quality paper and have this done in the weeks before the interview.

I hope this has been of some use to junior colleagues within the profession. While a DCT job can involve hard work, it will be a very educational and enjoyable 12 months. If you have any questions make use of your colleagues in DCT2 and 3 now, as they will be able to help guide you through the process along with your educational supervisor and training programme director. Good luck to anyone applying this year. ■



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Premium on skills in a lucrative market

Success in the growing specialty of implantology demands a rigorous approach to training to enhance your professional reputation

Writer: Maggie Stanfield

It is often said that it's an ill wind that blows nobody any good. Perhaps that could be the mantra for dental specialists operating at the high end of the market, particularly those offering implant surgery.

While this kind of high-end work operates in a relatively small market at the moment, growth in the UK and other European countries is exponential. There is no reason to suspect it will be any different in Ireland.

During the financial crisis, the dental profession took a hammering. Already averse to any kind of ongoing preventative dental care, the population pushed it to the bottom of the essential-costs list.

The minimal free care offered through the Dental Treatment Services Scheme (DTSS) and managed by the HSE disappeared in 2010. The state of the nation's teeth continued to deteriorate.

Skills and experience

The McCarthy Report led to re-entitlement for an annual examination, scale and polish, two fillings and extractions. This basic service covers about 80 per cent of the adult population. The scheme is provided free for Medical Card holders and at a minimal cost of €15 for

most people, including the recently added self-employed.

The key to the developing implantology marketplace lies with having the right skills and experience, but most of all with reputation, word of mouth if you like.

There are full-time masters and PhD courses available at University College Cork and Trinity College as well as dozens of UK universities, but it is the training providers able to offer practical learning within a well-equipped surgery that are attracting applicants.

The Association of Dental Implantology (ADI) is a registered UK charity dedicated to providing the profession with continuing implant education and the public with a greater understanding of the benefits of dental implants.

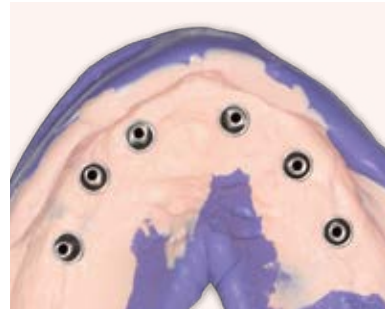
The recently installed new president, Abid Faqir (pictured left), practises in Govan, Glasgow. He is emphatic about the need to make training much more practical, rather than purely theoretical. Academic skills won't be enough. Faqir argues that by far the most important in this context is a competent, empathetic, enthusiastic mentor who can teach and share experience with the learner.

"Mentoring is one of the most important aspects because you build your skills and experience in real-life situations."



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Patients want to come into a place that offers a service that is friendly, experienced and safe

➤ “It’s not realistic to think you can add implantology onto your sales pitch without having built up the appropriate skills level. For one thing, no insurer is going to cover your practice without adequate evidence that you are competent to provide the service.

“I think it’s a self-regulating market, as is pricing. Patients will vote with their feet. If they believe the charges are too high, they won’t come back. If a dentist is too busy, he may be charging too little. If his waiting room is empty, he may have been deemed incompetent or too expensive. Reputation and word of mouth is hugely important.”

Faqir says: “There are huge opportunities across Europe for developing what is really a fairly new market. Not only can it be financially advantageous, it can be incredibly rewarding to see a patient’s confidence returned.

“I highly recommend implantology as a development choice for dentists going forward.”

‘Hands-on’ approach

David Murnaghan, of Boyne Dental & Implant Clinic, in Navan, Co Meath, is preparing to deliver a new one year course to a cohort of six qualified dentists starting in September.

“What I’m hoping is that my course, as opposed to others that are academic and university-led, will have a lot more of a ‘hands-on’ approach. People can watch me doing this kind of specialist work in real life so

that the students can work first assisting and then with me assisting them. I think that too many courses are just training in the theory and don’t put the emphasis on actually carrying out these procedures and understanding the challenges.

“The people enrolled on the course are all Irish and working in Ireland. When they return to their home practices, they will therefore still be able to access help and support readily, including for other members of their team, so that we can develop the skills and understanding on an ongoing basis.”

“IT’S A SELF-REGULATING MARKET, AS IS PRICING. PATIENTS WILL VOTE WITH THEIR FEET. IF THEY FEEL THE PRICES ARE TOO HIGH, THEY WON’T COME BACK”

Dental tourism may represent an element of competition for the local implant marketplace, but Murnaghan is sanguine: “Like anything else in life, you get what you pay for. What about your ongoing aftercare? What if something goes wrong? Supposing you are unhappy about treatment you received, then how can you seek resolution? How many trips to Bulgaria or Hungary are you going to need to make?” ➤

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➤ Faqir is also unconcerned, though for different reasons: “I have friends working in places like Dubai, Eastern Europe and other countries and some of them are absolutely superb. People do need to understand precisely what they’re letting themselves in for. There will perhaps be several return trips. I don’t have any problem at all regarding dental tourism so long as the patient understands precisely what they are doing.”

“PEOPLE WANT AND NEED TO FEEL THAT THEY ARE GETTING CLOSE, PERSONAL ATTENTION AND UNDERSTANDING”

For Murnaghan, access to the surgery, to the expertise and also, crucially, to a range of state-of-the-art equipment forms part of his premium offer. Why go abroad when such high- quality treatment is available close to home?

Murnaghan says setting prices is down to reputation: “My opinion would be that there should be a huge difference in price. That’s absolutely right. People are getting what they pay for and that means

who has the technology and the experience available to give them the results they want without any fear of the unknown.

“It’s a mistake for the media to keep comparing prices and complaining. Each should be valued for what they are and what they offer. They are not all the same.”

Faqir agrees with Murnaghan and believes categorically that: “Costs find their own floor. There is no need to impose government controls.”

Murnaghan adds: “It is very difficult for a patient to assess who will be good, experienced, reliable, safe and able to offer really excellent services. Normally, certainly here, it’s word of mouth that brings in new patients, not advertisements on the internet. Reviews of a practice matter a lot because they are independent comments about treatment received.

Finally, Murnaghan warns, do not neglect the importance of how your practice looks: “Crucially, patients want to come into a place that is friendly, is clean, freshly decorated, calm and thoughtfully laid out. I always think the state of your toilets tells patients an awful lot about your hygiene in the surgery! People want and need to feel that they are getting close, personal attention and understanding.” ■

Access to advanced technology and equipment is a major factor in offering a premium local service



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POSTGRADUATE LECTURE SERIES

Saturday, October 27th
Saturday, November 24th
Saturday, December 15th

We are delighted to announce that the Autumn/ Winter 2018 Postgraduate Lecture Series will commence in October 2018. The programme combines basic sciences, practice management, practical tips and indeed the whole range of dental practice. The monthly modules provide an opportunity for dentists who wish to update their knowledge and are also particularly suited to those preparing for the Diploma of Primary Care and MFD examinations.

PAEDIATRIC SPECIALTY PROGRAMME

Saturday, September 22nd
Saturday, November 3rd

The Faculty of Dentistry, RCSI recently announced the commencement of a paediatric dentistry lecture series. The modules which are held in the Albert Lecture Theatre, RCSI, are open to all dentists in Ireland to attend.

This lecture series is in conjunction with the commencement of a three year FFD Specialty Programme in Paediatric Dentistry with Hamad Medical Corporation, Qatar. This Specialty Programme will lead to the HMC Qatari based residents taking the FFD RCSI (Paediatric Dentistry) examination in 2020.

1-DAY INTENSIVE REVISION COURSE

Saturday, September 15th

As part of the Autumn 2018 Postgraduate Dental Education Programme, the Faculty of Dentistry is holding a 1-day Intensive Revision Course on September 15th 2018

This course will be strongly examination focused and will provide helpful information and guidance for those planning to sit the Diploma of Primary Care Dentistry & MFD examinations.

All modules in the Autumn/Winter 2018 Programme are being made available **FREE OF CHARGE** to attend. Advance registration is essential due to limited availability.

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Suitability of patients for conscious sedation

Dentists have to consider carefully a wide range of health conditions before deciding on the appropriate approach for those that need to be sedated

Dr Laura Fee

Patients suitable to undergo conscious sedation (CS) include those with moderate-severe anxiety, a swallow/gag reflex or a mild learning/physical disability such as cerebral palsy. Well-controlled medical conditions such as asthma, epilepsy, gastro-oesophageal reflux and mild hypertension are exacerbated by stress, making CS hugely beneficial.¹

Hospital-based intravenous (IV) CS helps patients with severe systemic disease or disability to avoid unnecessary general anaesthesia (GA). However, a small percentage of patients will still simply not tolerate dental treatment without being 'knocked out', making GA essential to facilitate dental treatment.

An in-depth medical, dental and social history is mandatory at a visit before treatment. It is important to ascertain the patient's degree of dental anxiety. This helps determine the most suitable sedation technique as some patients with severe needle phobia are unable to tolerate cannulation making inhalation sedation the best option for them.²

General health considerations

ASA Physical Status Classification³

- ASA 1 – Healthy person – suitable for IV/inhalation sedation
- ASA 2 – Patient with mild systemic condition – mild disease with minimum functional limitation – generally

suitable for IV/inhalation sedation in primary care

- ASA 3 – Patient with severe systemic condition – significant functional limitations such as with COPD – may be suitable for inhalation sedation in primary care, but otherwise careful evaluation for hospital-based sedation
- ASA 4 – severe systemic disease constantly threatening life – myocardial infarction or stroke <six months ago – anaesthetist-led team
- ASA 5 – Moribund.

About the author



Dr Laura Fee graduated with an honours degree in dentistry from Trinity College, Dublin, where 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. She has a Certificate in Implant Dentistry from Northumberland Institute of Oral Medicine and has been awarded the Diploma in Implant Dentistry with the Royal College of Surgeons Edinburgh.

Age

Age is not an absolute contraindication to sedation but older patients are more sensitive to sedatives.⁴ The incidence of delirium following treatment with midazolam was 10 per cent higher in the elderly.⁵ Elderly patients also tend to have poorly tethered, friable veins, which may be more susceptible to cannulation damage. IV sedative agents in children <12 is not recommended unless provided by a paediatric specialist. Disinhibition in adolescents is common and even slight over-



- 2 sedation can lead to rapidly deteriorating respiratory depression.⁶

Cardiovascular System

(See table below).

There should be no elective surgery if the diastolic value is >110 mmHg. However, when measuring blood pressure always consider the risk of “white coat hypertension”.

Patients with controlled/uncontrolled hypertension have a more labile haemodynamic profile during CS making hypotensive swings more likely.⁷

It has been shown that there is little evidence that a BP <180 mmHg/ 110 mmHg causes perioperative complications. However, a BP $>180/110$ mmHg is linked to perioperative ischaemia, arrhythmias and cardiovascular lability. There is no clear evidence that deferring anaesthesia lowers perioperative risk. The intraoperative BP should be within 20 per cent of best BP estimate.⁸

Dentists must evaluate pre-operatively for the presence of target organ damage such as coronary artery disease. Target organ damage lowers the treatment thresholds for raised BP.⁹

A study examining the cardiovascular effects of epinephrine with IV midazolam examined 75 patients with heart disease treated in two groups. The rate-pressure product (RPP) was used to indicate myocardial ischemia. This is the systolic BP x

heart rate = RPP, which is a reliable indicator of myocardial oxygen consumption. Ischemic changes were demonstrated in patients with an RPP of $>12,000$, increasing their CS risk. The pressure rate quotient, which is mean BP divided by heart rate, also assesses a patient's suitability for CS. The results of this study indicated that treatment with midazolam and epinephrine does not generate significant ischemic risk. It is important that the lowest effective dose of local anaesthetic containing epinephrine is used and that intravascular injections are avoided.¹⁰

NYHA classification of angina

- 0 healthy
- 1 no hindrance to normal physical exertion
- 2 slight limitation, angina with fast walking, ascending stairs, excitement
- 3 significant limitation of regular movement. Angina on climbing normal staircase
- 4 angina with minimal activity/rest.

Increased stress levels exacerbate angina, making sedation and good local anaesthesia important in reducing heart rate.

Unstable angina contraindicates elective treatment. Patients with angina that affects normal daily activity such as NYHA 3 are unsuitable for sedation in primary care. If the GP/cardiologist confirms stability of angina then NYHA 2 patients can progress with elective sedation.¹¹

Post MI

At six months post-infarction a patient is classed as ASA 3. The risk of re-infarction is 16 per cent. Elective sedation in well-controlled patients reduces stress, helping to lower risk.

Post-percutaneous coronary intervention (PCI)

Patients must wait three months after stenting before elective sedation. Angina must always be successfully controlled before treatment.¹

Classification of cardiac functional reserve capacity

- Class 1: Able to climb a normal flight of stairs without stopping. Can continue walking with no rests – safest for IV CS
- Class 2: Climbs without rest. Rests on top – safest for IV CS
- Class 3: Climbs with rest during ascent – outpatient CS unsuitable
- Class 4: Unable to climb stairs.

Patients with palpitations

Patients with benign palpitations benefit from the stress reduction produced by CS. A patient with malignant palpitations, however, must be treated in hospital. Any individual with an automated implantable cardioverter-defibrillator is unsuitable for treatment in primary care. A hospital setting is mandatory for patients with a pacemaker or those following AV node/conduction pathway ablation surgery. Wolff-Parkinson-White syndrome is an absolute contraindication to sedation.¹

Respiratory disease

Midazolam has a greater effect on the respiratory system compared to the cardiovascular system. Healthy patients who present with respiratory infections on the day of treatment should be rescheduled.

Cardiovascular System

ASA ACCORDING TO BLOOD PRESSURE (BP):

<140 systolic and <90 diastolic	ASA I	Primary care suitable
140-160/90-94 mmHg	ASA II	Primary care suitable
160-199/95-115 mmHg	ASA III	Specialist unit
200 systolic and >115 diastolic	ASA IV	In-patient services

Careful assessment of the patient's disease and functional reserve will indicate the most suitable setting for CS. It must be remembered that opioids act synergistically with sedation with regards to respiratory depression.¹²

Dyspnoea grading system¹²

- 0 Healthy
- 1 Mild dyspnoea
- 2 Moderate – limited outdoor movement – hospital management safest
- 3 Marked dyspnoea on minimal exertion indoors – unsuitable for outpatient sedation
- 4 Dyspnoea while resting – unsuitable for outpatient sedation.

Asthma

The dentist must ensure the asthmatic is well controlled. A mild asthmatic is considered ASA 2; however, an untreated Grade 2 is unsuitable for treatment in primary care. Hospital management is necessary for ASA 3 patients who have frequent episodes/attacks. It must be borne in mind that theophylline can interact unfavourably with IV midazolam. Inhalation sedation can be a safer option due to guaranteed oxygen levels.¹³

COPD

Extreme caution is needed with COPD patients who suffer with emphysema or bronchitis. A patient with chronic bronchitis is ASA 3. Midazolam results in dose-related respiratory depression, which is more exaggerated in COPD patients. Hospital treatment of the patient in an upright position with supplemental oxygen is required due to the increased risk of hypoxia.

If a patient needs supplemental oxygen at home or has severe orthopnoea or a productive cough then sedation is contraindicated.¹²

Renal system impairment

Hepatic microsomal oxidation is responsible for midazolam's biotransformation. This is susceptible to factors such as old age, hepatic cirrhosis and drugs (cimetidine) as they reduce the oxidative capacity. A high regular intake of alcohol increases midazolam clearance.

Renal failure causes a build-up of metabolites which prolongs sedation. CS is contraindicated in cases of advanced liver disease.¹

Patients undergoing haemodialysis or continuous ambulatory peritoneal dialysis are unsuitable for sedation.

Haemodialysis patients swing from being centrally underfilled where they are at risk of hypotension to centrally overfilled. Day 2 is considered the safest time to treat but outpatient CS is still best avoided. Post-renal transplant patients with good renal function may be suitable for hospital-based CS.¹¹

Methadone and midazolam are both metabolised by the cytochrome P450 3A pathway. Chronic methadone use leads to the induction of this pathway with more rapid midazolam metabolism and higher dosage requirements.¹⁴

Neurological disease

IV midazolam helps to reduce involuntary movement in patients with multiple sclerosis and Parkinson's disease making dental treatment more comfortable. Many patients will have reduced swallowing capacity so sitting the patient upright with adequate suction is vital. Controlled epileptics are suitable for CS although more research is needed to develop clearer guidelines. Liaising with the GP/neurologist confirms if the patient has a driving licence and when the last three seizures occurred. Anti-epileptic drugs such as

phenytoin can increase or decrease plasma concentration of sedatives.¹¹

Recovered stroke victims may experience a re-emergence of symptoms when benzodiazepines are administered. Light sedation can trigger a re-occurrence of symptoms such as right-sided paralysis and dysphasia. Sedation is contraindicated for one year after a stroke.¹⁵

Haematological disorders

Sedation should be avoided in patients with sickle cell anaemia and thalassaemia. This cohort are high risk for reduced oxygen tension with respiratory depression or over-sedation. Inhalation sedation is preferred.¹⁶

Pregnancy

The second trimester is the safest time to treat, but the mother's metabolism is altered due to the increased demands of the baby. This makes sedation unpredictable. There are also foetal teratogenic risks.¹²

Intellectual or physical impairment

Patients with mild learning disabilities are suitable for sedation. Severe learning or physical difficulties require management by an anaesthetist-led team.¹⁷

Endocrine diseases

Diabetes

HbA1c helps identify pre-diabetic patients. It also helps recognise diabetics at risk of complications. A BM check of >5mmol/l pre-treatment is advisable.¹⁸

Pre-operative starvation can upset blood sugar levels. The evidence for fasting is low so a degree of clinical judgement required.¹⁹ Well-controlled diabetics are best treated in the morning to avoid interference with their insulin



- routine. Poorly controlled diabetics requires hospital management. Inhalation sedation can be a safer option as it is easily reversible.¹⁶

Adrenal insufficiency

Patients on long-term steroids must be treated in an anaesthetist-led facility to avoid an adrenal crisis.¹³

Thyroid disease

Hyperthyroidism can cause tachycardia and atrial fibrillation. Hypothyroidism can cause bradycardia, making CS unpredictable.¹²

Specific drug considerations

- Cardiac medication: Ace inhibitors, beta blockers, calcium channel blockers and nitrates enhance the hypotensive effect of midazolam²⁰
- Erythromycin effects metabolism of midazolam²¹
- Midazolam interacts with herbal medicine potentiating CNS depression²²
- Opioids such as heroin can cause significant respiratory depression with midazolam. Veins are often unusable¹
- Cocaine adversely effects respiratory/cardiovascular control with sedation¹
- Cannabis makes oxygen saturation levels unpredictable during sedation¹
- Central nervous system depressants for mental health conditions can act synergistically with benzodiazepines. Tolerance may have developed in these patients similar to recreational drug users.²⁰

Assessment of vital signs

Blood pressure, oxygen saturation, BMI, heart and respiratory rate must provide a satisfactory baseline indicating fitness for sedation. Sometimes a screening may reveal an unknown condition

requiring further investigation by a GP before sedation can be performed.¹⁶ It is important to predict a patient's risk for conscious sedation. Hospital-based sedation is advisable in the following instances:

- Baseline SaO₂ is <95 per cent
- Patients with respiratory disease such as COPD
- Patients classified as ASA 3-4
- Patients with a history of more than one attempt for previous intubation.²³

BMI

A patient with a BMI of <35kg/m² is suitable for primary care CS. Caution is advised with a BMI of 35-40kg/m² especially if the patient has co-morbidities such as hypertension and diabetes.

The standard dental chair has an upper weight limit of 140kg making referral to hospital sometimes necessary for the use of a DIACO chair which can hold 500kg. Successful cannulation can be difficult due to the effects of increased adipose tissue on vein morphology.²⁴

Sleep apnoea is more common in individuals with a BMI of >35. Sedation is an absolute contraindication in patients with obstructive sleep apnoea (OSA). The pharyngeal airway dilator muscles are highly sensitive to benzodiazepines.²⁵ The STOP-BANG questionnaire is a useful screening tool for identifying potential cases of OSA.²⁶

Malampatti system

This is a visual assessment of the distance from the base of the tongue to the soft palate. A Class 3 or 4 patient is at increased risk of airway obstruction. The patient must be asked to protrude their tongue. It is important to document the level of visibility of the back of the mouth.²⁷

A difficult airway can also be judged if the thyromental distance

is <6.5cm. A short, fat neck and receding jaw is an airway risk. Males are more susceptible to airway obstruction.²⁸

Indications for inhalation sedation (IS)

IS can be used from the age of three. Patients who are allergic to benzodiazepines or those tolerant to them due to treatment for anxiety/insomnia are suitable for IS. In patients previously addicted to benzodiazepines IV, CS can reactivate dependence making inhalation sedation safer.³⁰

Contraindications to IS

IV sedation suits mouth-breathers, anyone taking methotrexate due to the anti-folate effects of IS and also someone who had vitreoretinal surgery within 12 weeks. Severe autism or ADHD patients are unsuitable for IS due to compliance difficulties. A hearing impediment reduces the hypnotic suggestion aspect of IS treatment making CS more effective.¹⁶

Non-titratable sedation techniques

If titratable techniques are deemed inappropriate then oral or intranasal sedation may be considered. Special care dental patients with challenging behaviour benefit greatly from these advanced techniques.³¹

Conclusion

A treatment plan is devised by combining the information gathered during history-taking and the clinical exam. The patient must be of sound mind to give their valid written consent at a visit separate to treatment. If needed, the presence of a responsible adult escort must be possible.³² Careful consideration regarding the nature of the patient's disease and functional capacity is essential. The dentist has a duty of care to predict patients at risk of

complications with CS such as cardiac, respiratory or neurological deterioration. After risk stratification, the optimum timing and setting for treatment must be decided to ensure patient safety.

There will always be a place in dentistry for general anaesthesia, especially for treatment plans involving extensive work on multiple teeth that make multiple sedation visits impractical and overall more

expensive. Also in certain sedation cases, patients can move unpredictably, compromising the quality of the dentistry performed, which may necessitate the use of general anaesthesia. ■

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Salivary diagnostic tests of periodontal diseases

Researchers looking for unequivocal markers of periodontitis to develop a simple test for infection have been focusing on saliva, a mirror of the body

Dr Fabiano Galassi

Periodontitis is a term that refers to a heterogeneous group of diseases characterised by loss of the tooth-supporting tissues. It is well established that periodontal diseases are of an infectious nature and the impact of dental plaque biofilms on the etiology of periodontal diseases has been studied in details. In fact, certain bacterial pathogens are considered to play a significant role in the pathogenesis of periodontitis, formation of the periodontal pocket, destruction of the connective tissue and resorption of the alveolar bone.

Therefore, the primary cause of periodontitis is bacteria, and when the quantitative and qualitative change in bacterial composition in the oral cavity is such that homeostasis cannot be maintained any longer, the host response appears to be impaired and the activity of the tissues become abnormal.

A publication from Hasturk et al. (2007) outstandingly defined the possible pathogenesis of the periodontal infections; in fact, Hasturk and co-workers suggested that while the etiology of periodontitis is bacteria, the pathogenesis is inflammatory. In other words, the interaction

between the pathogenic bacteria and the host's defence system could lead to the development of an inflammatory process.

Once periodontitis is established, the inflammatory infiltration of periodontal tissues is composed of different immunological cell types. These cells produce a large repertoire of specific types of cytokines and chemokines, which could play a significant role in the pathogenesis of periodontitis. Some of these, together with the end products of periodontal tissue destruction, could act as possible biomarkers and eventually could have diagnostic value by identifying patients with enhanced disease susceptibility and sites with active disease. They could also serve as surrogate end points for the monitoring of the patient treatment effects and treatment status, to tailor the maintenance care based on the biological needs of the subjects.

These biological mediators could support the clinical measurements already used in the routine diagnosis of periodontal diseases such as probing pocket depth, bleeding on probing, clinical attachment levels, plaque index and radiographs quantifying alveolar

bone level. Nevertheless, they are often of limited usefulness because they are indicators of previous periodontal disease rather than the present disease activity. In addition, current periodontal examination procedures performed at single visit cannot determine whether or not sites are currently undergoing additional attachment loss.

As various immunopathogenic mechanisms are involved in the disease process of periodontitis, a combination of indicators is needed to improve the specificity of periodontal disease diagnosis. On the basis of the current understanding of the complexity of periodontitis, the identification of one single diagnostic marker for all forms of periodontal disease seems illusory.

Nevertheless, researchers have been searching actively for unequivocal markers of periodontitis in different biological sources such as blood or serum, subgingival plaque sample, gingival crevicular fluid (GCF) and saliva to develop a simple test, to be used as chairside test or home-use device, to determine whether a patient suffers from periodontitis and needs therapy, as opposed to another patient who needs no

intervention even though he/she has gingivitis and/or to establish a “custom-made” frequency of recall appointments.

The aim of this literature review is to summarise data from the literature on periodontal disease markers with special focus on saliva.

Saliva and candidate biomarkers of periodontal diseases

Saliva is a mirror of the body that contains a large number of proteins and peptides that are responsible for maintaining the integrity of the oral cavity (see table below).

Saliva also meets the demand for inexpensive and easy-to-use diagnostic aids due to the non-invasive and simple nature of its collection. It can be collected with or without stimulation. The collection of gland specific saliva (from parotid, submandibular and sublingual gland) can allow differences in the amount of fluid and constituents of each gland to be determined. Differently, whole saliva consists of a mixture of oral fluids, and includes secretions of

the major and minor salivary glands and constituents of non-salivary origin, such as derivatives from GCF, serum and blood cells in case of bleeding gingiva or oral wounds, and expectorated bronchial secretions. It might also contain bacteria, bacterial products, viruses, fungi, desquamated epithelial cells and food debris.

The use of saliva for diagnosis of periodontal disease activity has been the subject of considerable research activity; in fact, it contains locally and systemically derived markers of periodontitis, thus offering the basis for a specific test. Several potential markers have been investigated to produce an assay system suitable for use in dental practices.

The main candidates in the search for biomarkers of periodontal disease activity fall into different general categories:

- 1 Inflammatory and immune products
- 2 Host-derived enzymatic and non-enzymatic proteins
- 3 Connective tissue degradation products
- 4 Products of bone resorption

- 5 Human salivary proteome and transcriptome
- 6 Substances associated with putative pathogens.

Inflammatory and immune products

While the bacterial infection triggers the destructive process, the host immune response to the bacterial challenge is responsible for the molecular processes leading to periodontal tissue

About the author

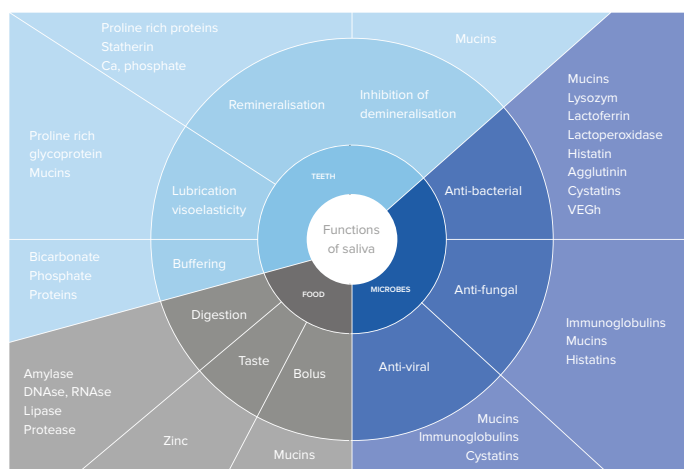


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Dr Galassi has great interest in dental research, and he has published in peer-reviewed journals and written some chapters for periodontology textbooks.

Dr Galassi is a member of the European Federation of Periodontology (EFP) and the Italian Federation of Periodontology (SIdP). Now works in the Seapoint Clinic and Gleville Dental and his focus is on the treatment of periodontal disease, bone regeneration, cosmetic periodontal plastic surgery and implant dentistry.





➤ destruction. The interaction between the pathogenic bacteria and their (toxic) components and the host defence system could lead to the development of a periodontal pockets, loss of connective tissue, and bone resorption. Once periodontitis is established, the inflammatory infiltration is composed of different cell types, such as neutrophils, T and B lymphocytes, and macrophages migrating into the perivascular connective tissue.

The substances released by the inflammatory immune cells as well as by resident fibroblasts endothelial cells and others during the disease process include a large repertoire of molecules, such as antibodies, complement proteins, acute phase proteins and a broad range of inflammatory mediators (i.e. cytokines, chemokines, arachidonic acid metabolites etc.).

A recent investigation found that salivary level of MIP-1 α was significantly correlated with *Aggregatibacter actinomycetemcomitans* positive students who developed periodontal disease six to nine months before radiographic detection of bone loss. MIP-1 α level was also significantly associated with increasing probing depth and the number of pockets > 6mm (Fine et al. 2009).

Host-derived enzymatic and non-enzymatic proteins

Non-enzymatic proteins have been examined in a number of studies to investigate whether or not there was a relation between periodontal disease and these

proteins in saliva. For example, platelet-activating factor (PAF), a potent phospholipid inflammatory mediator, was identified in the mixed saliva of subjects with periodontal disease. Salivary PAF levels have been found to be significantly higher in untreated chronic periodontitis patients compared to controls (Garito et al. 1995). Its levels correlate with clinical indices of disease severity and extent of the disease. Furthermore, a longitudinal evaluation of the effect of periodontal therapy on salivary PAF levels in chronic adult periodontitis patients was studied and initial salivary PAF levels were found to be decreased following supragingival plaque control and further reduced following scaling and root planning (Rash et al. 1995).

Saliva contains also numerous enzymes that degrade proteins, proteoglycans, lipids and carbohydrates. Enzymes in saliva can originate from GCF, salivary glands, microorganisms, epithelial cells and polymorphonuclear leukocytes (PMNs). PMNs are an important cell type in host defense against periodontopathogenic bacteria. Their primary role of phagocytosis of microorganisms may promote local tissue destruction by the release of tissue-degrading enzymes. In fact, PMNs granules contain hydrolytic neutral enzymes, such as elastase, cathepsin B, cathepsin D, β -glucuronidase. Matrix metalloproteinases (MMPs), peroxidase, lysozyme, lactoferrin, and many other enzymes are also

sheltered in PMNs granules. Some of these are now discussed below.

MMPs represent a neutrophil granule content, which are involved in many biological processes, including the tissue destruction in periodontitis. MMPs degrade mostly components of the extracellular matrix (ECM) and many non-ECM molecules. The major MMPs in neutrophils are MMP-8 and -9 and these are the main collagen-degrading enzymes in saliva. Since MMPs can potentially cause tissue damage, their activity is controlled by four members of the tissue inhibitor of metalloproteinase family (TIMP). The presence of MMPs in saliva has been studied comprehensively with ELISA techniques. The levels of MMP-1, -3, -8 and -9 and their endogenous inhibitor, TIMP-1, in saliva of patients with adult periodontitis were compared to localised juvenile periodontitis and controls. Both MMP-1 and TIMP-1 were detected in all studied saliva samples, but interestingly no significant differences were detected between adult periodontitis and healthy control groups (Ingman et al. 1996).

Antioxidant activity and capacity

PMNs and macrophages produce reactive oxygen species (ROS) within their phagolysosomes and these may spill over into the tissues during phagocytosis or when they degenerate. This may cause bystander tissue damage around these cells. ROS have a great capacity to damage cells and tissues and are scavenged for within the tissues by antioxidants.

The antioxidant capacity of saliva has been investigated in healthy and chronic periodontitis patients. The major aqueous

“ SALIVA CONTAINS NUMEROUS ENZYMES THAT DEGRADE PROTEINS, PROTEOGLYCANS, LIPIDS AND CARBOHYDRATES ”

antioxidant component of whole saliva was found to be uric acid with lesser contributions from ascorbic acid and albumin. Using biochemical methods, the antioxidant capacity of the saliva was not found to be compromised in chronic periodontitis patients, and this was attributed to increased salivary flow and antioxidant flow from GCF.

Another research group investigated peripheral (serum) and local (saliva) total antioxidant (TAO) capacities of chronic periodontitis and healthy patients using an enhanced chemiluminescent assay (Chapple et al. 1997). There were no differences in the serum TAO capacities but the salivary TAO capacities were significantly lower in the chronic periodontitis group compared with the healthy group. Thus the saliva of chronic periodontitis patients may have reduced TAO capacity, which could result from increased ROS

production by inflammatory cells. The enhanced chemiluminescent assay provides a rapid simple method of measuring the total antioxidant defense in small volumes of biological fluid and hence could have diagnostic use. More work on its relationship to the progression of periodontal disease, and its capacity as biomarker needs to be done before this could be properly assessed.

Another enzymatic category, which has received the attention of periodontal researchers, is represented by enzymes released by dead cells (cytosolic enzymes). Aspartate amino transferase (AST) and lactate dehydrogenase (LHD) are soluble cytoplasmic enzymes that are confined to the cell cytoplasmic enzymes, and they can be released by dead or dying cells. Since cell death is an integral and essential component of periodontal tissue destruction, these enzymes should be released during this process and should

pass with the inflammatory exudates into GCF and saliva.

While we do not have relevant studies on AST in saliva, a recent report demonstrated an increased LDH salivary activity in association with periodontal disease, specifically with the presence of calculus and pockets greater than 5mm (de La Peña et al. 2007). Clearly these markers are yet to be further investigated for their potential as salivary biomarkers for periodontitis.

Of the potential markers, PMNs-derived enzymes appear to be worthy of further study. The concentrations of host-derived elastase, chitinase and β -glucuronidase are increased in patients with periodontitis and decrease following therapy (Lamster et al. 2003).

However, at the present state of knowledge, their salivary levels are not predictive of disease activity, which is the basic requirement of a diagnostic test. ■

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The power of regeneration

The wide-ranging application of platelet rich growth factor Endoret (PRGF) in surgical dentistry is helping to make outcomes safer and more predictable

Dr Jerome P Sullivan

Due to its powerful regenerative properties, platelet rich growth factor Endoret (PRGF) is being increasingly used in many fields of medicine, such as plastic surgery and dental implantology.

It has been shown to reduce scarring, rejuvenate damaged facial tissue, and accelerate wound healing. Endoret (PRGF) is proven to promote angiogenesis, cell migration, cell proliferation and the secretion of growth factors active in the wound healing cascade, while at the same time decreasing inflammation and pain.

Through this simple case report, I would like to show how Endoret (PRGF) can be applied in the field of dental implantology to make treatment outcomes more predictable by optimising healing conditions.

Preparation of platelet rich growth factor (Endoret)

Step one is to collect a small quantity of the patient's blood. Four collection tubes, each containing 9ml of blood, are filled. A total of 36ml is usually sufficient

for most implant cases (Fig 1)

However, in larger cases where more augmentation is required it is usual to collect eight tubes (72ml).

Once the blood has been collected, the patient is asked to return to the waiting area while the fractionation process is carried out which takes about

15 minutes. The collection tubes are transferred to the centrifuge machine (Fig 2). At the end of the eight-minute cycle the collection tubes are immediately returned to their stand. It is important that this is done carefully with minimal disruption to the blood, which is now separated into four distinctive bands.

Each tube is now marked. The erythrocytes are heaviest and lie in the bottom half.

Next is a thin buffy layer approximately 0.5cm thick. This is the leukocyte fraction which must be avoided as these cells will evoke pain and inflammation.

In the top half of the tube is the liquid fraction of interest. Concentrated in platelets, plasma and growth factors, this straw-coloured layer is itself divided into two fractions: 1 and 2.

While fraction 1 (F1) is richer in the fibrin, which will create the collagen matrix for wound healing, fraction 2 (F2) contains the greatest concentration of platelets and protein markers. It is these protein markers which signal to the regenerative cells and trigger their activity.



About the author



Dr Jerome P Sullivan BDS, DiplImpDent RCS (Eng), PG cert sed UCL

qualified from Manchester University in 1993. He graduated with a diploma in dental implantology from the Royal College of Surgeons (UK) in 2011, and was awarded an inaugural gold medal for the high standard of his clinical cases. He has become increasingly involved in the field of platelet rich growth factor, and he now uses this technique to deliver implant solutions to patients with complex dental needs

Marking each tube, a safe distance of 0.5cm from the visible upper limit of the buffy layer, you then measure two centimetres up and mark the tube again. This threshold divides the most superior layer F1 from the second layer F2 (Fig 3).

Using the plasma transfer device, F1 and F2 are then separated into labelled collection tubes F1 and F2. Without activation, these fractions will remain viable for up to four hours.

At this point, I will normally ask

“ IN THIS SIMPLE CASE, ALL THREE FORMS OF ENDORET (PRGF) WERE USED TO ACHIEVE A SMALL LATERAL AUGMENTATION OF THE IMPLANT SITE ”

for the patient to return and we follow the usual asepsis protocol for surgery and deliver the local anaesthetic and or intravenous sedation where required. When placing implants, I always require two dental surgery assistants, one sterile and the other non-sterile.

Depending on the planned length of the procedure, I will indicate to my assistants when F1 and F2 should be activated with calcium chloride (Fig 4). Once activated the fractions are transferred into sterile glass bowls and placed into a special oven that incubates them at body temperature for 15-25 minutes (Fig 5).

Endoret (PGRF) is used in three

distinct forms. There is the clot (F2), into which autogenous bone collected during implant site preparation is added, and also xenograft in situations where more augmentation is required (Fig 6).

There is the fibrin membrane (F1), which is placed on top of F2 (Fig 7). This stimulates fibroblasts which accelerates wound closure and often creates thicker mucosal biotype.

The liquid form of Endoret (PRGF) is used to promote healing after ridge-splitting procedures, and to improve implant integration by up to 40 per cent when the implant surface is coated immediately before placement.

In this simple case, all three forms of Endoret (PRGF) were used to achieve a small lateral augmentation of the implant site, as well as promote osseointegration of the implant and wound closure by primary intention.

A number 15 scalpel was used to make a palatally inclined incision at the site of the missing upper right first premolar. This cut was extended mesially and distally around the adjacent teeth without relieving incisions.

A number 12 scalpel was then used to make a periosteal releasing incision in the pocket flap created being mindful of the proximity of the infra-orbital nerve.

After the creation of the pilot hole using a drill with irrigation at 1800rpm, the remainder of the osteotomy was created following a biological drilling protocol advocated by Professor Eduardo Anitua, Scientific Director of BTI Biotechnology Institute.

This involves preparation without irrigation at speeds of



Fig. references

1

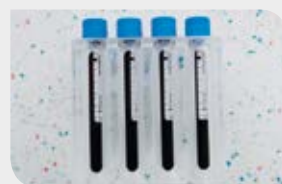


Fig 1: Collection tubes each containing 9ml of blood

2



Fig 2: Centrifuge machine being loaded

3



Fig 3: Blood now separated into fractions

4



Fig 4: Fraction 1 and Fraction 2 collection tubes



➤ between 50 and 150 rpm. A high level of control can be maintained at these low speeds while biologically viable autogenous bone debris can be collected from the drill flutes which is transferred to the F2 for later augmentation.

Immediately before implant placement, the selected implant's entire surface was dipped in liquid Endoret (PRGF). The liquid was also injected into the osteotomy. Engine placement of the Implant then proceeded as per normal protocol.

Lateral augmentation was completed easily and safely without the need for a membrane and in this case, without xenograft either. The F2 clot containing the collected autogenous bone drill debris was first placed against the bone (Fig 8). In situations where more lost bone volume needs to be replaced, a second clot of F2 containing xenograft is layered on top of the autogenous layer.

Finally, the F1 fibrin membrane was placed on top (Fig 9).

The wound was closed with three interrupted sutures, which were removed after four days (Fig 10).

The autologous nature of Endoret (PRGF) means it has many applications in dentistry beyond the simple implant case described here.

In the atrophic maxilla where residual bone height below the sinus is very low, Endoret (PRGF) in combination with short implants can be used in a transalveolar elevation approach to gain 2-3mm of additional bone height very safely. Such an approach is now being used widely to avoid more traditional and invasive methods such as the lateral window technique.

In the field of oral surgery accelerated and improved healing has obvious benefits; for example, the avoidance of dry socket through socket preservation with

Endoret (PRGF), and the treatment of bisphosphonate osteoradionecrosis where necrotic bone has been resected.

Combining Endoret (PRGF) with traditional guided bone regeneration procedures significantly reduces the incidence of wound dehiscence as well as eliminating the need for costly and technique sensitive collagen membranes. When mixed with xenografts such as Bio Oss, Endoret (PRGF) will attract the osteogenic cells necessary to promote true bone formation.

Backed up by more than 15 years of research, and with more than 700,000 patients treated from 20 countries without adverse effects being reported, the applications for Endoret (PRGF) in surgical dentistry are wide-ranging, predictable and safe. ■



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🕒 Fig. references

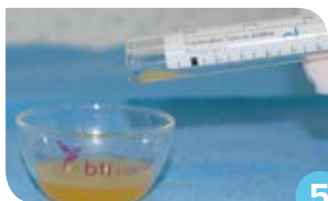
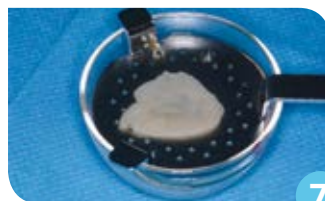


Fig 5: Fraction 2 being transferred to glass bowl ready for incubation



Fig 6: Fraction 2 clot containing autogenous bone debris



Fraction 1 clot shaped in a special press to form a membrane.



Fig 8: Fraction 2 clot being placed against the bone



Fig 9: Fraction 1 fibrin membrane positioned over Fraction 2 clot



Fig 10: Healing at four days.



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Ideas, insight and inspiration

A more balanced view – the role of the KPI

Instead of counting anything and everything, strive to get a better, focused perspective of the measures that drive the performance of your business

Alun K Rees



According to *Forbes* magazine the phrase “If you can measure it, you can manage it” originated in the 15th century. The late Peter Drucker, probably the greatest thinker and writer on management and business, took the phrase and modified it to “What gets measured gets improved”.

It is difficult to dispute Drucker’s wisdom; if you want to lose weight you need to know from where you are starting and what the scales show you. If cycling or running is your thing, then you will almost certainly want to know how far you travelled and how long it has taken.

However, some seem to presume that just knowing these figures will be an incentive to improve them – sadly that does not always follow. For change to happen there has to be

a good reason and motivation.

W. Edwards Deming, the man responsible for Japan’s post-war success, argued: “Just because you can measure everything doesn’t mean that you should”. Certainly I have visited some dental businesses where the counting of anything and everything has become such a laborious ritual that there is no time or energy for any sensible analysis or interpretation of results.

The acronym KPI, short for key performance indicator, is regularly used, often without thought for its true definition: “A KPI is a quantifiable measure a company uses to determine how well it meets the set operational and strategic goals”.

Unfortunately many dental businesses have little more in the way of set goals beyond “survive

until the end of the month”. This results in them floating with the tide, at the whim of the changeable business weather and unsure of their direction.

Often when KPIs are measured they are limited to the financial metrics. As important as these are, they tend to overemphasise the short term. To be a winner in the long term, a more balanced view is needed. Kaplan & Norton writing in the *Harvard Business Review* in 2005, described four perspectives of the measures that drive performance in what they called “The Balanced Scorecard”:

Financial Perspective

How efficient are the practice operations?

Customer Perspective

How do our patients see us?



Alun K Rees BDS is The Dental Business Coach. An experienced dental practice owner who changed career he now works as a coach, consultant, trouble-shooter, analyst, speaker, writer & broadcaster. He brings the wisdom gained from his and others’ successes to help his clients achieve the rewards their work and dedication deserve.



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➤ **Internal Business Perspective**

What do we need to excel at?

Innovation and Learning Perspective

How can we continue to improve and create value?

Financial Perspective

Let's start with the financial KPIs. These need to be measured daily, weekly monthly, quarterly and annually. They include:

- production – individual and the practice as a whole
- average daily productivity of all fee earners via daybook
- total practice expenses
- expenses broken down by categories
- net profit
- cash flow, highs, lows and all points in between
- percentage net profit of practice every month as a graph
- bank accounts with the worst and best figures as graphs
- analysis of and changes in operating expenses
- average production

- per patient
- profit per practitioner
- comparison of expenses with budgets
- debtors
- creditors.

Customer Perspective

Our patients tend to value things in terms of time, quality, performance and service and, of course, price. So we should record:

- number and (accurate) source of new patients
- number of enquiries vs. number of new patient appointments booked
- number of patients not returning to the practice either for treatment or recall.
- number of complaints.
- recalls – expected vs. attendance
- average appointment time and waiting time (punctuality)
- emergency and post-treatment visits
- results of post-treatment questionnaires.

Internal Business Perspective

Here we examine where we need to excel:

- percentage of cancellations/rescheduling
- range of treatments offered
- uptake of treatments
- external and internal marketing initiatives and systems
- team – amount of “pain”, including unplanned days off, lateness and sickness (using the Bradford Factor Calculator to measure)
- staff turnover, and the results of exit interviews
- understanding that the practice brand is based on consistency with the same excellent experience for everybody
- our patient journey is documented and reviewed regularly at team meetings.

Innovation and Learning Perspective

Can we continue to improve and create value?

- What skills need to be learned to expand the treatments offered?
- All team members have personal development plans

(PDPs), which are reviewed at six-monthly appraisals.

Benchmarking

Is defined as evaluating something by comparison with a standard, ideally best practice. In principle, this sounds good.

However, in many cases it is difficult to know if the “industry standard” is completely relevant to your business. It may be purely of interest. Instead I will usually compare practices with their own history, monthly, quarterly and yearly and the goals they have set for themselves to attain.

The use of KPIs should not be restricted to practice owners and managers. They should be shared across the board with all team members who should understand their use and importance.

Often I find practices restrict their measurements to purely the financials and thus have taken the short-term view. For a bigger picture of the general health of your practice, you need to measure much more than money. ■





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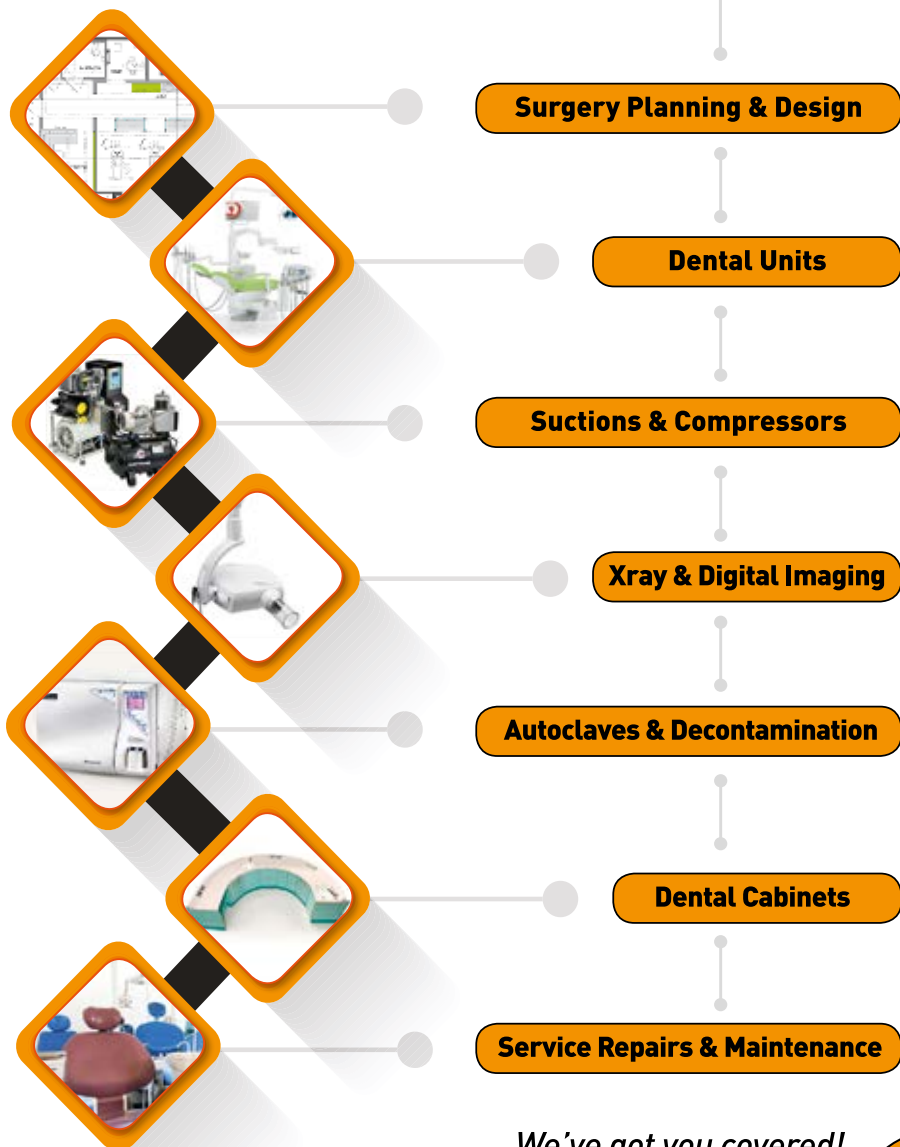
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Why you need a practice manual

In the frenetic pace of everyday business, having a proper guide to processes will help to create an efficient, patient-focused service

Richard Pearce



here are a multitude of activities happening within a practice, every minute of every day. Because of the nature of the business, with patients constantly arriving, being treated and leaving there is significant scope for things to go wrong.

Patient payments being incorrectly recorded or lab work not checked can lead to significant disruption behind the scenes at the practice, to patients being inconvenienced and money lost.

Here, we review further why a practice manual can be useful, what it might contain and how to create one.

I can remember when I first starting working in dentistry, I asked a staff member how they dealt with recalls. The vague reply I received did scare me. She said: "Well, (pause for thought), what

I tend to do is ...!"

Much of the recall process is automated with texts, emails and letters, but there are two elements that currently are not; I would suggest that these could be clearly outlined in a process within our practice manual.

1. Reception staff should know and have been trained in the techniques to get the next appointment/examination booked before the patient leaves. They know how to respond when the patient says "I haven't got my diary, so I can't book it".

2. After the automated part of the recall process (texts, email, etc.), the practice manual then lays out clearly what to do next: how, when, how many calls and so on are made to the patient to get the appointment/examination booked.

If a process is

documented it gives it legitimacy. It says to every staff member:

- We want every action here completed to the highest standard.
- We want to do this every time.
- We want to continuously improve.
- If something doesn't work correctly we want to know about it and fix it.
- We want to reward staff members who look for the quickest, easiest, cheapest way of completing an action that gives patients a better service.

A practice manual helps when inducting new members of staff. It provides a great way to structure an induction period and ensures that the efficiency that you have spent so long creating within the

Richard Pearce spent some of his early years living in Ballymahon and now lives in Northern Ireland. Following a business career in various sectors and an MBA, he joined his dentist wife in dentistry. Richard combines his wide commercial experience with being attuned to what it is like for an associate dentist, a practice owner and a practice manager. His unique perspective ensures he can assist a practice owner with every area of the practice to create a more profitable practice and to achieve their smart objectives.



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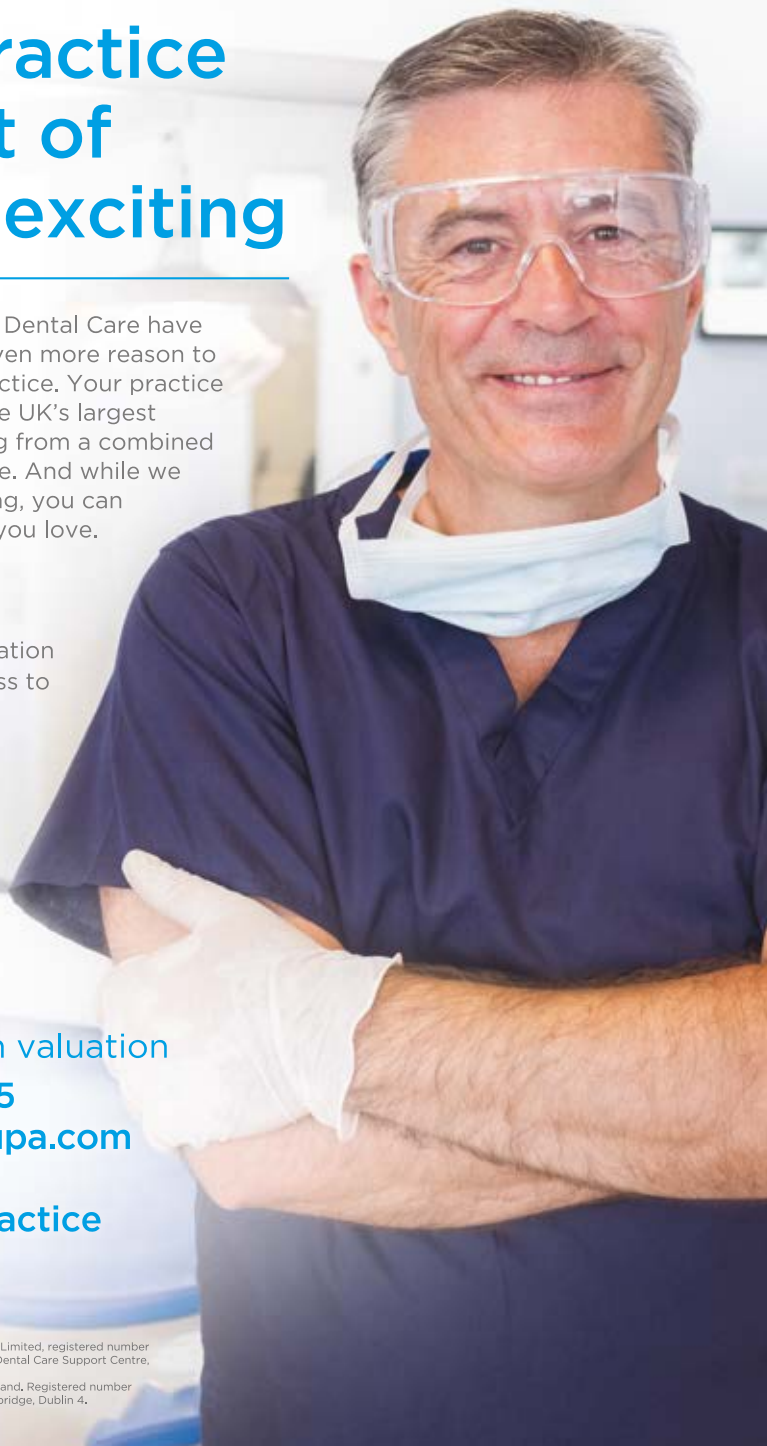
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- practice is perpetuated. Your existing staff are not constantly distracted by questions. The new employee can go straight to the manual. Staff appraisals are made easier as staff behaviour can be compared directly with what is written down in your practice manual as “best practice”.

So, what might you include in your practice manual? Ultimately, I would suggest every single system, process and procedure. It might be broken down into: reception, clinical and administration. Naturally, there will be overlaps with the policies that you already hold to ensure your compliance with CQC/RQIA, but a policy doesn't always tell you “exactly how we do it, here, in this practice”.

How would you create your practice manual?

The answer is to start small and build it, one process at a time. Within 10 minutes of finishing this article you could have the start of your own practice manual.

Initially I would strongly suggest having a hard and soft version i.e. create a folder on your PC (in a shared drive, so others can access it) and also print each procedure and put it in a file, so it is easy to flick through.

“ A COLLABORATIVE APPROACH IS OFTEN BEST. INVOLVING YOUR MOST EXPERIENCED, TRUSTED STAFF WILL GIVE VALUABLE INSIGHT INTO PROCESSES ”

Here are the key steps to follow:

- Create ‘Contents’
- Create the template for each procedure
- Draft a procedure
- Keep adding more procedures
- Have your practice manual at every staff meeting and refer to it when a particular procedure is discussed
- When a staff member refers to a procedure, ask them to open the relevant procedure (soft or hard copy)
- Have a non-compliance report template, which is available to everyone. Whenever a system failure is found, the staff member who discovered it investigates what went wrong, and they complete a non-compliance report. Note: It is quick and to the point. What is key is that we find what went wrong and fix it. Perhaps by changing some practical aspect of the process or

possibly a staff member might need some retraining.

The last three points are very important. Many practices are not process-led and so to ‘change’ your practice to be process-led you will have to reinforce the message at every opportunity. Even more importantly, however, the staff will need to understand the benefits.

A collaborative approach is often best. Involving your most experienced, trusted staff will give valuable insight into processes, and you might well find that they enjoy coming up with the best way to perform each operation.

Some suggestions for what you might include in your practice manual:

- Appointment booking (how is the ideal day constructed for each clinician?)
- Taking payment (cash, card, cheque)
- Patient recalls (what happens before and after ‘automation’?)
- Signing up a patient

to the plan

- End of day cashing up
- Confirming patients by telephone (for tomorrow, all appointments over 45 mins?)
- Lab work, in and out
- Materials ordering
- Staff communication (daily huddle, weekly meeting, monthly review).

What is included in a ‘procedure’?

- Procedure No.
- Title
- Overview – brief description of why this procedure is relevant
- Responsible person(s) – might be “All”
- Procedure
- Date
- Approved by (principal or practice manager)
- Next review date (three, six or 12 months from now).

We all know that every large, successful business has a well-documented system for how they perform their core operations. Tesco doesn't allow their shelves to be stocked just how the operative feels like it. A practice manual will help you to create a patient focused, differentiated and efficient service where patient care is at the centre. ■



A REAL BREAKTHROUGH

Dr Aly Virani and **Dr Franco Vittorio** relate their positive experiences with Dentsply Sirona's new universal adhesive, Prime&Bond active, and explain why for the foreseeable future they're sticking with it

Experienced dental clinicians, Dr Aly Virani, dentist, clinical research fellow and lecturer at Bristol Dental Hospital, and Dr Vittorio Franco, specialist in endodontics practising in both the UK and Italy, were introduced to Prime&Bond active™ by Dentsply Sirona. As key opinion leaders, they were invited to meetings where they were presented with the compelling evidence behind its new Active Guard™ formulation.

It's called "active" because it uses a completely new chemistry; a cross-linker that creates a solution of very low viscosity, which makes it easy to apply and gives it the ability to self-spread. Prime&Bond active also has hydrophobic and hydrophilic properties, which ensure complete coverage and penetration at varying moisture levels. It is universal, and works with all etching methods and across all direct and indirect indications.

The evidence from Dentsply Sirona's own Research and Development laboratory tests in Konstanz, Germany, and from tests conducted by Professor Andre Reis, Assistant Professor in the Department of Operative Dentistry at Guarulhos University, Brazil, showed that Prime&Bond active performed better in terms of bond strength on both over-wet and over-dry dentine and in terms of coverage thanks to its lower film thickness.

Armed with this compelling evidence and

a handful of samples, Dr Virani and Dr Franco agreed to trial Prime&Bond active in their clinical practice.

What made you decide to test Prime&Bond active?

Dr Virani: Seeing the research made me want to give this new universal adhesive a try. With Class II Restorations, two of the biggest challenges are moisture control and ensuring complete coverage of the surface. The clinical evidence seems to suggest that this new product could help with both.

Dr Franco: I am a specialist in endodontics so my use of bonding agents is limited to rebuilding the tooth before or after endodontic treatment and I do a limited number of fillings. After being presented with the clinical evidence, especially regarding moisture control and ease of application, I was happy to give it a try.

What is your opinion of Prime&Bond active now you have used it?

Dr Virani: The main advantage I've noticed so far is the easier handling. I find it a lot more 'forgiving' as it seems to spread itself more easily and evenly, which helps particularly when access is difficult. For instance, for distal surfaces of molars in Class II Restorations, when the rubber dam and Palodent V3 system





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➤ is on the tooth and there's a rubber dam clamp in the way, it can be awkward to ensure coverage. I feel confident that Prime&Bond active has the ability to get in all the nooks and crannies.

If it's as forgiving with moisture control as the research suggests, this will help with my cementation protocol for porcelain work and Class II Restorations. When I'm working with a deep cavity and slightly sub-gingivally, it's often a struggle to get a rubber dam at the gingival margin. I know there's going to be a certain amount of moisture present and using a bonding agent, which can handle higher levels of moisture that will ensure a strong bond, will give me peace of mind. Having worked with Prime&Bond active for only four months, it's too early to tell whether using it has improved my long-term outcomes, but results are good so far and I'm hoping to see a difference in terms of a decrease in debonding in the longer term.

Dr Franco: In my opinion, Prime&Bond active is a wonderful product for use with vital teeth due to its easy handling and the elimination of any influence from the clinician. It is really easy to put the bond onto the tooth, and after a wait of only 20 seconds you have good adhesion without post-operative sensitivities. For endodontics, it is enormously helpful to have an adhesive that is easy to brush on – particularly in the face of difficulties we often have to overcome in isolating the teeth and applying the rubber dam. It makes the adhesive application step very straightforward and, I believe, is better than other material on the market, including the earlier Prime&Bond.

I save time using Prime&Bond active too; it isn't necessary to etch the dentine of the tooth after a root filling so I can go straight ahead and add a very thin layer of bonding material. It also doesn't matter how wet the dentine is, which is very helpful when inserting a post or working in a deep cavity where it's not easy to manage humidity or control moisture.

“PRIME&BOND ACTIVE IS A WONDERFUL PRODUCT FOR USE WITH VITAL TEETH DUE TO ITS EASY HANDLING AND ELIMINATION OF ANY INFLUENCE FROM THE CLINICIAN”

Based on your experience so far, are you planning to use Prime&Bond active for all your future bonding needs?

Dr Virani: I didn't move to Prime&Bond active because I was having trouble with other bonding agents – to be honest, I haven't had any problems with post-operative sensitivity or debonding. I have changed because I really liked the sound of this new product and all the benefits make perfect sense to me as a clinician. Even without the longer-term evidence of its efficacy, I am already a convert and intend to continue using it for all my bonding requirements.

Dr Franco: I've been working with this new adhesive for a year and a half, so it's too early to be able to judge the long-term results in terms of post dislodgement. However, based on my clinical experience so far, including the superior handling and absence of post-operative sensitivity, I am going to stick with Prime&Bond active for the foreseeable future. ■



To find out more about the extensive range of Class II Restoration solutions, materials and equipment, please visit dentsplysirona.com or call us on **01932 853 422**.

You can also access a range of education resources, video tutorials, courses and CPD webinars at dentsplysirona.com/ukeducation

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“During the evolution and development of my Implant Practice a point was reached when a CBCT scanner was required to facilitate diagnosis and treatment planning. I already had the Carestream R4 Practice management software, a Carestream intra-oral camera and a Carestream phosphor plate processing system for digital radiography.

I found all these systems integrated well together and they have proved completely reliable. Having been a customer of what was Dentaquip, later to become DMI for over 30 years, I have always found the Company excellent to do business with. The level of support and expertise offered meets and often exceeds my requirements.

The CS 81003D is very simple to use and has been hugely beneficial in my Implant Practice providing high quality 3D images with very low radiation dose levels for the patient. It has proved a very cost effective scanner not only in terms of initial purchase but also to maintain. The CS 81003D software facilitates implant patient diagnosis and treatment planning. Allowing patients to see the plan in 3D format helps with discussions around treatment risks and therefore is invaluable in the consent process.”

David Reaney BDS(Edin), DGDP(UK), MClintDent (Prosthodontics)

David Reaney & Associates Dental Practice & Implant Clinic, Dungannon Co. Tyrone





“We have been placing implants for over 15 years and were outsourcing our 3D imaging. DMI provided us with a Carestream CS 8100 3D imaging unit and we are so impressed with the imaging available. The software is very intuitive and easy to manipulate. The images are also very helpful in endodontic diagnosis, with high resolution, sectional scan images available.

This is an affordable entry into 3D imaging, which facilitates better diagnostics and treatment planning. DMI were very helpful throughout the process and the training provided was excellent.”

Eoin Fleetwood B.A., B.Dent. Sc. Eyre Square Dental Clinic, Galway



“I have had the Carestream CS 81003D in my practice for a couple of years now. I had not really anticipated the difference it would make. Rather I was intending to install an OPG but the small difference in price made the CBCT seem a much better idea. As an endodontist

it has made a remarkable difference in the diagnostic procedure. No longer need I rely on less sensitive diagnostic tools but can see for certain periapical areas, root fractures, traumatic displacements etc.

Treatment planning is made considerably easier when I know that teeth have extra roots or canals and curvatures and root angles are more obvious. In teeth that look sclerosed on periapical the canal is often visible on CBCT. For retreatments and surgical cases, especially near neural structures, the CBCT is an essential tool. As a multidisciplinary practice, the CBCT is also invaluable for the periodontist and implantologist.

The Carestream is a wonderful machine. It's ease of use, maintenance, availability of small FOV and certain high resolution settings make it particularly appealing in the dental office.”

Lynda Elliott B.A., B.Dent. Sci. (Hons) MSc. Endodontics. Crescent Clinic, Dublin

For more information or a no obligation demo on Carestream 3D imaging products call DMI on 1890 400 405, email info@dmiequipment.ie or visit www.dmiequipment.ie



DEVELOP YOUR IMPLANT CAREER TODAY

David Murnaghan, principal dentist of the Boyne Dental & Implant Clinic, on how to find the best educational experience for the whole dental team working within the implant field

What should dentists and their teams look for when trying to choose the best educational route for their needs?

David: They should consider how relevant a course is for them and whether it has the potential to impact clinical or business aspects of their practice positively. Can they relate to the educator and the environment, so that they go back to their own practice filled with confidence?

Why do you think it is important for teams to attend training/educational events together?

David: It is good for all team members to get the 'bug' and excitement from a new treatment offering together. Patients can feel when everyone is on board, helping to build rapport and treatment acceptance, plus team input from the start can help and encourage the clinician during those all-important, confidence-building initial cases.

What are the key skills needed to successfully integrate implants as a treatment option into a practice?

David: Confidence is a major differentiator when it comes to integrating implants within a practice successfully. Having the required surgical skills to perform safe, pain-free surgery is, of course, key, as is knowing your limits so that clinicians – and the patients – don't have bad experiences.

Why and how does mentoring have such an important part to play in implantology?

David: Mentoring helps hugely with confidence. Knowing that someone can hold

your hand initially and then be at the end of a phone makes all the difference.

How significant a part does the lab play in successful outcomes?

David: It is imperative to have a good relationship and to be able to pick up a phone to your technician, especially at the start, as they may be able to help with getting you out of any trouble if implant placement is not 100%.

What motivated you to create the Boyne Dental Implant Year Course?

David: Many people have asked me over the years where the best course is, and what I recommend. I was therefore aware of the gap in the area; the course I did with Raj Patel is not available anymore, so I thought I would attempt to replicate it as closely as possible due to the wonderful experience I had.

How does it differ from others in the educational marketplace?

David: Delegates will see more live surgery and get more of an opportunity to do hands-on implant dentistry. I believe this is the best way to learn. It will also give the clinicians an opportunity to see how Boyne Dental has integrated the treatment and grown it within a short time frame.

So, why not develop your career today and start offering dental implants within your practice with Boyne Dental and BioHorizons? ■



If you would like further details about the Boyne Dental Implant Year Course 2018, which starts in September and runs until May 2019, please visit <http://www.theimplanthub.com/events/boyne-dental-implant-year-course-2018/>

Implant Year Course 2018

Develop your career today and start offering dental implants within your practice.

- Do you want to start offering implants as a treatment modality?
- Perhaps you are a restoring dentist wanting to learn how to place implants?
- Either way.....read on!



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- Opportunity to select and treat your own patients
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- Mentorship throughout the course
- **Dates:** September 2018 - May 2019
- **Location:** Live surgery days - Boyne Dental and Implant Clinic, Navan, Co Meath.
Lecture based days - Carton House, Maynooth, Co Kildare.
- **Course Fee: €6950***
 - * Course fees include VAT



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One of the key differences between Neodent® and other brands is the backup support from a clinical and marketing viewpoint provided by the exclusive Irish distributor, Quintess Denta. Speaking on the surge in popularity for this well-established brand, Quintess Denta managing director Peter Greene said: "Building the right team to support our customers was critical when we launched Neodent®. Customers are thrilled when they learn that there is a dedicated team available to support and advise them on product knowledge, marketing expertise and clinical mentoring. I feel the three pillars to our success so far have been quality, support and value. I look forward to partnering with more progressive practices in 2018 and establishing more NeoArch® Centres of Excellence."

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For dentists thinking of getting into implantology, Quintess Denta supports many courses. The next one is with Dr Joe Bhat in London.

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3. Live implant surgery with open discussion of clinical cases using the different load protocols.
4. Hands-on experience on models and pigs' heads for implant placement and experience of using different prosthetic attachments.

Course date: May 3–5 2018, 2.5 days

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