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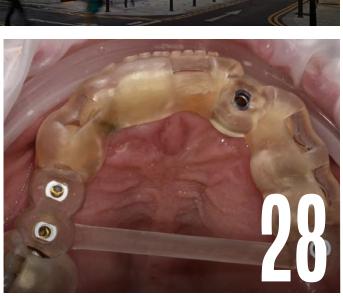
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Sounding the alarm

The Irish Government must address the crisis in care and workforce

he Irish Dental Association (IDA) has sounded the alarm over what it describes as a crisis in dental care access and workforce supply in its latest budget submission to the Irish Government. The IDA's appeal highlights significant challenges faced by both public and private dentistry sectors, emphasising the dire situation for vulnerable members of the community.

In its submission, the IDA paints a bleak picture of the current state of dental care in Ireland. The Association notes that accessing dental care has become increasingly difficult for many people, particularly for vulnerable groups, due to both funding shortfalls and a lack of sufficient staffing. The recruitment and retention of dentists in the Health Service Executive's (HSE) public dental service is "in crisis". This has resulted in a severe shortage of dentists available to provide necessary care, exacerbating the challenges already faced by the public sector.

To address these issues, the IDA has laid out four priority areas in its submission, which it believes are crucial for the future of dental care in Ireland.

1. Mandating Continuous Professional Development (CPD) for dentists: The IDA has called for legislative changes to mandate continuous professional development (CPD) for dentists. Currently, CPD is not required for dental practitioners, unlike in other health professions such as medicine and nursing. The IDA argues that implementing mandatory CPD is essential to maintain high standards of patient care and safety. According to the IDA, this change could be made at no cost to the state by simply amending the Health Bill.

2. Increasing public dental service staffing:

The IDA is urging the government to immediately allocate funding for the recruitment of at least 75 dentists into the public dental service to restore staffing levels to those of 2009. The Association points out that even this increase would merely bring staffing back to levels from over a decade ago. To begin to address the backlog of public patients awaiting care, the IDA suggests that more than 100 new dentists would be needed. The shortage of public

dental service providers has led to significant unmet needs, including more than 100,000 primary school students who missed out on vital dental screenings last year alone.

3. Sustainable funding for dental education: Highlighting the critical role of dental schools in training future professionals, the IDA warns that these institutions are currently operating at full capacity and cannot meet the growing demand for dental services. The current reliance on higher fees for foreign students to subsidise Irish dental schools underscores the need for a more sustainable funding model. The IDA also expressed disappointment over the cancellation of plans for a new dental school at University College Cork (UCC), which it says reflects a troubling perception of dentistry as a "second-tier" health service. This cancellation, according to the IDA, will only exacerbate the shortage of dentists as Ireland's population approaches seven million.

4. Restoring funding to medical card and dental schemes:

The IDA highlights the severe cuts to medical card and dental schemes since 2009, which have resulted in an estimated loss of €855 million in funding. The Association stresses that, had funding levels been maintained, these schemes could have significantly improved oral health outcomes for Irish medical card patients. The IDA calls for immediate action to restore funding to these programmes to address the growing oral health needs of the population.

The IDA has proposed a multi-year funding plan to address these long-standing issues, stating that this approach is necessary to cover the costs of overdue reforms and address workforce capacity problems. The submission underscores that tackling each of these challenges individually would be difficult, but collectively, they reveal the depth of the crisis facing Irish dentistry.

Its budget submission serves as a stark warning to policymakers about the urgent need to invest in dental care and education to prevent further decline in dental health services across the country. The Association's recommendations aim to ensure that all members of the community, especially the most vulnerable, have access to adequate dental care and that the workforce is sufficiently equipped and trained to meet the growing demand for services.

As the government reviews this submission, the future of Ireland's dental care system hangs in the balance, with calls from the IDA to take immediate and decisive action to prevent a deepening crisis.

Word of mouth

Dr Paul O'Dwyer BDS MSc (Healthcare Mgmt)

Top ten in practice

It is a good time to explore areas that may have been overlooked

t's that time of year again. Summer is over and the schools are back. It is a good time to reflect on your practice; to think about areas that might have been overlooked. I've put together 10 key areas that will assist in considering important facets of dental practice.

1. Equipment: When is the last time your chair had a check? It's good practice to have your chair reviewed/serviced regularly. Dental chairs by their nature take a lot of traffic. Gearing, motors, headrests, covers, pedals etc – all need a careful eye to ensure no surprises during the working clinical day. A checklist with your service engineer can help to identify any potential issues.

- 2. Materials: We all have (or have had) a drawer full of some "wonder product" that will revolutionise our work life. This can range from ultra slim hi-tech loops to a different matrix band that we only recently discovered(!). Take a peek through the inventory and decide what is useful, what is expired and what you will never use. This will both free up space and remind you of the arsenal/armamentarium you have at your disposal. This is particularly true of products that you infrequently use.
- **3. PPE, masks, eye protection:** We may still have some disposable gowns and visors from the pandemic. Are they still viable? Eye protection is one that sometimes gets overlooked (all puns intended). Protective eyewear tends to get scratched over time. Be the patient on this one, and pop on the specs; would you feel safe sitting in for a complex restoration if the specs you were handed had huge scratches across the lenses?
- **4. Emergency drugs:** This is an old chestnut. Most practices have a system in place for expiry dates and replenishment schedules. The most up to date lists are freely available from your dental association and can be found online. Again, expiration dates and functionality are key here. Have you squeezed the inhaler to make sure it is working (in case of an asthma attack)?
- **5. Risk assessments:** The concept of risk assessment is to quantify the "What If...?" This should cover as many eventualities as possible from simple ones like, "What if the power goes out?" to, "What if the surgery floods?" Each practice is advised to consider all aspects of risk its nature, likelihood and management.
- **6. Training:** This is closely related to all the above points. When is the last time the whole surgery team

- sat together for training? If there is a patient collapse, faint or seizure would everyone know their role and responsibility? This is true too of fire alarm practice and evacuation policy.
- **7. General cleanliness and impression:** Every surgery is aware that cleanliness and maintenance is essential not just from a health perspective but also from the patient's impression of the practice. A trusted practice builder is to demonstrably show the cleaning rota in a (relatively) prominent place. I've observed (in the USA) where they place the cleaning rota and duties, carefully, in the waiting room.
- 8. Practice what you practice: A novel approach that many patients find a great trust builder is to better understand how their own dental team looks after their own dental health. Again, I've observed a catchy poster in one practice that had a simple chart with each team member's name and the date of their last check up! It's the sign of a good culture where everyone "signs up" for this and is a terrific tool for trust building, particularly with nervous patients who attend. It's also a helpful reminder to us the clinicians to pencil in our own checkups! Much like the tailor who works away making suits while wearing a worn out suit themselves, it's often the case that dentists are often slow to attend for check-ups!
- 9. Prescriptions/drugs/referral network: The British National Formulary (BNF) is still the main source for informed guidance on current thinking in prescription. It's available online and is a great resource for both new and seasoned practitioners. So too is our referral network and times. A weather eye on patient outcomes, ease of access and timely intervention are some indicators that help to decide where to send our patients for more advanced or specialist treatment.
- 10. Holidays: This may seem a little out of place on a 'practical' list but understanding the importance of time off/time away from surgery is key. This applies to all members of the team dentists, nurses, auxiliaries, therapists, receptionists, practice managers etc. Weddings, engagements, stag and hen parties, christenings etc all play a part in deciding when to take time off. But, aside from these obvious days away, have you scheduled some time just for yourself? This applies to all team members. Calendar management, collaboration with the team and being open to work schedule changes are all part of keeping the show on the road.

There are many other areas to consider – but these are my 'Top Ten'. September can serve as a great 'reset button' as routines are re-established after the summer. Use the time wisely – and before you know it, Christmas will be upon us!







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Amalgam derogation offers glimmer of hope

But BDA warns that without a sustainable service and healthier population it is a "mere stay of execution for NHS dentistry"

THE British Dental Association Northern Ireland has expressed its relief that the European Commission has approved a derogation from the EU's new mercury regulations.

The move has averted an expected ban on the use of mercury fillings in dentistry from 1 January 2025, a move the BDA stressed in March would have broken NHS dentistry in Northern Ireland.

Under new arrangements dental amalgam can be used in NI until 31 December 2034, or until the date agreed under the Minamata Convention on Mercury, whichever is sooner.

In survey evidence presented to Stormont's Windsor Framework Democratic Scrutiny Committee in March, the professional body warned that 92 per cent of dentists were on track to reduce the amount of NHS activity at their practice in the event of a ban. The BDA said it recognised the "considerable efforts" to secure this result, not only from the dental profession itself but on the part of Department of Health officials working extensively with the UK Cabinet Office, and in their engagement with the European Union, underpinned by political advocacy. However, it has stressed that concerted action is needed from both the Stormont and UK Governments to ensure a seamless transition to an amalgam-free service.

Provision for a 10-year derogation is subject to specific conditions being met, including the UK taking the necessary measures to make regular and consistent progress towards phasing down amalgam.

Ciara Gallagher, Chair of the British Dental Association's Northern Ireland Dental Practice Committee, said: "A ban



on dental amalgam in 2025 could have spelled the end for NHS dentistry in Northern Ireland.

"We sounded the alarm and fought tooth and nail for a workable solution. This delay is a glimmer of hope for a service that's on its knees and could not have shouldered any further financial pressure.

"We have some breathing space, but Stormont and Westminster cannot take their foot off the pedal to affect a seamless transition to amalgam-free dentistry. Any progress will require reform, investment, and concerted action on deep oral health inequalities.

"When the plug is finally pulled on amalgam, Northern Ireland will need to have a healthier population and a more sustainable service. Otherwise, this 10 year derogation is a mere stay of execution for NHS dentistry."

World's first robotic dental procedure

PERCEPTIVE, an artificial intelligence (AI) company, has announced the completion of the world's first fully automated dental procedure on a human.

The company's system integrates AI-driven 3D imaging software with a robotic arm designed to perform dental procedures and can complete tasks, such as crown placements, in just 15 minutes.

"We're excited to successfully complete the world's first fully automated robotic dental procedure," said Dr Chris Ciriello, Perceptive's founder and chief executive. "This medical

Perceptive's robot 'dentist'

S Treland's Dental Magazine

breakthrough enhances the precision and efficiency of dental procedures, and democratises access to better dental care, for improved patient experience and clinical outcomes."

The system uses 3D volumetric data for diagnostics and treatment planning, enabling early and accurate diagnoses. The procedure begins with an optical coherence technology (OCT) scan of the patient's tooth and mouth using Perceptive's handheld intraoral scanner. The scanner captures 3D images beneath the gum line, through fluids and under the tooth surface allowing patients to see and understand their condition.

It then uses Perceptive's AI algorithms to analyse the 3D data and plan the procedure with efficiency and precision. It means, says the company, that dentists will be able to diagnose and treat more patients with higher quality care in less time, reducing the need for manual labour and minimising the chances of human error.

German Galluicci, chairman of restorative dentistry at Harvard School of Dental Medicine, said: "Perceptive's technology achieves more than a 90 per cent accuracy rate for detecting caries without the ionising radiation associated with traditional X-rays and CBCT scanners – a significant improvement over the approximately 40 per cent accuracy of 2D X-rays."

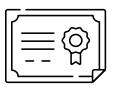
Perceptive has raised \$30 million in funding to date, including from dentist Dr Ed Zuckerberg, father of Meta chief executive Mark Zuckerberg.

See page 17

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RCSI ceremony held in Dublin

More than 500 new Fellows, Members and Diplomats conferred

THE Royal College of Surgeons in Ireland (RCSI) conferred healthcare workers with postgraduate awards at a ceremony held in Dublin.

The Faculty of Dentistry RCSI conferred 556 new Fellows, Members and Diplomates at the ceremony. The faculty awards included 247 Diplomas in Primary Care Dentistry, 293 Memberships of the Faculty of Dentistry, 11 Fellowships of the Faculty of Dentistry and five Ad Eundem Fellowships of the Faculty of Dentistry. The Ad Eundem Fellowships of the Faculty of Dentistry were awarded to:

- · Dr Philip Atkin, Consultant in Oral Medicine, University Dental Hospital, Cardiff, Wales
- · Dr Charlotte Eckhardt, Dean of the Faculty of Dental Surgery, Royal College of Surgeons of England
- · Professor Nicola Innes, Dean, School of Dentistry, Cardiff University
- · Professor Gerry McKenna, Professor of Oral Health Service Research and Gerodontology, Queen's University Belfast.
- Professor Robert Witton, Professor of Community Dentistry, Peninsula Dental School, UK.

Speaking about the conferring, Professor Christopher Lynch, Dean of the Faculty of Dentistry RCSI said: "I was delighted to be able to confer so many colleagues from around the



globe. Your successes are to be congratulated, and we really appreciate that you wish to be associated with RCSI."

Pictured L-R: Sean Sheridan (International Postgraduate Advisor, Faculty of Dentistry RCSI), Dr Philip Atkin (Ad Eundem Fellowship recipient), Dr Charlotte Eckhardt (Ad Eundem Fellowship recipient), Professor Gerry McKenna (Ad Eundem Fellowship recipient), Professor Christopher Lynch (Dean of the Faculty of Dentistry RCSI), Professor Nicola Innes (Ad Eundem Fellowship recipient), Professor Robert Witton (Ad Eundem Fellowship recipient), Dr Grace Kelly (Honorary Secretary, Faculty of Dentistry RCSI) and Professor Albert Leung (Head of the School of Dentistry RCSI and Immediate Past Dean, Faculty of Dentistry RCSI).

Operation Smile benefits from legacy fund

OPERATION Smile has become the beneficiary of a significant legacy fund donation from the European Aligner Society (EAS) - £80,000, paid over three years, to help the charity develop and support cleft lip and palate treatment programmes in developing countries.

In addition to mobilising skilled

medical volunteers, Operation Smile trains local medical professionals, and partners with hospitals, governments and ministries of health in order to ensure safe and effective surgery. More than 85% of its current programmes are managed by local teams.

The society has a growing membership of orthodontists and dentists with a special interest in clear aligner orthodontics. Its most recent congress in Valencia, Spain was attended by more than 1,300 dental professionals from 60 countries and

supported by most of the main clear aligner companies.

Dr Les Joffe, EAS chief executive, said: "The EAS board considered what it could do with surpluses generated by sponsorship and delegate fees from a series of highly successful congresses and meetings. EAS is a not-for-profit organisation so we

created a legacy fund into which surpluses could be directed."

The fund supports worthy causes in oral health, aligner research projects and aligner 'summer schools' for aspiring orthodontists.

"The expertise that Operation Smile brings to each country is handed onto the local clinicians so that ongoing care and support can be carried on locally," added Dr Joffe.

For more information about the work of Operation Smile, visit www.operationsmile.org

Tributes paid to Professor **Noel Claffey**

IT was with great sadness we heard that Professor Noel Claffey, BDS, MDentSci, FRCPS, had passed away.

Professor Claffev held several positions, including senior lecturer and consultant in the Department of Periodontology at the Dental School, Trinity College Dublin, associate professor of research at the Dental School, Loma Linda University, California, professor of periodontics research, Loma Linda, and consultant head of periodontics and head of graduate programmes at Trinity College. He was also made Professor Emeritus at both Trinity College and Loma Linda.

Tributes poured in on his passing. "To paraphrase C.S. Lewis: 'His absence is like the sky, spread over everything;" said Dr Richard Lee Kin, president of the Irish Society of Periodontology. "The loss of such a titan of our profession is impossible to fully comprehend or convey – it is truly immeasurable.

"I was fortunate to have met Professor Claffey as an undergraduate at the Dublin Dental Hospital and, over the years, his influence and reach extended far beyond the borders of Ireland. He had a visionary approach, recognising that our society was part of a much wider community, both in Europe and internationally. Without his dedication, inspiration and tireless efforts, our society would not enjoy the prestige and recognition it does today.

"As a teacher, scholar, and mentor, Professor Claffey instilled in many a passion – not only to become world-class dentists but to further their training in the specialised field of periodontology. His academic prowess was widely respected and internationally recognised, but beyond that, he was a gifted storyteller, a man of immense wit and a genuinely wonderful human being."

Read more tributes to Professor Claffey, visit: tinyurl.com/y5mj5ybu



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- Quick turnaround this treatment is rapid and can be carried out in 90 minutes
- Patient input you can tell your dentist what you are looking to improve in your smile, which is incorporated into the design and highlighted during the 'smile trial'
- High quality through our Signature Smile stents, your dentist can faithfully reproduce your new smile design into your mouth
- Inexpensive compared to porcelain restorations, Signature Smile can give you results similar to porcelain veneers for a fraction of the price
- Repairability if you incur any damage to your Signature Smile teeth, it is very straight forward to repair your original specification

Introducing Mary Catherine

Mary Catherine is an Enniskillen native, who was initially drawn to dentistry because of her interest in art and design. After graduating from



undergraduate study at Queens University Belfast, Mary Catherine moved to Edinburgh where spent time honing advanced skills within specialist departments; specifically, special care dentistry, paediatric dentistry, oral and maxillofacial surgery and restorative dentistry.

Following training in Restorative and Surgical specialities, Mary Catherine provides advanced dental treatment such as dental implants, surgical extractions, crown and bridgework. At present her most popular treatment is the Align, Brighten and Contour procedure, which entails Invisalign, Whitening and Composite Bonding, a skill that she honed by learning from Dr Monik Vasant.

Building on a knowledge base of surgical and restorative techniques, Mary Catherine is currently undertaking training in dental implantology, and is on course to complete a postgraduate diploma in 2023. She is also studying for a master's degree in advanced aesthetic restorative dentistry, accredited by the University of Portsmouth.



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Christie & Co expands into Northern Ireland

New appointee will play a pivotal role in developing the company's brokerage arm

SPECIALIST business property adviser, Christie & Co, has expanded its dental team into the Northern Ireland market, with the appointment of Cathy Murphy as its lead agent in the region.

Cathy joined Christie & Co's dental team in August 2023 and brought with her a wealth of market knowledge and experience in the sector.

Initially covering the sale of dental businesses in the north of England, she will now also play a pivotal role in developing the company's brokerage arm in Northern Ireland.

Christie & Co's expansion into the Northern Ireland market reflects the growing demand for dental businesses in this part of the UK, and the company's commitment to expanding its brokerage offering.

Cathy said: "Demand for dental practice sales remains robust across Northern Ireland which

has emerged as a key target area within the dental practice sales market. Having supported sales across the north over the last five years, I am looking forward to working with principal

dentists to achieve their goals, be it through a sale or future growth opportunities."

Joel Mannix, Head of Dental at Christie & Co, added: "Cathy's extensive experience and deep understanding of the dental market will be invaluable as we expand our presence in Northern Ireland.

"This move underscores our commitment to providing expert advisory services and meeting the growing demand for dental practice sales in

> "With Cathy at the helm, we are confident that Christie & Co will continue to deliver exceptional value to our clients.'

www.christie.com

Record investment in dental AI

PEARL, developers of AI-powered imaging technology, has raised \$58 million in Series B funding, the largest investment of its kind yet.

The company says its machine learning and computer vision tools solve a core challenge in dentistry: inconsistency in diagnostic accuracy. The company's AI serves as a real-time aid to help dentists read patient x-rays, deliver consistent, objective and accurate diagnoses, and clearly communicate findings to patients with precision, clarity and confidence.

Since receiving the first-ever FDA clearance for AI software to help dental professionals detect multiple different pathologies and other conditions in x-rays, Pearl's clinical AI has gained regulatory authorisations for chairside use in more than 120 countries and recognition among TIME's Best Inventions.

The company plans to use the funding announced both to accelerate ongoing development of computer vision capabilities - including detection and tracking of disease in 3D and other imaging modalities - and introduce new AI tools to improve patient treatment planning, insurance claim approvals

"In the field of healthcare, dentistry has become an AI standard-bearer, demonstrating the technology's enormous utility and benefit in day-to-day patient care – and Pearl has led the AI charge in dentistry," said Ophir Tanz, founder and chief executive of Pearl.

www.hellopearl.com



DATES FOR YOUR DIARY

2024

26 SEPTEMBER

Study Club: Contemporary **Endodontics**

Bishop's Gate Hotel, Derry www.eventbrite.co.uk/e/ contemporary-endodonticstickets-872662365627

11-12 OCTOBER

IDHA Conference

Galway Bay Hotel, Salthill www.eventbrite.ie/e/ idha-annual-conference-2024-tickets-925810864217

18 OCTOBER

The Bioclear Method: an introduction

Maryborough Hotel, Cork www.dentist.ie/events/ the-bioclear-method-anintroduction-18thoctober-2024.8638.html



2025

15-17 MAY

IDA Annual Conference Lyrath Estate, Kilkenny www.dentist.ie

20-21 JUNE

Scottish Dental Show Braehead Arena, Glasgow www.sdshow.co.uk

20-22 AUGUST

ADEE Annual Meeting

Dublin Dental University Hospital https://adee.org/meetings/ dublin-2025

23-24 AUGUST

International Conference on Oral Dermatology and **Oral Pathology**

Dublin, venue tbc https://waset.org/oraldermatology-and-oralpathology-conference-inaugust-2025-in-dublin

Note: Where possible this list includes rescheduled events. but some dates may still be subject to change.

STILL NOT EQUAL

Exploring the impact of rising numbers of female dentists and practice owners

't's a truism to say the dental landscape has been transformed over the past 20 years.

Post-pandemic, the number of dentists leaving the NHS for private dentistry has snowballed. The days where appointments with NHS dentists were only a phone call away have now been replaced by DIY dentistry and dental deserts.

However, a change less noticeable to the general public has been the gender makeup of the profession. Between 2013 and 2021, the number of male dentists registered in the UK fell by 289, while during the same period the number of female dentists registered in the UK rose by 3,596. Women are also dominating in another former bastion of male dominance – the provision of NHS care. The latest figures show there are 11,218 men registered providing some form of NHS dentistry, compared with 12,933 women. This means that the balance has tipped in favour of female NHS providers in recent years.

Drilling down further into those figures, we find that 71 per cent of women

dentists are under the age of 44,

whereas only 55 per cent of male dentists are under that age, which suggests that the trend is likely to continue.

Flexibility is key

So, what's driving this shift in the gender balance among dentists? Lauren Harrhy (pictured), dentist, practice owner and British Dental Association committee member, feels the flexibility of a dental career is very attractive to women. "I think that in dentistry there are opportunities for more part-time working, taking control of your own business and shaping your own day, which are really attractive to working mums and working dads as well," she said. "Certainly, for women who want to have a good work-life balance, we can still own our own business, shape the way our careers go, and even have a portfolio career."

Lauren also believes the fact that dentistry is a caring profession is another draw for women. "It's an attractive career for women who want to take care of people," she said. "I like to treat my patients holistically. We talk, not just about their teeth, but their facial aesthetics and their general health, too. Dentistry is a profession where we can talk to people, relate to them and build relationships, which certainly suits me. And I know that lots of my female colleagues agree that it's nice to

be able to build those strong relationships. This sometimes seems to be very important more to women than to men, although I do acknowledge it's important to both."

Less than full-time

Alongside the gender shift is a trend that has grown in popularity since the pandemic for dentists to choose to work less than full-time. These days, a dentist who works four-and-a-half or five days a week is rapidly becoming a rare breed. However, portents of this type of working were seen well before COVID, as Lauren explains.

"About 15 years ago, I wrote a paper on workforce patterns. At the time I was only looking at paediatric specialists," she said. "We found that overwhelmingly, female paediatric-specialist consultants would work full-time prior to maternity leave, and then return to work part-time. At the time we believed that if the trend continued throughout dentistry, we would see lots more part-time working and so we would need a larger dental workforce.

"I believe that is true, but I feel it's been a benefit rather than a detriment because by allowing women WORDS ZOE CLOSE



to do this, we've shown that we can have a great career, run businesses and earn well. At the same time, we've allowed the guys to realise that they can have a work-life balance as well. It doesn't have to be that they work 7am until 7pm, six days a week. "

Although part-time working means fewer clinical hours worked by each individual, Lauren feels productivity improves with part-time working. This change in working patterns is something she feels will alter the dental landscape considerably. "Dentists can be more productive sometimes working part-time" she said. "I think less than full-time working will continue to change the dental landscape going forward and we must plan for it.

WE'VE HAD SOME STATS RECENTLY THAT HAVE SUGGESTED THAT, EVEN ADJUSTING FOR <u>OTHER FACTORS, THERE IS STILL A GENDER PAY</u> GAP. IT'S CLOSING, BUT IT'S STILL THERE"

> "Workforce planning is going to be all important now. We know there are changes with the NHS, as well as how many dentists and bodies we have out there providing the services. But it's fantastic that we have dentists who are

not just working themselves to the bone, who are able to treat patients in the way that they really should be treated and looked after and not ending up completely burnt out and ruined."

Not equal, yet

However, dentistry is still a long way from reaching the promised land of total equality for both sexes. As the co-chair of the BDA Equality and Diversity Committee, Lauren is acutely aware of this. "We've had some stats recently that have suggested that, even adjusting for other factors, there is still a gender pay gap," she said. "It's closing, but it's still there."



She feels there are multiple reasons for this. "In some cases, women feel less confident about going in and negotiating terms and pay. But there are other more quiet and unquantifiable factors to do with women being viewed as less scary that have an effect.

"You often find that the nervous patients or the paediatric ones will ask to see 'the lady dentist'. With these patients, you'll be getting paid the same for them, but they might take twice as long for you to deal with them. It's difficult to quantify how much that can affect your take home pay, but it does. Even with things seeming to be more positive, there are still drawbacks. While it's great to know that you're the lovely lady dentist who can deal with the nervous patients, that is often not financially beneficial."

One thing that still hasn't changed, and which usually has a greater effect on women than men, is having children. Lauren feels she's been lucky to have had total support from her husband. "I couldn't do the things that I do without my husband," she said. "We have three children and when they were preschool age, he took on so much of the primary carer role because I was at work." She credits his preparedness to shoulder most of the burden of childcare for her career progression. "If I had been married to somebody who was more traditional, I wouldn't have been able to progress to the point that I have now."

So, how important is it for more women to put themselves forward and take an active part in shaping dentistry? "I think the saying is if you can see it, you can be it', which is true for any underrepresented demographic," said Lauren. "We need trailblazers so that those coming behind can think 'they can do it, so I can do it.' Although it might sound a bit trite, I believe that it's really important to try to be that inspiration."

She feels she owes a debt of gratitude to the trailblazers she's encountered. "There are so many women I've seen who were successfully owning practices or making a success of going into dental politics. I'm still friends with them now and they've mentored me during my career. And if it wasn't for them, I might have thought, 'well maybe this isn't the place for me.' So, it's incredibly important to be visible and out there showing what we can do."

About Zoe

Zoe Close is Head of Sales at Practice Plan, the leading provider of practice-branded dental plans. Zoe has more than 35 years' experience in the dental sector, including group business manager for a corporate group, dental nurse, head receptionist and practice manager. Practice Plan (www.practiceplan.co.uk/be-practice-plan) is the UK's leading provider of practice-branded patient membership plans, partnering with more than 2,000 dental practices and offering a wide range of business support services.

About Lauren

Lauren Harrhy is Principal Dentist and owner of Sparkle Dental Centre (sparkledentalcentre.co.uk). Her focus for the past few years has been on helping to maintain the mental health of dental professionals. She is a founding member and current trustee of Confidental (www.confidental-helpline.org), a helpline providing emotional first aid and signposting to dentists in crisis. In addition to co-chairing its Equality, Diversity and Inclusion Committee, she is also on various other BDA committees as a representative and member of the BDA Executive Committee. Lauren is also a member of the Wesleyan Member Advisory Board.

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AI-driven robot performs dental procedure on a human

n a world first, a robot has successfully completed a fully automated dental procedure on a human. In addition to artificial intelligence (AI) and three-dimensional imaging, the technology includes a robotic arm for dental work. The US-based company, Perceptive, claims that its technology is designed to make dental operations, like fillings and crowns, more precise and efficient.

Perceptive, a leader in AI-driven automated dental technology, completed the procedure using its advanced robotic dentistry system. The company said it marks a significant leap forward in dental care, integrating advanced imaging,

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WILL PEAKIN

AI and robotics to set a new standard of care in dentistry. Perceptive's system integrates AI-driven 3D imaging software with a robotic arm designed to perform dental procedures, starting with restorative dentistry, with what the company describes as unparalleled speed and precision. The proprietary system aims to complete tasks such as crown placements in just 15 minutes, a reduction from the current method that can require two practice visits of around an hour each.

"We're excited to successfully complete the world's first fully automated robotic dental procedure," said Dr Chris Ciriello, the founder and chief executive of Perceptive. "This medical breakthrough enhances precision and efficiency of dental procedures, and democratises access to better dental care, for improved patient experience and

clinical outcomes. We look forward to advancing our system and pioneering scalable, fully automated dental healthcare solutions for patients."

Perceptive's AI robotics system uses 3D volumetric data for diagnostics and treatment planning, enabling early and highly accurate diagnoses. The procedure begins with an optical coherence technology (OCT) scan of the patient's tooth and mouth using Perceptive's handheld intraoral scanner. This advanced scanner captures 3D images beneath the gum line, through fluids and under the tooth surface, offering unparalleled imaging capabilities. Patients can clearly visualise their dental conditions through these detailed images, helping them better understand their need for care.

The system then uses Perceptive's AI algorithms to analyse the 3D data and plan the procedure with



THE SYSTEM HAS BEEN DESIGNED TO **SURE THAT DENTISTS CAN PERFORM**

- EDWARD ZUCKERBERG

German Gallucci, chairman of restorative dentistry at Harvard School of Dental Medicine, added: "Perceptive's technology achieves over a 90% accuracy rate for detecting caries without the ionising radiation associated with traditional X-rays and CBCT scanners a significant improvement over the approximately 40% accuracy of 2D X-rays. This ensures safer and more precise diagnoses, enhancing patient care and safety."

The company has received \$30 million in funding and is backed by dentist Edward Zuckerberg, the father of Meta boss Mark Zuckerberg.

"The robotics system has been designed and rigorously tested to ensure that dentists can perform treatments safely, even in conditions where patient movement is prevalent," said Mr Zuckerberg, a pioneer in the integration of technology in the dental clinic. "This commitment to safety is core to Perceptive's dedication to providing reliable and effective

dental care solutions using state-of-the art technology."

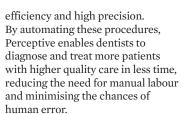
"Perceptive's AI-driven robotic system will transform dentistry. The patient experience will be better because of streamlining procedures and enhancing patient comfort," said Karim Zaklama, a general dentist and multi-practice owner supported by PDS Health and a member of Perceptive's clinical advisory board.

"The advanced imaging capabilities, particularly the intraoral scanner, provide unparalleled details which will enable us to diagnose issues earlier with greater accuracy and allow us to connect with patients more effectively.

"This efficiency allows us to focus more on personalised patient care and reduces chair time, enabling us to treat more patients effectively."

The system is not currently on sale in the US and does not have clearance from the American regulator, the Food and Drug Administration (FDA).

www.perceptive.io



"I've been closely tracking Perceptive's progress since seeing Dr Ciriello present his concept at the ADA Forsyth dentech conference years ago," said Stephen E. Thorne IV, founder and chief executive of PDS Health, a leading integrated dental and medical support organisation with more than 1,000 offices across America.

"I have seen the promise of Perceptive's incredible technology firsthand.

"We are excited to help them operationalise their vision of fully completed dental restorations in minutes."



THE IMPACT OF AI ON DENTISTRY

rtificial intelligence (AI) is revolutionising various fields, and dentistry is no exception. AI's role in dentistry spans diagnostic tools, treatment planning, patient management, and educational advancements, bringing significant benefits to dental professionals and patients alike. The integration of AI in dentistry is transforming how dental care is delivered, improving diagnostic accuracy, optimising treatment plans, and enhancing overall patient outcomes. How, exactly does

Enhanced diagnostics

this happen, and what are the potential pitfalls?

AI is particularly useful in enhancing diagnostic accuracy. Through machine learning algorithms, it can analyse a vast amount of data from dental images, such as X-rays, CT scans and intraoral photographs, to detect early signs of dental conditions. For example, AI can identify cavities, periodontal disease and even potential lesions that might be precancerous. The technology can also be trained to recognise patterns in radiographs that can be missed by the human eye. AI's ability to consistently and accurately analyse images could significantly improve patient outcomes by ensuring that conditions are detected and treated earlier.

Treatment planning

Once a condition is diagnosed, AI can assist in formulating an effective treatment plan. For example, in orthodontics, AI can predict how teeth will move in response to various treatments, helping to design more efficient and effective treatment plans. AI algorithms can simulate different treatment outcomes based on individual patient data, allowing dentists to choose the most appropriate intervention. In restorative dentistry, AI can helpin designing crowns, bridges and implants with greater precision. By analysing the patient's dental anatomy, AI can create digital models that are customised to the patient, ensuring a better fit and more natural appearance. This level of customisation can lead to higher patient satisfaction and better long-term outcomes.

Patient management and communication

AI can greatly improve patient management and communication within dental practices. Virtual assistants and chatbots can handle routine inquiries, schedule appointments, send reminders and provide basic information about dental procedures. These AI tools can operate 24/7, offering patients immediate responses and reducing the administrative burden on dental staff. In addition, AI can personalise patient interactions by analysing data from previous visits to suggest follow-up treatments. This personalised approach can enhance patient engagement and compliance, leading to better oral health outcomes.

Predictive analytics and preventive care

Predictive analytics, powered by AI, can be used to anticipate a patient's risk of developing certain dental conditions. By analysing a patient's dental history, lifestyle factors and genetic information, AI can identify those at higher risk for issues such as cavities, gum disease, or oral cancer. With this information, dentists can proactively develop personalised preventive care plans aimed at mitigating these risks. This shift from reactive

to preventive care could lead to significant improvements in overall dental health and reduce the need for more invasive and costly treatments.

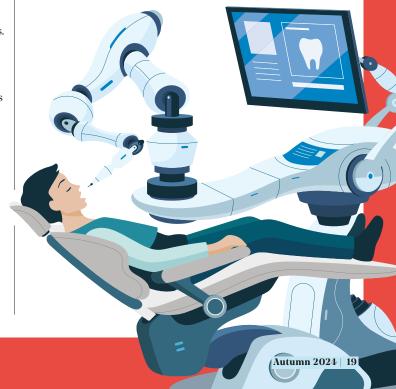
Training and education

AI could also revolutionise the training and education of dental professionals. Virtual reality (VR) and AI-powered simulation programmes can provide dental students with realistic training environments, allowing them to practice procedures and improve their skills in a risk-free setting. These tools can also provide instant feedback, helping students learn more efficiently.

Ethical considerations and data security

While AI offers numerous benefits, its integration into dentistry must be approached with care, particularly regarding ethical considerations and data security. The use of AI requires access to large datasets, often including sensitive patient information. Ensuring that this data is handled securely and that AI systems operate transparently is crucial. Additionally, there is the question of how AI decisions are made and the importance of maintaining human oversight. While AI can support decision-making, the final responsibility must rest with the dental professionals who can consider the nuances of each individual case.

The future of AI in dentistry holds great promise for improving the accuracy, efficiency and personalisation of dental care. As AI technology continues to evolve, it will likely become an integral part of the dental profession, enhancing everything from diagnostics and treatment planning to patient management and education. However, attention must be paid to the ethical implications and the need for secure data handling to ensure that AI is used to its full potential in a way that benefits both patients and practitioners without compromising patient welfare and confidentiality.



LKIIZLHIIZ HIK Driven by technology, policy and patient expectations dentistry is on the brink of significant transformation III-NIIXIKY IN IKH



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entistry in Ireland, like many other healthcare sectors, is on the brink of significant transformation, driven by a combination of technological advancements, evolving patient expectations, and shifts in public health policy.

Digital dentistry

One of the most notable trends in the future of dentistry in Ireland is the rapid adoption of digital technology. Digital dentistry, which includes tools such as 3D printing, digital impressions, and computer-aided

design and manufacturing (CAD/ CAM), is revolutionising how dental treatments are planned and executed. Moreover, advancements in artificial intelligence (AI) and machine learning are set to play a pivotal role in diagnostics and treatment planning.

AI algorithms can analyse dental images and data more accurately than ever before, allowing for earlier detection of oral diseases such as caries and oral cancers.

Expanding access

Improving access to dental care is another significant focus for the future of dentistry in Ireland. There are ongoing discussions about how to make dental care more accessible and affordable for all.

The introduction of new policies aimed at expanding public dental services could help address this issue, especially in rural and underserved areas. One potential development is the expansion of mobile dental clinics and teledentistry services.issues.

Preventative dentistry

Preventative dentistry is poised to become a cornerstone of dental practice in Ireland's future. This approach emphasises the prevention of dental diseases through regular check-ups, patient education, and proactive treatments such as fluoride applications and dental sealants. With an increasing awareness of the links between oral health and overall health, there is a growing recognition that preventing dental problems is more cost-effective and beneficial than treating them after they occur.

Holistic approaches

The is also expected to shift towards a more patient-centered and holistic approach. Collaborations between dentists, general practitioners, and other healthcare providers can ensure that oral health is considered a vital part of a patient's overall health. This multidisciplinary approach can lead to better health outcomes, particularly for patients with chronic conditions like diabetes, where oral health can have a significant impact.

Challenges and opportunities

While these trends offer a positive outlook, the future of dentistry in Ireland will also face challenges.

The cost of adopting new technologies, workforce shortages, and the need for continued professional development are significant hurdles that need to be addressed. However, these challenges also present opportunities for growth and improvement. By investing in education, fostering innovation, and expanding access to care, Ireland can ensure that its dental services remain among the best in the world.

The Faculty of Dentistry's Annual Scientific Meeting will trace the footsteps of dentists from dawn to dusk

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rofessor Christopher D. Lynch, Dean of the Faculty of Dentistry, Royal College of Surgeons in Ireland (RCSI), is extending a very warm welcome to the faculty's Annual Scientific Meeting.

The event will take place over two days – on Friday 25 October and Saturday 26 October – at the RCSI's state-of-the-art Desmond Auditorium based at 26 York Street, Dublin. The theme for this year's ASM is 'A Day in the Life of a Dentist.'

"So, dear colleagues," said Professor Lynch, "let us explore this theme together, tracing the footsteps of dentists from dawn to dusk. From opening the morning post, bearing news and challenges alike, to the arrival of patients, each diagnosis is a puzzle to solve, a path toward wellbeing. Beyond enamel and pulp, dentists navigate emotions. They ease anxiety, answer questions and build trust. A child's first dental visit, a senior's denture adjustment; they handle each moment with grace. As dusk settles, dentists review charts, celebrate successful procedures, and plan for tomorrow."

A high point of the conference is the Edward Leo Sheridan Lecture, which will be delivered this year by Professor Alastair Sloan, Head of the Melbourne Dental School, Faculty of Medicine, Dentistry and Health Sciences, and

WORDS WILL PEAKIN Professor of Tissue Engineering and Dental Biology.

Prior to joining the University of Melbourne, he was Professor of Tissue Engineering and Bone Biology at the School of Dentistry, Cardiff University. Professor Sloan's research focuses on the regeneration of mineralised tissues and the behaviour and therapeutic use of dental pulp stem cells. He is interested in the cellular and molecular responses of these cells to biomatrices and compromised biological environments to understand their functional behaviour during tissue injury.

Professor Lynch says: "I would like to acknowledge the hard work of our Scientific Committee, chaired by Dr Edward Cotter, in the design and delivery of the meeting.

"The committee has meticulously curated an outstanding line up of speakers, each of whom is an expert in their chosen field.

"Their diverse perspectives and wealth of knowledge promise to enrich our understanding of dentistry and its evolving landscape.

"I eagerly anticipate your presence at the Faculty's Annual Scientific Meeting 2024.

"Together, we will explore the latest advancements, engage in stimulating

discussions, and celebrate the remarkable contributions of dental professionals."

RCSI ASM

A DAY IN THE LIFE OF A DENTIST RGSI FACILITY OF DENTISTRY ANNUAL SCIENTIFIC MEE



Dean's Welcome

Dr Nuala Carney: Opening the Post - Letter of Complaint

Dr Eamon Croke: Complete Denture Patient – Final Impressions

Dr Fergus Duddy: Patient in Pain

Dr Catherine McKinley: Paediatric Emergency – Fell in Playground

Questions

Break & Trade Show

Dr David Naughton: Root Planning Patient

Dr Justin Moloney: Extraction Upper and Lower 6's Patient

Questions

Professor Alastair Sloan: Edward Leo Sheridan Memorial Lecture

Lunch & Trade Show

Dr Caoimhin Mac Giolla Phadraig: Dental Pre-Assessment Bisphosphonates, Hip Replacement, Heart Valve Replacement

Mr Paddy Kenny: Hip Replacement - How Is It Done?

Mr Mike Tolan: Heart Valve Replacement - How Is It Done?

Dr Patricia Kearns: Prescribing Antibiotics

Questions

Break & Trade Show

Dr Seamus Sharkey: Bridge Preparation and Temporary **Bridge Patient**

Dr Niall O'Connor and Dr Lynda Elliott: Corporate Dentistry – **Individual Experiences**

Close

08.45

Dean's Welcome

Dr Micheal Healy: Composite Veneer Patient

09.25

Mr David McCaffrey: Revenue's New Compliance Intervention Framework

Dr Paul Moore: Digital Crowns Patient 3-3

Questions

10.50

Break & Trade Show

Dr Maurice Fitzgerald: Bleaching Patient

Dr James Hamilton: Single Implant Surgery Patient

Dr Sean McCarthy: Porcelain Veneers Patient - Preps, **Impressions and Temporaries**

Questions

Lunch & Trade Show

14.10

Dr Tom Canning: Diagnosis and Treatment Planning Wear Case

Dr Kevin Gilmore: Quadrant of Posterior Composites Patient

15.00

Dr Conor McAlister: Thinking of Retiring

Professor Albert Leung: New RCSI Dental School

Questions

Dean's Closure

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Implantologist and Oral Surgeon

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Jordi graduated as a dentist at International University of Catalunya (UIC). He also completed a Master's Degree in Clinical Research and a three-year International Master's Degree in Oral Surgery and Implantology at the same institution. Since then, he has collaborated with several clinics in London, Spain, and recently Belfast. Jordi's clinical practice is in the field of implant dentistry. He has significant experience and expertise in the treatment of bone tissue regeneration, implant related surgical procedures, as well as soft tissue management. Jordi is a university professor and a clinical lecturer at UIC where he teaches only masters and postgraduate students from the Oral and Maxillofacial Surgery department. He regularly attends congresses, lectures, and conferences, on all aspects of implantology to maintain his knowledge in this field. Jordi's aim is to always make patients' oral surgery experiences as pleasant as possible. In his spare time, he enjoys practicing a variety of sports and travelling.

If you would like to discuss referring a patient to **Dr Marques**, please contact our friendly reception team on **028 9024 3107**, visit us at **cosmeticdentists-belfast.co.uk** or email **reception.beechview@portmandental.co.uk**

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REPLICATING

NATURE

WORDS

Showcasing the art and science of replicating the natural form and function of teeth

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he 10th Bio-Emulation Symposium will be held in London on 29-30 November.

Founded in 2008, the Bio-Emulation Group set itself a mission to "dismiss dogmas in dentistry and promote minimal intervention".

Today, it is a growing community of highly skilled clinicians and technicians who are constantly

developing new methods to preserve and match the natural tooth.

"At the heart of our symposium is commitment to bioemulation, the art and science of replicating the natural form and function of teeth through minimum intervention dentistry," said a spokesperson "Our global community of dental professionals and researchers strives to push the boundaries of what's possible, ensuring that every patient receives care that mirrors the perfection found in nature."

The group's name was inspired by the term 'biomimetics', which is derived from the Latin words 'bios', meaning life, and 'mimesis', to copy or mimic. Biomimicry is an interdisciplinary field of mimicking nature's ideal biological approaches and strategies using chemistry, physics, mathematics and engineering concepts to develop novel synthetic materials and organs.

One of the most well-known examples was the – now banned – swimsuit designed for the 2008 US Olympic team. They were inspired by shark skin, which is covered with a type of scale, known as a dermal denticle, that disrupts eddy formation, thereby creating a low-pressure zone and propelling the shark forward.

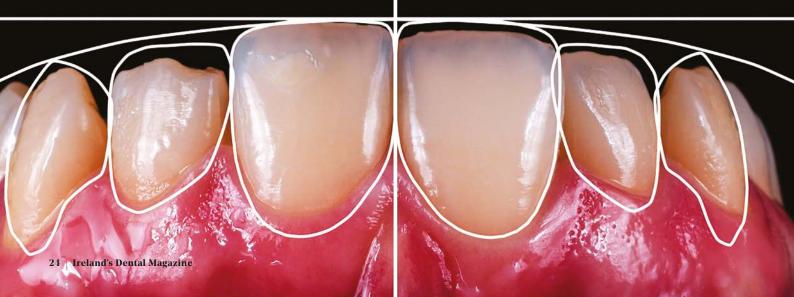
The history of biomimetics goes back to the first and second century, when evidence of crude dental implants was seen in Roman and the Pre-Columbian cultures of central and South America. In 659 AD, the first use of dental amalgam was found written in the Chinese literature. The term biomimetic was officially listed for the first time in Webster's Dictionary in 1974. Although biomimetic history goes back to the first century, it did not become popularised among scientists and researchers until the publication of the groundbreaking book Biomimicry: Innovation Inspired by Nature, by Janine Benyus, in 1997.

Biomimetic dentistry is the art and science of repairing damaged teeth with restorations that imitate the living tissues (e.g. enamel, dentin, bone, cementum, etc.) in terms of appearance, function and strength. The secondary biomimetic goal is to develop restorative materials that can restore the biomechanics of the natural tooth.

The applicability of biomimetics has been considered at molecular levels, in terms of promoting wound healing and soft and hard-tissue regeneration. At macro-structural level, biomimetic preservation of biomechanical, structural and aesthetic integrity of teeth can be achieved by various biomimetic restorative materials.

As gold sponsor, GC will naturally have a strong presence at the event. Kerstin Behle, EMEA professional services manager at GC Europe, said: "By close collaboration between dentists and dental technicians, learning from each other's expertise, all parties can enhance their technical skills, improve patient outcomes, and stay at the forefront of dental innovation. We, as a company, are grateful to get a front-seat view of the newest trends in the field, allowing us to effectively respond to customer needs."

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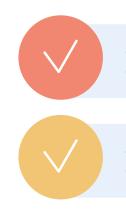


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NORTHERN IRELAND EXPERS SURVEYED



And they are calling for significant reform of dental contracts to prioritise prevention



new report from the College of General Dentistry, with support from consumer health company Haleon, has revealed oral health professionals' recommendations on how to best improve the provision of preventative oral healthcare.

Capturing insights from oral health professionals across the UK, including a panel in Northern Ireland, the Dental Health Barometer offers insight-driven recommendations on how to tackle the gap between the intentions of oral health professionals to provide preventative oral healthcare, and the practical delivery of this care.

The research found that oral health professionals seek redesigned NHS contracts to allow for more time and financial support in giving preventative oral care advice. It also calls for more resources to provide consistent and straightforward nationwide preventative oral healthcare education, to improve knowledge about healthy oral health habits, while tackling misinformation from sources such as social media.

Other recommendations include:
• Working with government to support updating the Delivering Better Oral Health Toolkit to be simpler and more user-friendly.

- A national communications campaign to tackle misinformation surrounding oral care.
- Utilising digital communications streams such as apps and video streaming platforms.
- Supporting the curation of a government, consumer facing, 'Delivering Better Oral Health' toolkit, providing insight-led recommendations.
- Encouraging businesses to ensure dental cover is included in their employee assistance programmes.
- Supporting professional development with the provisions of preventative care-focused continuous professional development (CPD).
- Celebrating professionals, such as dental hygienists, through the mainstream media.
- Working with non-dental health professionals, such as health visitors and midwives, to inform them of the benefits of preventative oral care.

Bas Vorsteveld, Vice President and General Manager Great Britain and Ireland, Haleon said: "Our findings could not come at a more pivotal time for the future of dentistry in the UK. Working alongside the College of General Dentistry, we outline the key opportunities and our jointly developed solutions to safeguard the future of preventative oral care provisions for UK consumers and oral health professionals alike."

The report also highlighted wider societal barriers to improving preventative oral care, such as competing narratives around oral health, diet and appearance from social media; the erosion of long-term patient relationships; a continuing professional skew in some dental practices towards clinical treatments and a tendency

WORDS WILL PEAKIN in the wider healthcare community to leave simple oral health advice messages to the professionals.

Roshni Karia, President at the College of General Dentistry, said: "Our focus groups found that many dentists may feel that they are conducting a lonely battle against entrenched patient habits around oral health care and doing so within NHS contracts, which are unfavourable to providing adequate preventative advice. Our work with Haleon highlights the need to take action to support oral health professionals in a real time of need."

The Dental Health Barometer was first launched in November 2023 and began with a survey of 2,000 UK consumers and 505 dental professionals and consumers.

The survey highlighted that while 87 per cent of dental professionals believed that preventative action on oral care is beneficial for patients and 49 per cent of consumers agreed, both audiences saw a great deal of room for improvement delivery.



LATELY, IT OCCURS TO ME WHAT A LONG, STRANGE TRIP IT'S BEEN*

THAT lyric has been one of my earworms since my university halls of residence days. The news is that the halls have recently been demolished, but the memories and perspective have not.

I was inspired to study dentistry as a result of childhood experiences. Born in the year that post-war sugar rationing was repealed, my parents spoiled their little boy. No surprise that my initial experience of dentistry was bad, aged six, held down in a dental <mark>chair, a black ru</mark>bber gas mask forced over my nose and mouth for a 'sniff and snatch' then waking up minus half a dozen deciduous teeth. Traumatised doesn't do it justice.

That same upstairs front room in a terraced house in Cardiff was where my mother had a dental clearance, aged 33, under general anaesthetic. She was a couple of months pregnant with my brother; but had irregular periods and nobody asked if she might be 'expecting'. As was the custom she was then left for three months for her <mark>gums to harden</mark>" before she was able to have full dentures.

The consequence of my trauma was a dental phobic, the child of two equal phobics, avoiding anything to do with dentistry if they could. Until one lifechanging day, when I was taken to see another dentist in the suburb where we lived. Denise O'Leary was a Cork graduate who gave me the things that mattered most, time and attention. I felt special. In return she received that most important of the things, trust. She listened to me, explained things to me, was sympathetic, empathetic and won over this frightened little boy, who by now was all of 10 years old.

Under her influence, from the age of 13, whenever people asked what I would do when I grew up, I knew I wanted to be my version of Denise O'Leary. University, when I finally got there, was great. But somehow my "wanting to save teeth and care for people" philosophy seemed at variance with a course that focused on WORDS ALUN K REES



Business Coach. dental practice owner who changed career, he now works as a coach, consultant, trouble speaker, writer and broadcaster. He brings the wisdom gained from his and achieve the rewards their work and dedication deserve

extractions, dentures and repair work. Where were the great steps forward in prevention? A quarter of a century of the NHS didn't seem to have made a huge difference. My training there was to produce a competent (within reason) and safe (hopefully) new dentist to join the rest of the nashbashing comrades in the trenches of caries and perio. Ah, perio! That was something of a Cinderella speciality, as was child dental health.

Later, I realised that in similar way to generals always fighting the last war, it is impossible to accurately teach techniques and philosophies for treating future needs and wants. And it was while searching for wants that I fell out of love with my profession. The summary of every 'check-up', a phrase I grew to hate, started with 'you need' in order to bring you back to that hard, or impossible, to define state, of 'dental fitness'. Searching to postpone life in a room for a while, I did three years of hospital oral surgery and then went into practice in what was once appropriately called an 'amalgam factory'. Five minutes for a check-up. Ten minutes for a new patient examination. Quadrant dentistry, I was given very few words of advice. Some I remember were: "If you have to give a block make sure you have more than one filling to do", "Get your backside in the air and fill your boots" and: "Bang in a local, sit 'em back in the waiting room and keep drilling and filling".

I managed to last two years. I discovered later I was the longest lasting associate to date. Of course, the problem was the associates. It couldn't have been anything to do with the principals, could it? I saved some cash, sold my sports car, and travelled abroad - but came back to the same old, same old, under a different roof, looking out of a different window, when I could; an associate bashing the nash'. I hated it and decided to find another way of making a living. Before I walked away I went on one 'final' course and met Roy Higson,

of Stockport Dental Seminars. He introduced me to occlusion, treating people as individuals, not just mouths on legs, and to perio and prevention. I read about the Pankey Institute and my horizons broadened. It became clear that I would have to work in my own place if I was to persist and survive.

So, 10 years after graduation, the great adventure commenced; find a site, build a business, discover the mysteries of marketing and money, of people and systems, of having a vision and realising it. Being able to evolve my own philosophy and share it. To follow my nose into fields allied to dentistry and eventually to reduce my commitment to the NHS with hardly a misstep and watch the practice continue to thrive. To become a respected and valued member of a community and to raise a family.

Then, one day nearly 20 years into ownership, the magic ceased. I had taken things as far as I could from my experiences and those of my parents' generation. Teeth didn't have to come out at night, dental disease was controllable and preventable, people could have healthy and straight teeth for life. And that was it, I was done. I had never truly enjoyed the 'watchmaker' element of dentistry. My hands were good enough, but I got little satisfaction from being a technical dentist. Susan, wife, hygienist, partner in all things and I decided to sell up. The practice took three days to find a buyer (at 50% over valuation) and nearly a year to complete the sale. I moved into coaching/consulting/speaking and carried on trying to apply my, fairly simple, philosophy of life with another generation or more of dentists and their teams who face, or often won't face, similar, but never identical challenges. Recently, I have focused more on individuals than businesses because that is where the doubts and insecurities are manifesting themselves, but that's another story.

*'Truckin' - The Grateful Dead.



Navigating the future of dentistry: a journey into guided implant dentistry

Neeraj Puri BDS (Glasgow, 1996)

Clinical Mentor, MSc Implantology programme, University of Central Lancashire

n the world of dentistry, the evolution of technology has transformed traditional practices into highly sophisticated, precise, and patientfriendly procedures. Guided implant dentistry, with

its roots dating back to around the late 90s, has become a cornerstone of modern implant dentistry. It has not only streamlined the implantation process but also revolutionised patient communication and engagement. In this article, we will embark on a journey through the realm of guided implant dentistry, exploring its evolution, benefits and future prospects.

Guided implant surgery

The advent of guided implant surgery marked a significant turning point in the field of dentistry. Guided implant surgery involves meticulously planned and executed dental implant procedures with the aid of digital technologies. Driven by a quest for precision, predictability and enhanced patient experiences, many clinicians like the author ventured into the world of guided implant dentistry.

Restoratively driven versus bone-driven surgical guide design

One fundamental choice in guided implant dentistry is deciding between restoratively driven and bone-driven surgical guide design. Restoratively driven design focuses on the final aesthetic outcome, ensuring that the implant placement aligns with the

desired tooth position. On the other hand, bone-driven design emphasises optimal bone health and integration with existing bone structures. The choice between these two approaches greatly influences the surgical plan and, ultimately, the patient's outcome. The author's journey into guided implant dentistry began in 2009, with a shift from positioning implants based on the available bone to a superior restoratively driven approach. Rather, than plan implant positions from a 2D OPGs, periapical radiographs or better still 3D CBCTs, planned software allowed consideration of the 3D position of teeth to ultimately deliver a more natural restoration, in keeping with the surrounding dental setup.

The digital advantage: working behind the scenes

One of the most significant advantages of guided implant surgery is the ability to work behind the scenes without the patient, assembling the pieces of the puzzle before the patient arrives for the procedure. This removes the pressure of time and having to manage the patient, with the focus on the planning.

This is made possible by a suite of digital equipment, including an SLR camera, a smartphone, intraoral scans, a CT scan machine, and digital planning software. These tools work in unison to ensure that every step of the implantation process is meticulously pre-planned.

Benefits of guided implant dentistry

The benefits of guided implant dentistry are manifold. It offers predictability, accuracy and safety, reducing errors and increasing efficiency. With precise pre-planning,

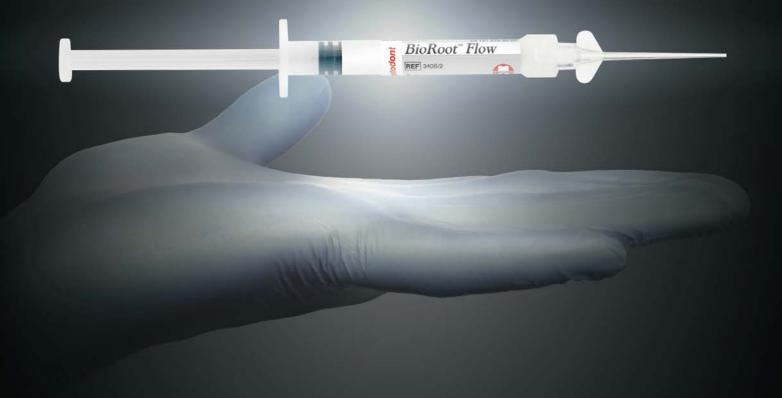
THE BENEFITS OF GUIDED **IMPLANT DENTISTRY ARE** MANIFOLD. IT OFFERS ACCURACY, AND SAFETY, **REDUCING ERRORS AND INCREASING EFFICIENCY"**

procedures can be completed in less chair time, leading to higher patient satisfaction. The ability to show the patient the visual plan, making communication and engagement more effective, enables them to better understand the process as well as your professional recommendations.

Guided implant surgery also minimises invasive protocols. In many cases large flaps or sutures are not necessary, which means less disruption of the anatomy and the blood supply and faster healing. With increased accuracy of intraoral scans, soft tissue volume can be accurately measured, allowing for better and more natural emergence profiles while respecting the biological width.

The ability to pre-plan at an unprecedented level allows for multiple procedures to be undertaken in one sitting. This reduces the treatment time and increases the uptake of treatment. No matter how much your patients love you, they want to minimise their visits to you!

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Seamless collaboration between patient, restorative, and surgical dentist

Guided implant dentistry promotes seamless collaboration between the patient, restorative dentist and surgical dentist. With all stakeholders working from a meticulously designed plan, the patient is more involved and aware of the steps involved in the process. This collaborative approach ensures that the final outcome is a predictable, aesthetically pleasing and optimally functioning dental implant supported restorations.

Cons of guided implant dentistry

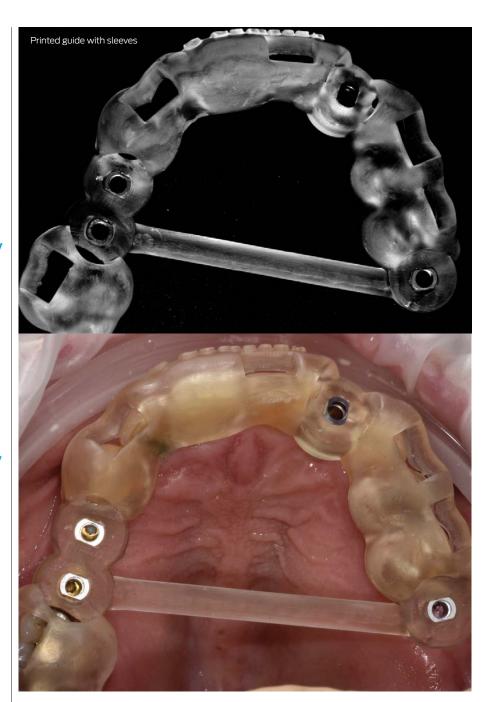
While guided implant dentistry offers numerous advantages, it is not without its drawbacks. The cost of acquiring and implementing the necessary technology can be substantial. Dental professionals also need to invest in further training to harness the full potential of these digital tools. And, like a pilot who always has a manual control option, it's essential to have a fallback plan in case the technology fails during a procedure. While rare, technical glitches can occur, and having a backup strategy is a prudent approach.

The evolution of guided surgery

Guided dentistry has undergone several iterations over the years. It began with physical guides with radiographic markers as simple as a ball bearing which allowed one to calibrate the distortion of an x-ray thus allowing for more accurate measurements in terms of distance from vital structures.

Next came restorative lab guides based on a mock-up of the tooth position, allowing the operator to visualise the envelope of the planned tooth during the surgery. One could go a step further and use a radio-opaque tooth which then allowed calibration and hence accurate measurement of the position and size of the tooth in relation to the bone volume.

With the advent of planning software, one was able to design and order labmade surgical guides. These used sleeves together with a guided drill system to direct the operator to the planned position of the implants. While this improved the speed and predictability of the procedure it still presented drawbacks. There was a lab cost (which could be considerable and added to an already expensive procedure), and the accuracy could be influenced by sleeve positioning and rigidity of the guide which meant some operator technical know-how was mandatory. If the patient had limited



mouth opening or long teeth this meant limited working space further challenged by long surgical drills.

What if during the surgery you find that the bone is not sufficiently dense to allow immediate loading or during extraction and immediate placement, the intra-furcal bone that you were reliant on to place the implant snaps? Do you abandon the procedure? Or do you abandon the guide and all the planning and go freehand? Not ideal as the 3D planned position of implants that you so meticulously determined is now difficult to replicate in the mouth.





This is where navigation-guided surgery has the edge. It has the same planning as with conventional guided but you no longer need a physical guide; it has a similar tactile feedback to conventional surgery (but which is lost in guide-based surgery). This means that you achieve real-time bone density feedback. No clunky guides mean you can use normal implant drills. This means one less kit as well as less reliance on the patient being able to open their mouth to accommodate a tennis ball, especially for molar sites. The biggest benefits are real-time information on the vital structures as you drill; the real-time angulation and drilled depth are shown on a magnified display not too dissimilar to what you would expect if you were docking a spacecraft on the space station. And, of course, the ability to change your plan in real time with the luxury of still visualising your restorative envelope.

Planning software

With the explosion in digital implant dentistry there are many planning software available. The author's personal experience is with Trios intraoral scan software and Planmeca Romexis. One provides the intra-oral scan data whilst the latter provides the CT scan information. Both these digital files are then uploaded into the DTX implant studio software. This is where the planning happens. Once planned the planned files links seamlessly with X-guided navigation technology.



X-guide navigation guided system

Conclusion: embracing the digital revolution

The future of guided implant dentistry is bright and promising. Embracing digital technology is no longer an option but a necessity for dental professionals who seek to provide top-tier care. The evolution of guided dentistry has made it more accurate, predictable and user-friendly. As technology continues to advance, the role of AI and robotics in dentistry will likely expand. In fact, Yomi roboticguided surgery is already a reality, offering a glimpse into the future of dental surgery.

Guided implant dentistry has come a long way from its inception in the 90s. It has evolved from simple lab guides to highly sophisticated navigation systems, offering numerous benefits in terms of accuracy, efficiency and patient engagement. While it does come with certain challenges, the advantages outweigh the drawbacks, making it a crucial component of modern dentistry. As technology continues to advance, guided implant dentistry will play an even more significant role in delivering superior patient care, driven by AI and robotics. It is a promising future that all dental professionals should be prepared to embrace and adapt to.

In 2007, I journeyed to the Nobel Biocare World Symposium where Team Japan presented flapless implant placement. I was awestruck and couldn't understand how they could accurately place implants which are surrounded by at least one 1mm of bone with optimal restoratively driven implant placement. But with navigation guided implant placement this is a daily reality.



THE FUTURE OF GUIDED **IMPLANT DENTISTRY IS BRIGHT AND PROMISING. EMBRACING DIGITAL TECHNOLOGY IS NO LONGER AN OPTION BUT A NECESSITY**"



TOOTH WHITENING: A BRIGHT IDEA?

Nicolas Coomber, COLTENE national account and marketing manager, explores the options

common desire for many patients is to achieve a whiter, brighter smile. In fact, a 2020 survey revealed that 22 per cent of Brits would like to have their teeth professionally whitened. An attractive smile can have a big impact on a person's social life, making it a popular cosmetic treatment sought out by a wide range of people. As such, it's important that clinicians are able to offer patients the right solutions for them. Clinicians should be knowledgeable about any potential limitations or complications that patients should be aware of before proceeding with treatment, to help them make an informed decision about their care.

CAUSES OF TOOTH STAINING

Discolouration can occur for many different reasons, with potential causes ranging from internal (intrinsic) to external (extrinsic) factors. The reasons for discolouration may have an impact on the patient's desire to whiten their teeth, as well as the ability to reach the desired shade

Intrinsic staining can be caused by factors like genetics, age (from worn enamel exposing yellow-coloured dentine), antibiotics, and non-vital discolouration. Additionally, some dental restorations, such as amalgam, can cause tooth staining. Extrinsic staining is usually caused by environmental factors like smoking, pigmented foods, and drinks including tea, coffee, and red wine.

THE USE AND SIDE EFFECTS OF HYDROGEN PEROXIDE

In the UK, the use of hydrogen peroxide (HP) for cosmetic purposes is very limited. It is illegal for tooth whitening products which contain more than 6% HP to be supplied or administered for cosmetic purposes. Further to this, tooth whitening products which contain 0.1%-6% HP should not be available directly to consumers, and should only be provided by a registered dental professional.

HP is associated with a number of side effects, particularly when used in high doses, or over a long period of time. Tooth sensitivity, for example, is experienced by 15-78% of patients who have had their teeth whitened using hydrogen peroxide. This common concern can cause patients unnecessary pain and, while it's often temporary, might be an indicator of long-term issues. Other side effects of whitening using HP include gingival irritation, enamel softening, surface roughness, demineralisation, and cervical root resorption (when used for internal bleaching).

EFFICACY OF HP IN LOW DOSES

Because the use of HP in the UK is limited to less than 6%, it is important to consider how effective it is to use such a low dose. A 2004 study found that a 5% hydrogen peroxide solution was just as effective as a 25% solution at whitening teeth. However, to achieve the same results, the 5% solution would need to be used 12 times compared to just once with the 25% solution. This means that, to achieve the desired shade using a concentration of less than 6%, more treatments will be required. As such, patients may need to return to the practice on several occasions to complete their treatment, or be prescribed at-home tooth whitening to complete over a period of time.

WHAT ARE THE ALTERNATIVES?

With the use of HP for tooth whitening restricted, it is sensible for clinicians to consider other options which produce a brighter smile for their patients without the negative side effects presented by hydrogen peroxide.

Phthalimido-peroxy-caproic acid (PAP) has emerged as a fantastic alternative for tooth brightening, and is likely to be the future of the cosmetic treatment modality. One study reported that PAP was nearly harmless to enamel, whereas HP would cause hypersensitivity and a burning sensation. Additionally, PAP had an equivalent effect to HP, but was fundamentally safer and more reliable.

The in-office brightening system, BRILLIANT Lumina from COLTENE is formulated with PAP. It offers patients tooth brightening without sensitivity, which is extremely gentle on the tooth structure, and it is very easy to use. When prescribed by a dentist, the treatment can be provided



by a dental therapist. More than 5,000 treatments have already been performed with BRILLIANT Lumina, with no tooth sensitivity observed during or after the procedure. This makes BRILLIANT Lumina the ideal choice for patients who are hoping to achieve a naturally brighter smile.

With so many patients looking to improve the appearance of their smile, offering a treatment which naturally brightens the teeth enables you to cater to their needs. Whilst many patients may assume that to reach their aspirations, aggressive tooth whitening or invasive restorative treatments may be required, leading to post-treatment sensitivity, it can be reassuring to offer a solution which makes comfort a priority.

With PAP, your patients can enjoy all of the benefits of a naturally brighter smile, without the sensitivity that is traditionally expected from tooth whitening using HP. This will be refreshing news for clinicians and patients alike, who wish to achieve stunning results, without the use of harsh and heavily restricted chemicals. Naturally, PAP is the future, and now is the time to embark on this journey with your patients.

Find out more, visit www.coltene.com, email info.uk@coltene.com or call 0800 254 5115.







Case study

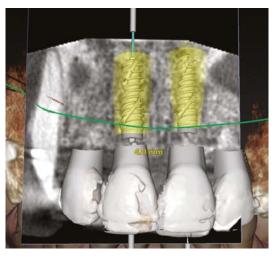
A fifty-five year old male attended wearing a four tooth to periodontal disease. All other teeth were sound and He had short upper lip with a consequential low smile line. Following consideration of all the options, he consented

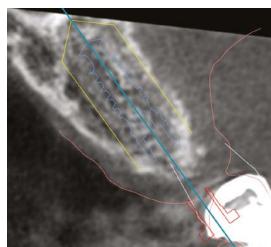
using a flapless X-guide protocol. A Waterlase was used to raise a partial thickness flap without releasing incisions to place a connective tissue graft. This created labial tissue to improve the emergence profile of the teeth. A temporary bridge was made to contour the tissue to help recreate and this was replaced a final two tooth bridge three months later.

TWO IMPLANTS WERE PLACED USING A FLAPLESS X-GUIDE PROTOCOL"



Initial presentation





Restoratively driven digital planning





Implant osteotomies and connective tissue graft to increase soft tissue volume





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