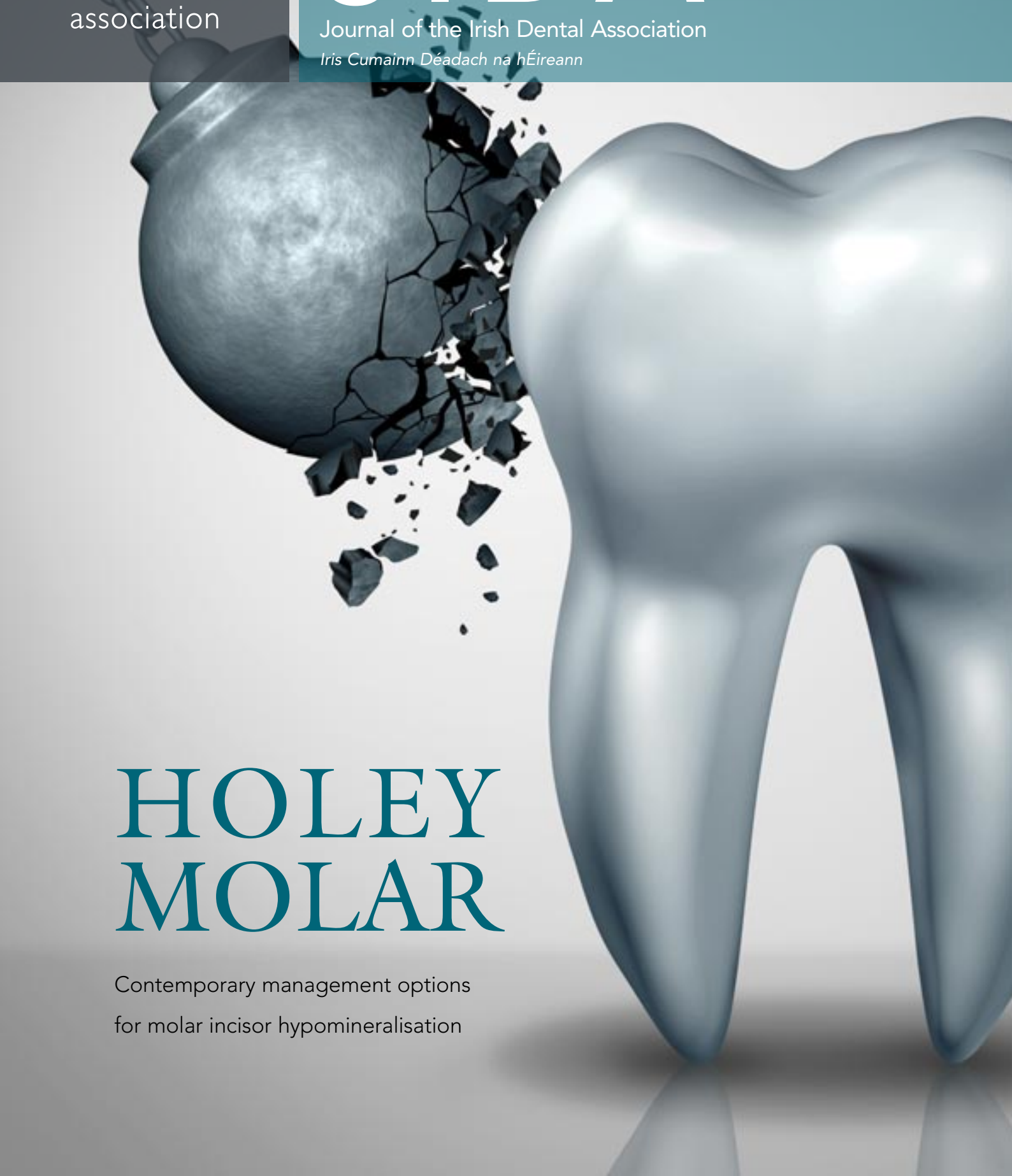
IDA
irish dental association

JIDA
Journal of the Irish Dental Association
Iris Cumainn Déadach na hÉireann

Volume 66 Number 1
February/March 2020



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Published on behalf of the IDA by
Think Media, 537 NCR, Dublin 1
T: +353 1 856 1166
www.thinkmedia.ie

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abc Audit issue January-December 2019: **3,986** circulation average per issue. Registered dentists in the Republic of Ireland and Northern Ireland.

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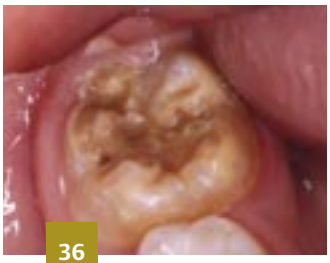

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* In-vitro study, actual confocal images after 5 applications ($p < 0.05$)

** For instant relief, apply directly to the sensitive tooth with finger tip and gently massage for 1 minute

\# vs novamin/sodium fluoride technology and stannous fluoride/sodium fluoride technology ($p<0.05$)

References

1. Hines D, et al. Poster, July 2018 IADR. Colgate-Palmolive Company 2018. **2.** Hines D, et al. Poster #0742, March 2018 AADR. Colgate-Palmolive Company 2018. **3.** Report Deon Hines-0003, 2016, confocal images after 5 applications. **4.** Nathoo S, et al. J Clin Dent. 2009;20(Spec Iss):123–130. **5.** Docimo R, et al. J Clin Dent. 2009; 20(Spec Iss):17–22. **6.** Ipsos, UK Patient Experience Programme on Colgate® Sensitive Pro-Relief™, results collected after 2-week trial, 192 respondents, 2016. **7.** Gernhardt CR, Poster presented 2016, FDI.

Dr Ciara Scott
Honorary Editor

Finding new pathways

In a time of great political change, dentists continue to work hard to best represent and treat their patients, but must also protect themselves.

Anthony Hopkins, left, and Jonathan Pryce in "The Two Popes." Credit: Peter Mountain/Netflix

I recently watched the film *The Two Popes*. It is an engaging and thoughtful story of two men with different ideologies from opposing factions of the Church in a changing world. I don't know if they ever really watched soccer and ate pizza together as the film depicts, but they did find a path beyond their differences that led towards a warmer regard, mutual respect and friendship. A holy allegiance.

As we go to print, Storm Ciara is, as predicted, wreaking havoc and making waves across Europe. Voters have also made waves and disrupted the status quo in the general election. This mandate for change was not widely predicted. Over the next few weeks, new collaborations and allegiances may be needed to form a government. A new pathway to the future.

In our last issue, Dr Rona Leith introduced us to a way to identify children who may be at risk of molar incisor hypomineralisation (MIH) in the primary dentition, and at increased risk of caries. In this issue, Dr Aoibheann Wall and Dr Leith offer advice on the contemporary management of MIH. Practitioners will already be aware that the Minamata Convention on Mercury does not permit the use of amalgam in children under 15 unless medically necessary, and this timely review offers us a useful guide to the evidence for using alternate materials, techniques and treatment options for this patient group.

In our second peer-reviewed article, Aileen Callanan and her co-authors from UCC introduce us to the findings of their survey on the use and disposal of amalgam in Ireland in the wake of Minamata. This is the first of two papers on this important topic, the second of which will be published in our next issue. While the surveyed group of dentists is small, it offers a valuable insight into dentists' current practice and preferences, and their perceptions of the need for training and contractual changes to facilitate best practice.

Our members' news in this issue highlights members' concerns about the limitations of the existing DTSS contract for delivering the highest quality of care to their patients. The IDA retired dentist survey offers some reflective wisdom on what really matters in a successful practice career. Our practice management feature also offers some advice from Dental Protection to avoid being a 'superdentist' in this challenging climate. We are often advised to put our own needs first to stay resilient, but this can be counterintuitive when we spend our working lives caring for others.

Many of us are deeply saddened by the news that the Keelin Shanley has passed away. Keelin was a bright and courageous journalist and a friend of the dental community. Among the many tributes that her friends and colleagues have paid, this interview from last year's *Sunday Independent Life* magazine on courage and resilence was reproduced. This is what Keelin said: "Courage is the ability to put worry, ego and fear to one side and push forward to try and bring about change. It's being able to say, 'What's the worst that can happen?' and facing down the prospect of failure. Courage is different to resilience, but the two are often confused. Resilience is about being able to deal with adversity, or making the best of something when you have no choice but to put up with it. Courage, to me, is proactive – choosing the tough route, when you also have an easier option. It's the person who intervenes when they see bullying or mistreatment; the person who questions the status quo; who risks their own well-being or comfort to do the right thing. We've seen huge courage both in Ireland and around the world in recent years, with individuals speaking out about experiences in an effort to change attitudes for those coming behind them".

Let's hope that whatever new Government is formed, it has the courage to confront the inequalities that exist in oral healthcare in Ireland, and the wisdom to realise that the proposed oral health policy won't work in its current format.

PLAQUE CONTROL: 'GOOD' CAN BE BETTER

THE PROVEN ORAL CARE COMBINATION

A combined analysis of 29 clinical studies on essential oils has been published in the *Journal of the American Dental Association.*

This showed that after 6 months of using **LISTERINE®**, after brushing and inter-dental cleaning, **37%** of patients had at least half their mouth free from plaque, compared with only **5.5%** of those who just brushed and used inter-dental cleaning.[1]

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To see the full study visit http://jada.ada.org/article/S0002-8177(15)00336-0/abstract

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1. Araujo MW, *et al. J Am Dent Assoc* 2015;146:610–622.
2. Johnson & Johnson. Data on file.

BRING OUT THE BOLD™

Prof. Leo Stassen
IDA President

Collaborative is a better approach

Policy has no hope of succeeding if it is not supported by the people who must implement it. Collaboration is the only route to success.

The election has thrown up many issues highlighting how governments and political parties need to listen to the views of the people. It amazes me that the main political parties did not have the sense to recognise the importance of health and housing in the debates, despite votes of no confidence in the ministers responsible. We all know health and housing are difficult portfolios.

There are many other difficult issues too, but not all of them need to be difficult. The new national oral health policy, the cervical screening difficulties, the hospital waiting lists, and the seemingly uncontrollable spend on the national children's hospital are all examples of issues where a different approach would have yielded benefits for everyone.

This has been the real problem: the failure to ensure all stakeholders are working together, collaboratively, and that ministers are getting the correct advice. General health and oral/dental health are intimately related and an attempt by the HSE to force general dental practitioners and the public dental service to implement a very naive policy, without having being part of the discussion is poor management. As a result, we the dentists, both independent practitioners and public dental surgeons, do not believe in the new policy and are convinced that it is not in the best interests of our patients and oral healthcare in Ireland.

The Association produced a document entitled 'Towards a Vision for Oral Health in Ireland', and shared it with the former Minister and Chief Dental Officer (CDO). We can only advise the next Ministers for Health, Social Protection, Finance, and Public Expenditure and Reform to review it with the CDO and her advisory teams to see what the people who will have to implement any oral health policy believe will work.

There is not the capacity, the will, the finances, or the skill set in independent dental practice to take on the HSE's responsibility for the provision of children's and special needs' oral healthcare, and the associated medical emergencies. Nor can independent practitioners take on the responsibility for ensuring each child referred to specialist centres receives their care, even if it takes a few years.

The Association will continue to work on behalf of all its members and to engage with the Department of Health as soon as they give us the same basic Framework Agreement as they gave our medical colleagues in the IMO. This will allow us to engage in negotiations without fear of prosecution as well as allow us to make some headway on the DTSS/Medical Card negotiations. This is a simple, important, non-confrontational request with no associated costs.

Governance

The Board of Directors of the Association recently adopted new governance arrangements and this will make things more simple, more transparent (including financial information) and ensure good governance. We are looking to bring our 2020-2025 strategy to the AGM in Galway in May and thank you all for your contributions to it. Officers, directors, staff and all members have had the opportunity to contribute. We believe it is visionary as well as achievable and it is optimistic. The new Management Committee will have two non-executive directors, and we have worked at ensuring the job specifications complement the skills of the Management Committee. Our Governance and Risk Management Committees are working together, reviewing our documentation and the risks we face. All Regional Committees should be up and operational soon, again with good and open governance. The GP and PDS Committees are active and importantly our negotiation committees are active and ready for any discussions should they occur. We are a volunteer organisation and I am grateful to everyone for all their work.

See you in Galway

My presidency comes to an end in May 2020 just before Dr Anne O'Neill's Annual Scientific Meeting. She has put together a great conference and pre-conference programme and I hope to see as many of you as possible there. Try and come to the dinner, as well, as it gives us all the opportunity to talk and integrate. The more we work together, the more we trust each other, the more likely we are to achieve your vision - *is féidir linn*. Inclusiveness is a very important strategic aim of our new strategy and it will only work if we all work on it.

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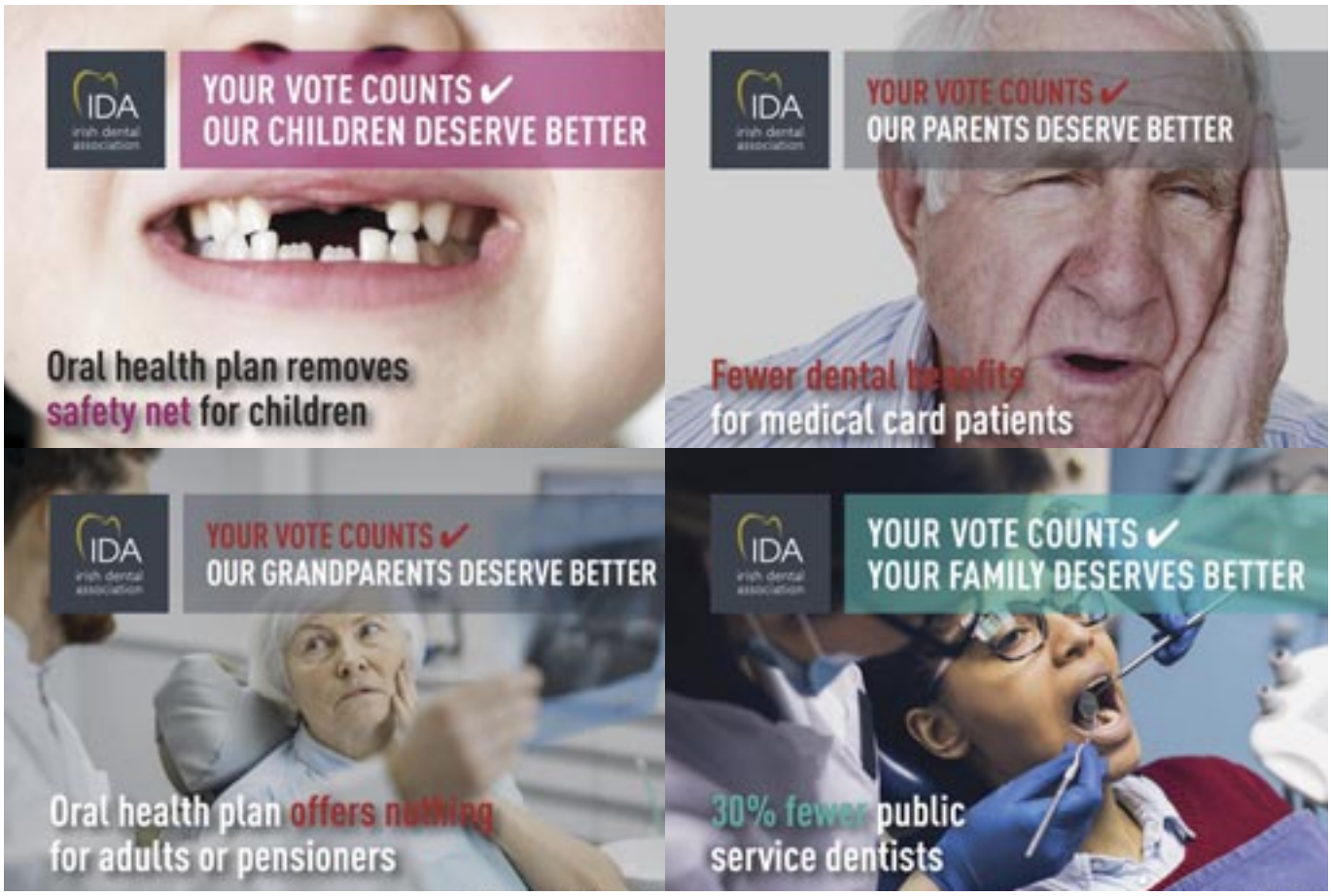
[1] If haemostasis cannot be achieved after full pulpotomy, a pulpectomy and a RCT should be carried out, provided the tooth is restorable (ESE Position Paper, Duncan et al. 2017)
[2] Taha et al., 2018

Voting for oral health



In the run-up to General Election 2020, the IDA undertook a significant campaign to raise awareness among candidates and the public on issues around oral health and dentistry. The Association provided material for members to share on social media, using #youdeservebetter to highlight such issues as the 20% rise in the number of under-16s requiring dental care, and the 30% drop in numbers of public service dentists. The campaign highlighted the major flaws in the national oral health policy, which removes the safety net of the Public Dental Service for children, and offers nothing for adults or pensioners. The Association also produced a guide to help members to engage with candidates on the doorsteps. In order to inform members on candidates' policies, the IDA contacted the main political parties with the following questions:

1. Will your party sit down with dentists to discuss an alternative plan for improving children's dental health in place of the unworkable proposal contained in the 2019 oral health policy, Smile agus Sláinte?
2. How would you deal with reducing emergency dental admissions as one of the leading causes of treatment for children under general anaesthesia in our hospitals?
3. How would you make it easier for everyone to access dental care at their local dentist?
4. Do you support proper and meaningful consultation by the State with the dental profession prior to introducing significant change in providing dental care?
5. Will you commit to employing at least 100 extra dentists in the HSE and make a start towards reversing the cut in the numbers of dentists working in the public service, which have fallen by 30% over the past decade as the numbers of eligible patients have risen by 20%?

The following parties responded

Sinn Féin

"Dental care is an incredibly important strand of healthcare. The state of your teeth affects your overall health, with gum disease linked to numerous other health problems in other parts of the body. Throughout the austerity years, public-funded dental provision suffered a litany of cuts. Children have been particularly affected by these cuts. Such failure means that situations now exist whereby children are waiting as long as 12 years for their first dental screening. In order to ensure that the public has good dental health, the Public Dental Service (PDS) needs to be properly funded and the number of dental surgeons, orthodontists, dentists, and dental nurses in the PDS needs to be increased. We will deliver free dental care for all children and young people under 18 over the course of government. Our spokesperson is committed to engaging with the dental profession in relation to the future of dental healthcare in Ireland and would be happy to meet with

representatives of your profession to outline our proposals in greater detail and to discuss the outworkings and benefits of our proposals, once the Dáil is reconvened."

Sinn Féin priorities include:

- delivering free dental care for all children and young people under-18; and,
- increasing funding for the Public Dental Service.

Solidarity/People Before Profit

Q1. Yes.
Q2. Free dental care as part of a national health service, reducing financial barriers to more regular check-ups, as well as better education around dental care.
Q3. We would make it free as part of a national health service.
Q4. Yes.
Q5. Yes.

Fianna Fáil

Fianna Fáil did not respond directly to the questions. However, the party's election manifesto makes the following statement with regard to oral health:

"Enhance dental and oral health services

Oral health has long been regarded as the poor relation of general health and has generally been overlooked. While a new national oral health policy has been published, we believe it is flawed and inadequate.

"We will:

- consult with the dental profession on how the new oral health policy can be improved and implemented;
- bring forward a reformed new policy that will have an implementation plan; and,
- replace and improve the 1985 Dentists Act."

Other parties

No other parties responded to our questions; however, party manifestos stated as follows:

- Fine Gael have committed to offering free dental care to under-16s.
- The Social Democrats have committed to introducing "improvements in dental care".
- The Greens have committed to introducing a free post-natal check-up under the Maternity and Infant Care Scheme.
- Labour: zero mention of dental/oral health.
- Aontú: zero mention of dental/oral health.

Quiz

Submitted by Dr Joe Hennessy.

A seven-year-old patient presented to their dentist for a general dental check-up. The dentist was immediately concerned with the appearance of her occlusion (**Figure 1**).

Questions

1. What is a likely cause of this malocclusion?

2. What treatment options are available for the patient at this age, and why is it important to resolve the habit as soon as possible?

Answers on page 45.

DUAL ACTION
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IN ONE TABLET

A new analgesic brand that is clinically proven to provide
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References: 1. Merry A, et al. AFT-MR-1: a prospective parallel group, double-blind comparison of the analgesic effect of a combination of paracetamol and ibuprofen, paracetamol alone, or ibuprofen alone in patients with post-operative pain. Department of Anaesthesiology, University of Auckland, New Zealand 2008. *compared with the same daily dose of standard paracetamol or ibuprofen alone.

Easolief Duo 500 mg/150 mg film-coated tablets Each tablet contains paracetamol 500 mg and ibuprofen 150 mg. **Presentation:** A white, capsule shaped tablet with breakline on one side and plain on the other side. **Indications:** Short-term symptomatic treatment of mild to moderate pain. **Dosage: Adults/elderly:** The usual dosage is one to two tablets taken every six hours up to a maximum of six tablets in 24 hours. **Children:** Easolief Duo is contraindicated in children under 18 years. **Contraindications:** Severe heart failure, known hypersensitivity to paracetamol, ibuprofen, other NSAIDs or to any of the excipients, active alcoholism, asthma, urticaria, or allergic-type reactions after taking acetylsalicylic acid or other NSAIDs; history of gastrointestinal bleeding or perforation related to previous NSAID therapy, active or history of recurrent peptic ulceration/haemorrhage, severe hepatic failure or severe renal failure, cerebrovascular or other active bleeding, blood-formation disturbances, during the third trimester of pregnancy. **Warnings and precautions:** This medicine is for short term use and is not recommended for use beyond 3 days. Clinical studies suggest that use of ibuprofen, particularly at a high dose may be associated with a small increased risk of arterial thrombotic events. Patients with uncontrolled hypertension, congestive heart failure, established ischaemic heart disease, peripheral arterial disease and/or cerebrovascular disease should only be treated with ibuprofen after careful consideration and high doses should be avoided. Careful consideration should be exercised before initiating long-term treatment of patients with risk factors for cardiovascular events. The use of paracetamol at higher than recommended doses can lead to hepatotoxicity, hepatic failure and death. Patients with impaired liver function or a history of liver disease or who are on long term ibuprofen or paracetamol therapy should have hepatic function monitored at regular intervals. Severe hepatic reactions, including jaundice and cases of fatal hepatitis, though rare, have been reported with ibuprofen. Paracetamol can be used in patients with chronic renal disease without dosage adjustment. There is minimal risk of paracetamol toxicity in patients with moderate to severe renal failure. Caution should be used when initiating treatment with ibuprofen in patients with dehydration. The use of an ACE inhibiting drug, an anti-inflammatory drug and thiazide diuretic at the same time increases the risk of renal impairment. Blood dyscrasias have been rarely reported. Patients on long-term therapy with ibuprofen should have regular haematological monitoring. Like other NSAIDs, ibuprofen can inhibit platelet aggregation. GI bleeding, ulceration or perforation, which can be fatal, has been reported with all NSAIDs at anytime during treatment. Combination therapy with protective agents (e.g. misoprostol or proton pump inhibitors) should be considered. Use with concomitant NSAIDs including cyclooxygenase-2 selective inhibitors should be avoided. NSAIDs may lead to onset of new hypertension or worsening of pre-existing hypertension and patients taking antihypertensive medicines with NSAIDs may have an impaired anti-hypertensive response. Fluid retention and oedema have been observed in some patients taking NSAIDs. NSAIDs may very rarely cause serious cutaneous adverse events such as exfoliative dermatitis, toxic epidermal necrolysis and Stevens-Johnson syndrome. Products containing ibuprofen should not be administered to patients with acetylsalicylic acid sensitive asthma and should be used with caution in patients with pre-existing asthma. Adverse ophthalmological effects have been observed with NSAIDs. For products containing ibuprofen aseptic meningitis has been reported only rarely. NSAIDs may mask symptoms of infection and fever. **Interactions:** Warfarin, medicines to treat epilepsy, chloramphenicol, probenecid, zidovudine, medicines used to treat tuberculosis such as isoniazid, acetylsalicylic acid, other NSAIDs, medicines to treat high blood pressure or other heart conditions, diuretics, lithium, methotrexate, corticosteroids. Refer to summary of product characteristics for other interactions. **Fertility, pregnancy and lactation:** Easolief Duo is contraindicated during the third trimester of pregnancy. **Driving and operation of machinery:** Dizziness, drowsiness, fatigue and visual disturbances are possible after taking NSAIDs. If affected patients should not drive or operate machinery. **Undesirable effects:** Dizziness, headache, nervousness, tinnitus, oedema, fluid retention, abdominal pain, diarrhoea, dyspepsia, nausea, stomach discomfort, vomiting, flatulence, constipation, slight gastrointestinal blood loss, rash, pruritus, alanine aminotransferase increased, gamma-glutamyltransferase increased, abnormal liver function tests, blood creatinine increased and blood urea increased. Refer to Summary of Product Characteristics for other adverse effects. **Pack size:** 24 tablets. **Marketing authorisation holder:** Clonmel Healthcare Ltd., Clonmel, Co. Tipperary. Marketing authorisation number: PA0126/294/1. Medicinal product not subject to medical prescription. For retail sale through pharmacy only. A copy of the summary of product characteristics is available upon request. **Date prepared:** October 2019. 2019/ADV/EAD/1179i.

CLONMEL HEALTHCARE

Minimum wage increased from February 1

All practice owners should be aware that the minimum wage has increased, from February 1, 2020, to €10.10 per hour.

This is an increase of 30 cent. The National Minimum Wage applies to all employees, including full-time, part-time, temporary and casual employees. Certain categories are excluded from its provision including employees who are close relatives of the employer, such as a spouse, father, mother, son, daughter, brother or sister, and employees undergoing structured training such as an apprenticeship (other than hairdressing apprenticeships).

There are sub-minima rates, which are a percentage of the full rate and apply to employees aged 19 and younger.

South East Branch Annual Scientific Meeting

The ASM for the South East Branch will take place on Friday, March 6, at Mount Juliet Estate, Kilkenny. The ever-popular Prof. Richard Ibbetson and Dr Kathryn Harley will both give presentations on the day.

There will also be a presentation from IDA CEO Fintan Hourihan on the oral health policy and from Dr Noel Kavanagh of Dental Protection on record keeping. The Branch AGM will take place at 4.00pm that afternoon.

Date for your diary

The Annual HSE Dental Surgeons' Seminar will take place on October 8-9 next. Venue and details to be confirmed.

Prep design course in fixed prosthodontics

The recent hands-on prep design course in Cork sold out very quickly! In conjunction with Coltene and NSK, the course will be provided by Dr Seamus Sharkey. A second date will be announced shortly for autumn 2020.

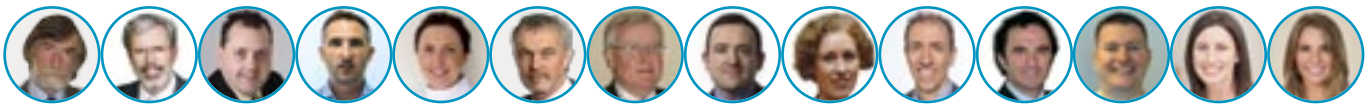
IDA webinars

Following on from a very successful and popular webinar in October last, the IDA is pleased to announce a series of webinars for spring 2020.

Topics will include:

- the Hall crown technique;
- oral health for our ageing populations;
- virtual surgical planning in facial reconstruction; and, many more.

Webinars are open to all IDA members to view at their own preferred time. Further details and how to log on will be emailed to members.



How to run a successful dental practice

A full day-long practice management course will take place on Thursday, May 14, at the Galmont Hotel, Galway. Dr James Goolnik, a UK-based GP, will present the course. You may remember James, who addressed an IDA meeting a few years ago in Croke Park. The Association received outstanding feedback on James's presentation on the day, and as a result we invited him back to give a full-day course on operating and running a successful dental practice.

The course will include:

- setting business objectives for your practice;
- empowering your team to perform;
- attracting the right patients and keeping them; and,
- controlling business costs and learning how to price your services.

This course is suitable for dentists and/or practice managers. To book, log on to www.dentist.ie.

Peter Ward to retire from the BDA in 2020

Pictured at a function held to mark his retirement were: outgoing BDA CEO Peter Ward (centre), IDA CEO Fintan Hourihan, and French dental union leader Marco Mazevet.

Wrigley Oral Health Grants 2020

The Irish Dental Association, in conjunction with the Wrigley Company Foundation, is delighted to announce year five of grant aid towards worthy oral healthcare projects around the country. Dental support grants are available to help fund specific community service projects with a focus on improving oral health and educating participants in this area. Up to eight projects across the country will be funded, with two projects receiving €5,700, three projects receiving €2,500 and three projects receiving €1,000. The scheme is open to all IDA members to apply. Application forms will be sent to all members and will be available to download from www.dentist.ie.

Medical emergencies and BLS course

All dentists are obliged to keep up-to-date medical emergencies and basic life support (BLS) certification. This needs to be done every two years and must be Irish Heart Foundation certified. The IDA will be running courses in the following locations this spring:

- Kilkenny: Saturday, March 21;
- Tralee: Saturday, March 28; and,
- Dublin: Saturday, April 4.

To book for you or your team member, please log on to www.dentist.ie.

Martin Woodrow appointed BDA Chief Executive

Martin Woodrow has been appointed as Chief Executive of the British Dental Association (BDA) on a permanent basis. Martin has been Acting Chief Executive since August 2018, having joined the BDA in 2013 as Director of Policy and Professional Services.

BDA Chair Mick Armstrong said: "We are delighted to have a steady hand on the tiller at Wimpole Street. Martin Woodrow joined us with a formidable track record built in trade unions and healthcare associations. Since then he put those skills to work and won the respect of partners and policymakers, BDA members and staff. We are confident he will continue to build on this success".

Martin said: "I'm honoured to be given the opportunity to become BDA Chief Executive on a permanent basis. The BDA has so much to be proud of and with the bold steps we've taken recently, I am certain that we have much to look forward to in the future".

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Irish dentist represents European dentistry on phase-out of amalgam

Dr Jane Renehan, Chair of the Council of European Dentists (CED) working group on dental materials and medical devices, recently attended a stakeholders' workshop in Brussels to discuss the findings of the dental amalgam phasing out feasibility study. Jane is a member of our International Affairs team and a highly regarded delegate at the CED as part of the IDA delegation, which also comprises Drs Robin Foyle and Nuala Carney, and CEO Fintan Hourihan. The meeting focused on the optimum time period in which to phase out dental amalgam. Three options were provided:

option 1: complete phase-out by 2025;

option 2: complete phase-out by 2027; or,

option 3: complete phase-out by 2030.

According to Jane: "It was a long day with many parties contributing to the discussion. The Council of European Dentists was well prepared. There was strong attendance by countries, individuals and organisations, who expressed a view that nothing short of an immediate ban of dental amalgam was the only way forward. As the only group representing dentists in the room our task was difficult! However, I believe the contacts we have built over time with the Commission proved valuable as we were given a very positive and fair hearing in the room. The final report will be published in mid April. It will then go from the Commission to the politicians in Europe – the Council and the Parliament – and the ultimate decision on when the phase-out will happen will be a political decision".

From left: Dr Susie Sanderson, British Dental Association; Klass-Jan Bakker, Dutch Dental Association; Caroline Heilpern, CED secretariat; Prof. Dr Gottfreid Schmalz, German Dental Association; and, Dr Jane Renehan, Irish Dental Association.

The Association's Quality and Patient Safety Committee is currently examining the many issues associated with amalgam use and further guidance will issue in due course.

IDA member survey on retirement

The survey results highlight the importance of starting your pension young and keeping a balance between your work and personal life.

While 59% of IDA members would like to retire between the ages of 60 and 65, only 34% feel that they will be able to. This is one of the findings of a member survey recently conducted by the IDA and Omega Financial Management. The survey was conducted to determine how well prepared IDA members are for retirement. All members over the age of 45 were invited to participate and there was a strong response from nearly 100 members.

Interestingly, 9% intend on working past the age of 72, with 80% of these citing work satisfaction as their primary reason to work past retirement age. It is frequently reported that planning a fulfilling lifestyle post retirement is key to maintaining wellbeing and keeping a link to work can be part of this for some. The remaining 20% cite financial reasons to continue working past this age.

Looking at the practicalities, 64% of members have a retirement plan in place. Members with pensions tended to start contributing early, with over 90% starting by the age of 40. A total of 85% of members have pensions from various sources and countries. This speaks to the importance of having a plan to identify and consolidate funds effectively for tax purposes.

Non-pension sources of income

Almost two-thirds of respondents will have a rental income in retirement, in addition to their pensions. When it comes to selling a practice however, the results are a little less encouraging. Only one-third of respondents feel confident about selling their practices and when asked why, the most common reason given was "the percentage of fee income being paid to associates". The "cost of regulatory compliance" came in second and "income from medical card patients" closely followed in third place. However, despite the low level of confidence in selling a practice, over 80% of respondents feel that being a practice owner is more beneficial than being an associate.

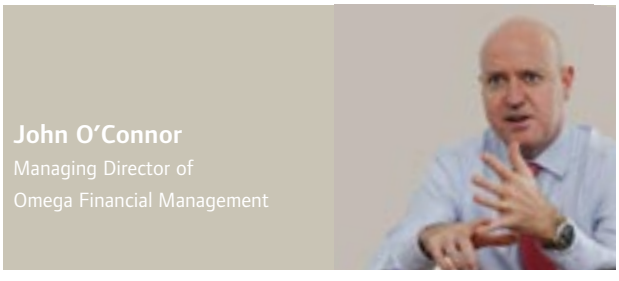
What would you tell new dentists?

The survey asked respondents what advice they would give to young dentists starting out in their careers. A number of themes emerged ranging from career advice to business management, mental health and personal finance.

Working with a mentor and/or in a well-run practice at the beginning of your career are strongly recommended in order to gain experience and figure out what suits you best. Specialising early on is very highly recommended. Members encourage continual professional development (CPD) to keep options open and a healthy level of interest in your work.

In relation to practice management, many members highlighted focusing on patients, that treating them well will ultimately lead to a successful viable practice. This includes being honest, empathetic and mindful of what they can afford. Watching the balance of private and medical card patients, offering flexible hours and consistency with pricing structures were also cited. On a very practical level, one member suggested spending a week with a service engineer to learn how to fix equipment inhouse.

When it comes to personal finance, almost all of the comments relate to starting a pension early and making regular contributions. In addition, members recommend keeping a close eye on arrangements and reviewing every few years. On a more philosophical note, members talk about the importance of mental health and wellbeing, urging young dentists to be mindful of the hours they work and keeping a healthy balance. To look after oneself as well as staff and patients, take time for fitness and keep a good support network of colleagues. The message is not to over stretch yourself so that you can enjoy your work, and your life overall. As one member succinctly puts it: "It'll all work out in the end. Don't let stress get to you".



John O'Connor
Managing Director of
Omega Financial Management

Some additional career guidance quotes from older dentists!

"Be a chippie."
"Get a Government job – retrain as a teacher/guard."
"Find a career in the financial services industry."
"Be an actor."
"Go do something else."

Ian Creighton, Quintess Denta Implant Sales Manager.

Neodent Guided Surgery

Neodent implants, a Straumann Group Brand, are exclusively distributed by Quintess Denta in Ireland. Patient expectations regarding tooth replacement are increasing and are even higher when it comes to treatment duration and aesthetic outcomes. According to Quintess Denta, Neodent Guided Surgery helps clinicians to provide prosthetically driven treatments, enabling them to perform immediate protocols with peace of mind, exceeding patients' expectations. The company states that Neodent Guided Surgery offers more treatment flexibility to create optimal tooth replacement. The patient is scanned with a commercially available 3D (CB)CT scanner that delivers digital imaging and communications in medicine (DICOM), which are combined with intraoral or lab scanning images from the patient. The company states the 3D dataset (DICOM) can be imported directly into commercially available planning software and superimposed with the intraoral image. The implant is positioned with respect to the patient's anatomy and the desired prosthetic outcome. Quintess Denta states that Neodent Guided Surgery is compatible with major commercially available software, is designed to reduce chair time and postoperative discomfort, and helps to increase implant positioning accuracy.

Dental Hygienist of the Year announced

From left: Pamex Dental Representative AnnMarie Downey; KIN Dental Hygienist of the Year Eimear Staunton; and, Commercial Manager of Pamex Limited Cormac Kearney.

Eimear Staunton from Westport, Co. Mayo, has been named the KIN Dental Hygienist of the Year 2019. This award recognises dental hygienists who have excelled in their work. The Award is run by the Irish Dental Hygienists' Association and sponsored by Irish dental distributor Pamex. Eimear received a trophy and €1,000.

Five hygienists made it to the national final where judges from the dental hospitals and UCC chose the overall winner based on a piece each entrant had to write on a chosen topic. Eimear's was on 'Oral care for the elderly in a nursing home setting'.

Eimear has been working as resident dental hygienist in Rathfarnham Dental Practice, Dublin 14, since 2017, where she has a particular interest in caring for nervous patients.

Tom Murphy, CEO of Pamex, said of Eimear: "She has worked abroad but decided to come home and retrain as a dental hygienist, and now has secured the top honour in her profession. Eimear graduated in 2017 as a dental hygienist from UCC Dental School and Hospital and while there she was awarded two major awards".

Dental nurse resurrects forgotton device

An entrepreneurial dental nurse has re-created an innovative dental tool from 40 years ago, which had been lost to time. The instrument is called DR Mirror (double retractor mirror) and allows for the retraction of a gingival flap and cheek simultaneously with one hand.

Dublin-based dental nurse Deirdre Walsh has over 20 years' experience working with periodontists, dental surgeons and orthodontists. She has worked for the past 15 years with periodontist Dr Donal FitzGibbon, who used the original instrument routinely for periodontal and implant surgery. According to Dr FitzGibbon, who bought it over 40 years ago, it has proved invaluable over the years. When Deirdre started investigating further, she soon realised that the instrument was no longer available so set about researching dental instrument manufacturers that might take on the task of creating a small quantity that she could bring to the Irish market.

Within months, Deirdre had a prototype and her first order placed. She has loaned the instrument to a number of practitioners, including Dr Morgan O'Gara from Blackrock Dental. Commenting on DR Mirror, Dr O'Gara said: "DR Mirror is a useful instrument when carrying out implants. It is easy to use and lightweight stainless steel, yet is very simple and beneficial".

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The 'superdentist' trap

A recent Dental Protection survey found worrying levels of 'presenteeism' among the dental profession, highlighting the need for organisation-wide interventions to safeguard dentists' well-being.

Dentists, along with most healthcare workers, are notoriously reluctant to take time off when they are sick. This is well intentioned, but unfortunately results in 'presenteeism', which means the individual may be in the workplace but performance may not be as efficient or to their usual standard.

A survey of dentists by Dental Protection as part of its Breaking the Burnout Cycle campaign reveals the extent to which presenteeism is affecting the profession.

Some 83% of the dentists surveyed said that they would always come into work, even when they are too unwell, fatigued or stressed to be at their best. Almost 50% said they feel guilty when taking time off. Interestingly, only 15% of responding dentists said that it was their colleagues who made them feel guilty.

Dr Martin Foster BDS MPH DipHSM

Martin is Head of Dental Services for Ireland at Dental Protection.

Barriers to self-care

There are various reasons why dentists do not feel able to take time off when needed. For example, those providing care under State-funded arrangements or operating with very tight financial margins can be under pressure to maintain consistently high volumes of work, which will make taking time off very challenging. Also, cancellations can disappoint patients, busy appointment books can be very tricky to reschedule, and more pressure can be put on colleagues. However, not all barriers to taking time off are quite so obvious.

There is a deeply entrenched attitude in the culture of healthcare professionals that clinicians do not acknowledge their own health concerns or take time off sick. There seems to be a widespread expectation among professionals that they must always present as a picture of health and strength to the wider community. There is an acceptance of all of the downsides of their calling, such as long hours, no breaks, irregular meals and lack of rest simply because it is the profession they chose and these elements go with the territory. There is almost a sense that giving in to illness is a sign of weakness. This perpetuates an almost superhuman belief system, which for doctors is known as the 'superdoctor' syndrome.

It appears that the 'superdoctor' concept could certainly be applied to dentists too given the behaviours revealed in our survey, and this is concerning.

Risks

Working while sick, or not taking time off to recover after an illness, can result in a number of issues in addition to those arising through not performing efficiently, which can obviously have far greater repercussions than the inconvenience caused to patients and colleagues by the dentist calling in sick.

Continuing to work while ill can actually increase a dentist's risk of longer-term sickness absence. In addition to adding to the risk of mental health issues, it can also lead to burnout.

When dentists feel burnt out it is not only bad for the dentists concerned but also for patients and the wider dental team. Obviously, dentists who are happy and engaged find it much easier to be compassionate and provide

better care. The Dental Protection survey showed that 23% of dentists said they often, or in fact always, feel disillusioned with their work. Time pressure (64%), workload (37%) and lack of resources (23%) were cited as the top three factors contributing to this.

Dental training has historically resulted in many dentists measuring themselves against a superhuman benchmark. 'Superhumans' are often wedded to their work both physically and emotionally, do little else and often pay a terrible personal price in terms of the level of functioning of their personal relationships, as well as the level of their enjoyment of work.

Dentists who find themselves in the 'superdentist' trap expect the unachievable of themselves: "I have to work excessive hours"; "work is life"; "don't get sick"; "I am the pillar of the community"; "hard work and self-sacrifice equals goodness", etc. There is a danger that trying to live up to the 'superdentist' expectation of oneself comes at the cost of burnout. Ensuring that goals are realistic and sustainable is an important step in maintaining a healthy approach and building resilience.

Research has also found that healthcare employees who continue to work while unfit to do so are more likely to make mistakes, leading to adverse clinical outcomes. In the survey, 26% of dentists suspected that emotional exhaustion had contributed to an irreversible clinical error and 32% believed this was due to a lack of concentration.

Safeguarding our well-being

This link between 'superdentist' behaviour and dento-risk is clear, and Dental Protection has an obvious interest in this area.

As individuals, accepting when we are not fit to do our jobs is part of building our own resilience but, as a profession, we could do more to tackle this complex issue.

The concept of the 'superdentist' is a key element that influences the risk of burnout and it is recognised that such an attitude can be hard to change. In our Breaking the Burnout Cycle report, we call for organisation-wide interventions to safeguard the well-being of dentists, including a recommendation that all dental organisations have clear policies and procedures in place to ensure that dentists and the wider team feel able to take breaks and to take time off when ill. Taking sickness leave when this is required is responsible professional behaviour and should be viewed as such.

All staff should be made aware of the risks of burnout and educated on the importance of taking breaks and time off. The resilience of individuals and teams must be seen as a priority. Of course, it is not all about policies. We as a profession should also support our colleagues, and those in senior positions should lead by example.

Dental Protection is committed to supporting members of the profession dealing with burnout and also to encouraging working practices to help prevent this.

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Use and waste management of restorative materials in the Republic of Ireland

Précis

This study found that dentists in Ireland are largely compliant with EU Waste Directive 2008/98/EC relating to dental amalgam.

Abstract

Aim: This study aimed to investigate the use and waste management of dental amalgam and mercury-free alternatives by general dental practitioners in Ireland.

Methods: A cross-sectional survey-based study was adopted. A 53-question survey was piloted and distributed to dentists working in general dentistry in Ireland. Participants were recruited from the Dental Council of Ireland Dental Register.

Results: A total of 285 dentists (12%) responded to the survey. The study found that resin composite was the most commonly placed restorative material by respondents (69%), followed by dental amalgam (20%). Compliance with waste management of dental amalgam was high, with 93% of respondents reporting having a waste management policy concerning the disposal of waste amalgam and 87% compliance with the fitting of amalgam separators.

Conclusions: The study found that dentists in Ireland are compliant with the Minamata Convention on Mercury, and identified training and remuneration as two of the main barriers to implementing a total phase-out of dental amalgam.

Journal of the Irish Dental Association February/March 2020; 66 (1): 29-35

Introduction

The Minamata Convention on Mercury is an internationally binding treaty, which aims to protect the environment and human health from sources of emissions and releases of mercury. The use of dental amalgam is one of the areas the Minamata Convention seeks to address.[1] The protection of the environment from emissions of mercury that may occur via dental amalgam waste contaminating the sewage system is paramount.[2] Dental amalgam has been successfully used as a restorative material for more than 165 years.[3,4] Measures have already been introduced in line with European Union (EU) guidelines to reduce the potential emissions of mercury from this source, which contributes to mercury pollution globally. Since July 1, 2018, dentists are not permitted to use dental amalgam in deciduous teeth, pregnant and breastfeeding women, and children under the age of 15 years unless it is deemed medically necessary by the dental practitioner, and informed consent has been given by the patient or their guardian. Since January 1, 2019, all dental practices are obliged to have amalgam separators fitted and the use of bulk mercury has been prohibited. In addition, from July 1, 2019, all EU member states must have a national plan in place regarding the reduction of mercury emissions, which must be communicated to the public.[1,5] Finally, dentists must ensure that all waste is collected by a registered waste management company. These new measures are in addition to any existing legislation relating to dental amalgam use and waste disposal. The Dental Council of Ireland has outlined these measures for its members in its code of practice for dental amalgam.[5] Under the European Union (Mercury) Regulations, 2018, local authorities have been given the power to

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monitor compliance of dental facilities relating to the handling of waste amalgam. An individual authorised by the local authority may enter any premises where products containing mercury are being used, handled or produced, and must be furnished with any requested documents relating to the handling of waste amalgam.[6,7]

The ratifying of the Minamata Convention on Mercury has raised questions about the placement of restorations by dentists in Ireland, and the proportion of these restorations that are dental amalgam or mercury-free alternatives. The main mercury-free alternatives are resin composite (RC), glass-ionomer cement (GIC) and resin-modified glass-ionomer cement (RMGIC). There is also a gap in the knowledge relating to compliance with existing and new legislation in the area of dental waste, particularly dental amalgam waste. In the Irish context, there is a lack of data pertaining to the placement of restorations and key waste management practices adopted by dental practices, with no national studies on the topic. Without baseline data quantifying the numbers of restorations placed by dentists in Ireland, it is difficult to quantify any change that may occur as a result of the Minamata Convention.

Restorative dentistry accounts for a sizeable proportion of the day-to-day work carried out by general dental practitioners. The provision of dental care in Ireland is complex, operating under a public-private mix. The predominant expenditure on dental care is private out-of-pocket expenses, alone or in conjunction with one of the publicly funded schemes.[8] The three publicly funded schemes that provide dental treatment for the population of Ireland are the Dental Treatment Services Scheme (DTSS) and Public Dental Service operated by the Health Service Executive (HSE), and the Dental Treatment Benefit Scheme (DTBS) operated by the Department of Employment Affairs and Social Protection (DEASP). The DTSS provides dental treatment to low-income adults over 16 years in possession of a medical card, which is based on means testing and medical need. The DTSS provides treatment through contracted independent dental practitioners on a fee per treatment basis.[9] The Public Dental Service currently provides treatment to school-going children and adults, children with special needs and those in possession of European Health Insurance cards through salaried dentists in the HSE local clinics. The DTBS provides insured persons, based on their pay-related social insurance (PRSI) contributions, with very limited subsidised dental treatment, currently consisting of a free yearly examination, and a scale and polish at a €15 fee to the patient.[10] While data is available in relation to the publicly funded dental schemes such as the DTSS dating back as far as 1994,[11] because of the restrictions on treatment type it may not apply to the general practice of dentistry in Ireland.

This study aimed to quantify the number of restorations placed by dentists in Ireland and to quantify the proportion of these that were amalgam or mercury-free alternatives. Data on key waste management practices adopted by dental practices were also collected. This paper discusses the use of restorative materials by dentists in Ireland, the key waste management practices adopted in Irish dental practice, and training received by Irish dentists concerning the placement of restorations and waste management.

Methods

Study design

The study adopted a descriptive cross-sectional survey design. This involved distribution of a survey to target a nationally representative sample of dentists taken from the Dental Register.[12] Ethical approval was provided by the Social Research Ethics Committee (SREC) in University College Cork (Log 2018-108). Informed consent was obtained from each participant; a consent form was included in the mailing to each dentist, and completing the form was considered as the participant giving their informed consent to participate in the study.

Sampling frame

The sampling frame used for the recruitment of participants was the Dental Register. All dentists practising dentistry in Ireland must be on the Dental Register. The Register was requested from the Dental Council, and comprised the names of 3,124 dentists at the time of receipt in June 2018. All identifiable specialist dentists were removed from the sample, as were those with addresses outside of Ireland. The 2,400 remaining dentists on the Register were used as the sampling frame and were invited to participate across three waves. A mailing company was used for distribution of the surveys and returns were forwarded to investigators in Cork University Dental School and Hospital (CUDSH). A stamped addressed envelope was provided in the mailing to increase participation, along with an information leaflet describing the nature of the study, a consent form, and contact information of investigators. Unique identifiers were assigned to each return envelope (but not the questionnaire) to enable follow-up of non-responders and preserve anonymity. Non-responders who were found via internet search and contacted via telephone were invited to have the survey posted or emailed to them.

Survey instrument

The survey instrument was modelled on a previous survey, 'No more amalgams', designed by Prof. Chris Lynch and used in a similar study in Wales.[13] A study conducted in Australia exploring restorative decision-making was also used to inform the survey content.[14] The survey was adapted for use in the Irish context, and prior to distribution it was piloted locally, by dentists in private practice and staff in CUDSH. The 53-question survey consisted of both fixed-choice and open-ended questions, and was laid out over six distinct sections: current practice; waste management; knowledge of phase-down; attitudes; training; and, demographics.

- **Section 1** was designed to capture data relating to dentists' current practice in the placement of restorations and to quantify the number and type of restorations placed.
- **Section 2** questioned the key waste management practices of dentists concerning both amalgam and amalgam alternatives, namely composite, GIC, and RMGIC.
- **Section 3** captured data relating to knowledge of the Minamata Convention on Mercury.
- **Section 4** questioned dentists on their attitudes to and experience of placement of the various restorative materials available, and material selection.
- **Section 5** was designed to capture data relating to participants' previous and potential future training.
- **Section 6** asked key questions regarding the demographics of the participants and their practices.

Survey instrument distribution

The survey was distributed from September to December 2018 across three waves. Wave 1 was distributed in September, Wave 2 in November, and Wave 3 in December. Convenience sampling was adopted at several key events including dental conferences, meetings and study groups to maximise

Table 1: Key demographics of the sample of respondents to the questionnaire.

Demographics	Number	%*
Sex		
Female	118	41.5
Male	166	58.5
Location of practice		
City	128	45.1
Town	128	45.1
Rural	28	9.9
Principal	153	54
Associate	120	42

**Percentages do not always reflect all 285 respondents, but those who answered the question.*

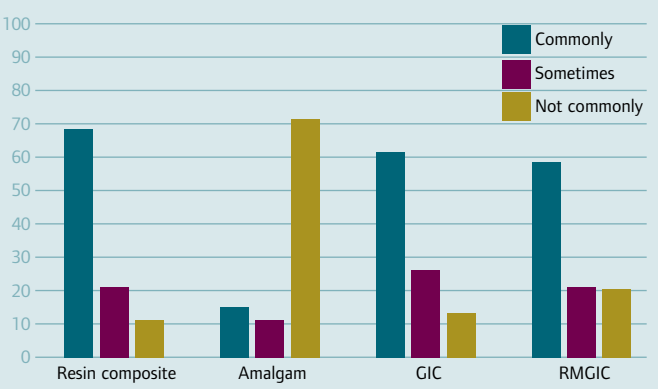

FIGURE 1: Use of various restorative materials in primary dentition.
**Percentages do not always reflect all 285 respondents, but those who answered the question.*

participation levels. At events, dentists were invited to complete the questionnaires and leave them in boxes. Follow-up was conducted following the distribution of Wave 1 of the survey to maximise participation, as outlined above.

Data entry and analysis

Data entry was performed by a data management company, Seefin Data Management (Seefin DM Head Office, Seefin House, Listowel, Co. Kerry, V31 AK27) and uploaded in an Excel format. The Excel file was cleaned by investigators at CUDSH and uploaded to SPSS Statistics for data analysis. The data was analysed using IBM SPSS Statistics version 24 for Windows (IBM House, Shelbourne Road, Ballsbridge, Dublin 4). Quantitative analysis of survey data using descriptive statistics, including frequencies, was performed by researchers at CUDSH. Frequency tables were used to calculate the minimum, maximum, and the mean for each of the variables. Tables and graphs were used to display the results where appropriate.

Results

A total of 285 dentists agreed to participate in the study, giving a response rate of 12%. **Table 1** outlines the key demographics. Dentists were asked the proportion of patients that they treat under the various dental schemes, i.e., DTSS, DTBS, and private patients. The proportion of patients that dentists reported treating privately was 47%, DTSS was 28% and DTBS was 34%. Not all of the dentists who responded to the survey completed the questionnaire in full, so the percentages do not always reflect the 285 who responded. All results are based on reported responses from participants and not observed activity.

Use of various restorative materials

Table 2 displays the numbers, proportions and averages of the various restorative materials placed by dentists in the week prior to completing the survey. Participants were asked a series of questions relating to the placement of restorative materials (amalgam, composite, GIC and RMGIC) in the primary dentition, permanent dentition in children aged 15 years and younger, permanent dentition in those aged 16-59, and permanent dentition in those aged 60 and over. **Figure 1** displays use of the various restorative materials in the primary dentition.

Participants were asked under what circumstances they would place an amalgam in a clinical situation where a child under 13 required a restoration. There were many varied reasons outlined in the responses, including: never use amalgam; moisture control; special needs; poor co-operation; allergy; severe caries rate; bleeding; poor isolation; poor oral hygiene; and, poor access. Some of the responses are displayed below:

> *"Special needs patient, permanent molar (including occlusal surface) and where moisture control is not possible, limited co-operation…"*

Table 2: Number of restorations placed in the week prior to completing the survey.

	Dental amalgam	Resin composite	GIC	RMGIC	Total
Restorations placed*	20%*** (n=1,675)	69% (n=5,857)	5% (n=459)	3% (n=374)	8,455
Average number of restorations placed by respondents** (number of respondents)	8 (219)	14 (273)	3 (132)	3 (105)	30 (284)

* *Refers to the number of restorations placed in the week prior to completing the survey. Proportions are calculated based on the number of each restorative material out of the total number placed.*
** *Based on the number of each of the various restorative materials placed out of the total number of respondents for each material type.*
*** *Percentages do not always reflect all 285 respondents, but those who answered the question.*

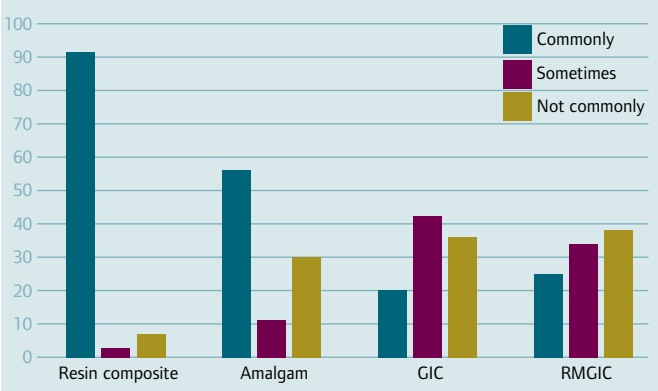

FIGURE 2: Use of various restorative materials in patients aged 16-59 years (%).
**Percentages do not always reflect all 285 respondents, but those who answered the question.*

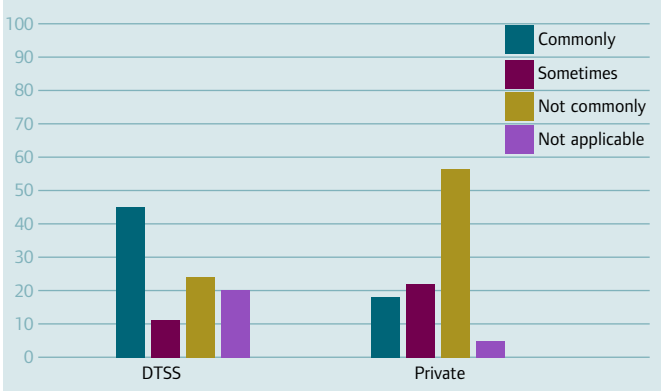

FIGURE 3: Frequency of amalgam placement in private and DTSS adult patients requiring a single restoration in a posterior tooth.
**Percentages do not always reflect all 285 respondents, but those who answered the question.*

"A large MO or DO deep where GIC integrity very dubious with composite and/or access or co-operation leading to isolation problems"

"High cavities, no isolation, subgingival, bleeding gums"

"Un-cooperative child, lots of caries, poor oral hygiene"

"…if a patient has a history of allergy to composites or other suitable material…"

"Where moisture control is impossible and the alternative is extraction"

"Not co-operative, wet conditions, gross caries"

"Difficulty of access, difficulty of moisture control, where time or co-operation are compromised"

In permanent dentition in children aged 15 years and under, 32% of dentists reported commonly placing amalgam, 90% reported commonly placing composite, 35% reported commonly placing GIC, and 36% reported commonly placing RMGIC. **Figure 2** displays the use of the various materials in those aged 16-59. In patients aged over 60, 53% of dentists reported commonly placing amalgam, 85% reported commonly placing composite, 31% reported commonly placing GIC, and 31% reported commonly placing RMGIC.

Participants were asked a series of questions in relation to the frequency with which they place amalgam in adult and child patients for private treatment and DTSS treatment. **Figure 3** displays the frequency of placement of dental amalgam in adult patients requiring restoration in a single posterior tooth in private and DTSS patients. In a private adult patient requiring restorations in two or more posterior teeth, 16% of dentists reported placing amalgam often or all of the time. In medical card patients requiring restorations in two or more posterior teeth, 46% of dentists reported placing amalgam often or all of the time.

Table 3: Proportions of respondents who had waste management policies relating to waste amalgam, waste composite and extracted teeth containing amalgam, those who had amalgam separators, and those who dispose of waste amalgam in a dedicated container.

Waste management policy	Yes %* (n)	No % (n)	Don't know % (n)
Dental amalgam	92 (n=262)	1 (n=2)	6 (n=17)
Resin composite	16 (n=46)	71 (n=201)	12 (n=34)
Extracted teeth containing amalgam	70 (n=197)	21 (n=60)	8 (n=23)
Amalgam separator fitted	87 (n=246)	9 (n=24)	4 (n=12)
Dispose of waste amalgam in dedicated container with mercury vapour suppressant	78 (n=214)	11 (n=30)	11 (n=31)

* *Percentages do not always reflect all 285 respondents, but those who answered the question.*

In children under 15 years who require a single posterior restoration, 3% of dentists reported placing amalgam often or all of the time, and in children aged 15 years and under requiring two or more posterior restorations, 4% of dentists reported placing amalgam often or all of the time.

Waste management

Table 3 displays the proportion of dentists who have various waste management policies, amalgam separators fitted, and dispose of waste amalgam in a dedicated container with a mercury vapour suppressant. The number reporting emptying the amalgam separator daily was 11%, weekly was 17%, fortnightly was 3%, and monthly was 26%, with 43% not knowing the frequency with which it was emptied.

In relation to the disposal of waste chairside, most dentists reported that it was the responsibility of the dental nurse (n=167), followed by the dentist (n=84) and practice manager (n=18). When it came to keeping records of amalgam disposal, the individual who held responsibility was reported to be the dentist (n=101), the dental nurse (n=58) and the practice manager (n=89). These results are reported in frequencies, as many participants selected more than one answer. Participants were asked to specify where they dispose of waste composite. The most frequently reported disposal methods included clinical waste, general waste, and sharps bin, while many also specified that they don't have composite waste or have very little composite waste. Some participants' responses are given below:

"Clinical waste, incineration"

"Depends if contaminated, yellow bin"

"We don't waste it, trapped bits of comp in filters, or chunks out of teeth go into yellow clinical waste bin"

"General waste"

"In sharps bin"

"Very little waste, clinical waste"

"Normal waste if not in contact with saliva"

Dentists were asked to specify where they dispose of extracted teeth containing amalgam. The most frequently reported disposal methods were: clinical waste; sharps waste; amalgam waste; dedicated box for extracted teeth; given to patient; and, given to dental students. Some of the answers given are provided below:

"In an extracted tooth container to be collected by medical waste company"

"Yellow bags, clinical waste"

"Dental nurse disposes of it in amalgam container"

"Usually into sharps bin or give to patient to take home…"

"I give all extracted teeth to patient or their parents. I consider it part of their body. I explain they must dispose of it properly"

"In a jar for third-year dental undergraduate students for clinical skills lab"

"Sharps bin for incineration"

Dentists were asked questions about waste transfer forms (WTFs, formerly C1 forms), with 53% reporting that they knew what a WTF was and 31% knowing how long WTFs must be retained for.

Education and training

Most of the sample (77%, n=221) received their dental training in Ireland. Participants were asked questions relating to their dental school training in the placement of both posterior composite and amalgam. As part of their training, 71% received didactic instruction in posterior composite placement, with 67% receiving clinical training in posterior composite placement. Almost 91% of dentists surveyed had attended continuing professional development (CPD) training relating to the placement of posterior composites. When it came to amalgam, 99% of dentists received didactic instruction in amalgam placement as part of their dental school training, with 97% receiving clinical instruction. Only 44% of dentists reported that they felt both they and their staff had received adequate training in the disposal of waste amalgam and other dental waste. In relation to CPD, participants reported what type they felt would be the most suitable. Frequencies are reported for this free text answer: hands-on, n=92; lectures, n=3; seminar, n=2; online, n=8; and, a combination of all listed, n=82.

Discussion

With restorative dentistry accounting for a large proportion of the daily work undertaken by dentists, and parts of the EU Mercury Regulation already implemented, this research is timely. The gathering of baseline data pertaining to the placement of restorative materials by dentists in Ireland will allow any change in use and waste management to be quantified. Wales and Australia have recently conducted similar studies relating to the placement of restorations and the selection of restorative materials by dentists.[13,14] If Ireland is to achieve a total phase-out in the coming years, measures will need to be put in place to support dentists to achieve this. A large proportion of dentists in Ireland report commonly placing amalgam as a restorative material across all age groups, including those under the age of 15 years and in primary dentition who, under current guidelines, should only have amalgam placed when medically necessary. Dentists were not specifically questioned about their use of stainless steel crowns (e.g., the Hall technique), which is a restorative option in the management of carious deciduous molars. Exploring some of the clinical scenarios in which dentists report placing amalgam is timely, as the recommendations relating to Minamata were introduced on July 1, 2018, and the distribution of the survey instrument began in September 2018. Training and remuneration are two of the primary areas identified by this study where further support may be required for dentists towards achieving a total phase-out. In terms of remuneration, contrasting private and medical card care was identified as a barrier to placing posterior composites, with 17% of participants placing amalgam all the time in private patients compared to 46% in medical card patients.

The results of the study demonstrate that most dentists in Ireland are already selecting composite as their primary material of choice for restorations. With continuing improvements in composite materials in recent years, and better aesthetics, this is not surprising. There have been continuing improvements in composite materials and its longevity is often as good as, if not better than, amalgam in many clinical situations.[15,16] A study of posterior composite placement in the UK and Irish dental schools found that students were placing an average of twice as many resin composites compared to amalgam.[16,17] For participants in this study, 71% reported receiving didactic training and 67% clinical training in posterior composite placement, with 99% receiving didactic instruction and 97% clinical training in amalgam placement. This indicates that

some dentists have not received adequate training in the placement of posterior composite compared to amalgam. Offering accessible CPD training may be of benefit.

EU guidelines relating to the Minamata Convention came into effect in July 2018,[6] and further changes in January 2019, with more to follow in the coming months. The distribution of the survey for this study began in September 2018, two months after the changes came into effect. Although the use of amalgam in deciduous teeth and in children under the age of 15 years has not been permitted since July 1, 2018, unless it is deemed medically necessary, dentists are still placing amalgam in this cohort, with 15% commonly placing amalgam in deciduous teeth and 32% placing amalgam in permanent teeth in those aged 15 years and under. This study found that there were many and varied situations outlined by participants where they felt the placement of amalgam in this cohort was warranted. Some of the reasons outlined by dentists ranged from an allergy to mercury-free alternatives to some physical limitations in the placement of composite materials, such as moisture control and isolation of the tooth. Many participants cited poor co-operation and special needs as a reason to place amalgam; in this instance, further training in dealing with patients with special needs or poor co-operation may be beneficial. An Australian study also identified issues with moisture control in the placement of composite materials.[14] Perhaps clearer guidelines relating to the medical necessity with which dentists are permitted to place amalgam in this restricted group is warranted.

Funding appears to have an impact on the choice of material placed by dentists in adult patients in possession of medical cards. This is most likely because the HSE only permits dentists to place amalgam restorations in posterior teeth for this patient cohort. Composite restorations are, however, permitted in anterior teeth. Unless this is revised, dentists will have no choice but to routinely place amalgam in posterior cavities. The average proportion of patients that dentists reported treating under this scheme is 28%, and so this could have an impact on a substantial proportion of the population receiving restorations with respect to equity and best practice. This is also reflected in a study conducted in Wales where dentists were found to more frequently place amalgam in NHS-funded dentistry compared to privately funded dental care.[13]

In particular, waste management would appear to be an area where further training may be beneficial for dentists and associated dental staff, with just 44% reporting having received adequate training in the area of amalgam and other dental waste disposal. Dentists are required to have waste management policies in relation to the disposal of waste amalgam and extracted teeth containing amalgam. Some 93% of dentists reported compliance with waste amalgam and 70% with extracted teeth containing amalgam. Currently in Ireland there are no requirements for dentists to have waste management policies in relation to the disposal of mercury-free alternatives. This is reflected in the response to the survey, where 16% reported having a policy for the disposal of resin composite. Dentists have been required to have amalgam separators fitted in their practice since January 1, 2019, in addition to existing PARCOM legislation requiring mandatory amalgam separators. Dentists reported 87% compliance with this. Programmes and Measures for Reducing Mercury Discharges (PARCOM 89/3) is a European Environment Agency policy relating to disposal of mercury. It stipulates a legal requirement in Ireland to separate amalgam waste with an amalgam separator. There appears to be a lack of clarity in relation to waste disposal chairside, with many dentists reporting that their dental nurse is charged with chairside disposal of dental waste, including amalgam. It is, however, the responsibility of the practice owner, as the generator of waste, to ensure correct disposal.

Limitations

This study is not without its limitations and the results must be interpreted with caution. One of the major limitations was the low response rate often observed when surveying healthcare professionals.[18] The response rate to the study was low, despite follow-up, with many self-selecting to participate. However, surveys of dental practitioners have historically low response rates. A similar study conducted in Australia had a response rate of approximately 3%,[19] while a study conducted in Wales had a response rate of over 40%,[9] with a similar number of participants as this one (n=270).

It was discovered during follow-up that many of those who were invited decided to opt out of the study based on factors that they believed rendered them ineligible. Some of the reasons cited were: not placing amalgam; not having HSE contracts; or, small practice size. This self-selection out of the study could mean that the study sample is not nationally representative. Non-response bias could be present, and respondents to the survey may be characteristically different to those who did not respond. Respondents had high levels of CPD and good compliance; this may not be representative of the general dental population.

There were also issues with the use of the Dental Register as the sampling frame. There was a lack of uniformity regarding the addresses on the Register, some being home addresses and some practice addresses. This made postal mailing and follow-up difficult. The low response rate had an impact on the data analysis that could be performed. Many of the returned surveys had missing data, which resulted in discrepancies in the numbers and proportions reported in the results section.

Conclusion/recommendations

This study found that, generally, the members of the Irish dental profession who were sampled are highly compliant with the Minamata Convention on Mercury. The conclusions are of course based on those who responded to the survey and due to the low response rate may not be reflective of the dental profession as a whole in Ireland. Further research is warranted into the impact of waste resin composite making its way into the environment. Further clarification relating to medical necessity in the placement of dental amalgam in the restricted groups may be warranted. Conducting more qualitative research in the selection and placement of restorative materials in the cohort of those aged 15 years and under in the near future would also be beneficial.

The study identified training and remuneration as two of the main barriers to implementing a total phase-out of dental amalgam in the future. CPD opportunities should be offered to dentists and other dental staff members in relation to waste disposal of amalgam and other dental waste. More training should also be offered to dentists to upskill in the placement of posterior composite where required.

Acknowledgements

The authors would like to acknowledge the Environmental Protection Agency (EPA), which provided funding for this project under the EPA Research Programme 2014-2020 (grant number 2017-RE-MS-8). The views expressed in this article are solely those of the authors and not necessarily those of the EPA. The authors would also like to acknowledge the dentists who participated in the study, without whom the study would not have been possible.

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CPD questions

To claim CPD points, go to the MEMBERS' SECTION of www.dentist.ie and answer the following questions:

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CPD

1. Under the Minamata Convention on Mercury, from July 1, 2018, dentists are no longer permitted to place amalgam restorations in:

- ○ A: Adults over 65 years old
- ○ B: Children over 16 years old
- ○ C: Deciduous teeth

2. The proportion of dentists who reported having a waste management policy relating to the disposal of waste amalgam was:

- ○ A: 70%
- ○ B: 16%
- ○ C: 93%

3. The two key barriers identified by the study that may have an impact on a total phase-out of dental amalgam in the future are:

- ○ A: Patient experience and time
- ○ B: Training and remuneration
- ○ C: Lack of suitable alternatives and poor guidance

Contemporary management options for molar incisor hypomineralisation

Précis

Management of molar incisor hypomineralisation (MIH) in children is challenging and dentists need to be aware of a wide range of contemporary treatment options.

Abstract

Background: Molar incisor hypomineralisation (MIH) is a well-known and prevalent qualitative enamel defect, which can carry a heavy treatment burden for many patients. Early identification of MIH is paramount in order to instigate preventive regimes and potentially spare children from the restorative cycle many endure. Once enamel breakdown occurs management is challenging, as all cases present different individual considerations, from behaviour management issues to restorative decisions. The aim of this article was to review the recent literature on MIH in order to give the reader an update on contemporary management options for MIH-affected molars and incisors, and their evidence base.

Conclusion: Effective management can be very difficult for the clinician and there are limited treatment guidelines available. The individual needs of the patient will often dictate the most appropriate management and therefore clinicians need to be aware of all available options.

Journal of the Irish Dental Association February/March 2020; 66 (1): 36-43

DEFINITIONS AND KEY POINTS

- Molar incisor hypomineralisation (MIH) is enamel hypomineralisation of systemic origin of one to four first permanent molars (FPMs) and frequently involving the incisors.[1]
- The hypomineralised enamel is soft and porous, can sustain rapid post-eruptive breakdown (PEB) under occlusal forces, and often becomes symptomatic. As a result of these factors, these children are at a significantly high caries risk.

Background

Molar incisor hypomineralisation (MIH) is a well-recognised qualitative defect of enamel affecting one to four first permanent molars (FPMs) and frequently involving the incisors.[1] The condition is common, with an estimated global prevalence of 14.2%.[2] A recent systematic review emphasised the magnitude of the MIH burden, estimating that 878 million people across the world are currently affected, with 17.5 million new cases identified each year.[3] More severe forms of MIH carry with them a heavy treatment burden for many patients, which can negatively impact on a child's quality of life and socio-psychological status.[3] The child is often very young at the time of diagnosis, and it may coincide with their first experience of dentistry. Molars affected by MIH are often hypersensitive and therefore difficult for the child to brush effectively.[4] The hypomineralised enamel is soft and porous, often sustains rapid post-eruptive breakdown (PEB) under occlusal forces, and often becomes symptomatic.[5] As a result of these factors, these children are at a significantly high caries risk.[6] Along with increased treatment needs, children with MIH also

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FIGURE 1: Hypomineralised first permanent molar with post-eruptive breakdown of enamel (tooth 46).

Table 1: Existing MIH management recommendations.

Region	Author, year	Title
Australia	William *et al*., 2006	MIH: review and recommendations for clinical management
USA	Mathu-Muju, 2006	Diagnosis and treatment of MIH
Europe	Lygidakis, 2010a	EAPD Best Clinical Practice Guidance
Europe	Lygidakis, 2010b	Treatment modalities for children affected by MIH: a systematic review
Europe	Elhennawy and Schwendicke, 2016	Managing MIH: a systematic review

experience increased treatment time and the need for retreatments. By the age of nine, children with MIH-affected molars reportedly undergo treatment 10 times more frequently than those with unaffected molars,[7] and this, unsurprisingly, may lead to the development of dental fear and behaviour management issues, which further complicate management.[7] Early identification of MIH is paramount in order to instigate prevention regimes and potentially spare children from the restorative cycle many endure.[4] Once MIH is diagnosed, children should be recalled regularly as part of a high caries risk prevention regime,[8] thus minimising the potential for enamel breakdown. Once breakdown occurs; however, effective management of MIH is difficult, and for the treating dentist basic decision-making with regard to cavity design and material choices can be challenging. The cavities are atypical in shape and location (**Figure 1**), and this can limit the success of conventional approaches.[5] A number of recent studies have examined dentists' knowledge and perception regarding MIH management and reported disparity between clinicians' treatment decisions.[9-11] One study reported that dentists' decisions regarding cavity design and material choices were vastly different even in the same case scenario.[9] The inconsistency between practitioners is no doubt a reflection of the challenging management issues that MIH presents, and many of the studies recommended the provision of continuing education and contemporary treatment guidelines in order to address this.[9-11]

Management

A limited number of MIH management recommendations and guidelines have been proposed (**Table 1**). The most familiar guideline is the Best Clinical Practice Guidance from the European Academy of Paediatric Dentistry (EAPD).[5] This document provides a diagrammatic summary of suggested treatment modalities according to MIH severity and patient age. However, the authors highlight that ideal management is not always possible due to inherent issues with behaviour management; therefore, alternative treatment options may need to be considered.[5] More recently, a systematic review examined the evidence for various MIH treatment options and concluded that there is currently insufficient evidence for strong recommendations.[4] Instead, it was recommended that dentists consider the status of each tooth individually, along with the specific needs of the patient, when deciding how to manage MIH. Sometimes the ideal treatment for the tooth is not the ideal treatment for the patient; as a consequence, dentists who are managing MIH need to be well versed in a range of contemporary treatment options and also need to be aware of the underlying evidence base.

Desensitisation, remineralisation and prevention for MIH

Hypersensitivity is a common complaint in children with MIH and often this is a fundamental issue to address in order for the child to tolerate further treatment.[4] Even intact teeth can be exquisitely sensitive due to the increased innervation in the pulp horn beneath resulting in chronic inflammatory changes.[12] The most commonly used desensitising techniques include casein phosphopeptide-amorphous calcium phosphate (CPP-ACP), fluoride and fissure sealants.

GC Tooth Mousse contains CPP-ACP, a milk-derived protein with bioavailable calcium and phosphate. It works by creating a supersaturated environment of calcium and phosphate on the enamel surface.[13] Tooth mousse is available with or without added fluoride (900ppm), and both have been shown to enhance mineral content and reduce enamel porosity.[14] Currently, there is no evidence to recommend one over the other.[4,15] For incisors, treatment with CPP-ACP for only one month was found to reduce hypersensitivity more than fluoride varnish.[15]

The recommended protocol involves CPP-ACP application either directly to the tooth or using a custom-made medicament tray for two hours per day for a three-month period.[16] This technique is most effective if applied to the tooth as early as possible in the post-eruptive stage, before final enamel maturation takes place and the enamel surface layer becomes highly mineralised.[5] The possibility of 'maturing' hypomineralised molar enamel with CPP-ACP has been found *in vitro*, which is an exciting potential method for managing MIH; however, the recommendation is dependent upon further research.[14] There is anecdotal evidence that it also improves the appearance of the opacities. A clinical study found CPP-ACP to have a positive effect in reducing hypomineralisation *in vivo* in molars after one month of application.[17] Regarding molar sensitivity, another recent study found that the use of tooth mousse significantly reduced sensitivity in molars, when used in a custom tray for two hours a day for three months;[18] however, the sample size was small. While further work is needed to establish the value of CPP-ACP, the possibility of sparing the patient the cycle of repeated restorative interventions is promising.[19,20]

Regarding fluoride varnish (FV), the most commonly used and well-researched topical preparations contain 22,600ppm F (e.g., Profluorid and Duraphat).[21]

FIGURE 2: Hypomineralised teeth 36 and 46 with well-placed GIC fissure sealants. Note the demarcated opacities on the mesial occlusal surfaces with PEB on the mesio-buccal cusp.

While FV may be helpful in combatting sensitivity, there is insufficient evidence relating to its effectiveness on MIH teeth to date, and further work is needed to evaluate its benefit.[4,5] Another option to manage this issue is densensitising toothpastes. One study found that 8% arginine (ProArgin Elmex 1,450ppm F toothpaste) improved sensitivity in molars over an eight-week period;[22] however, the study evaluated a small sample. Despite these promising results, further studies are needed to clarify their efficacy.

Silver diamine fluoride (SDF) has gained recent popularity and is currently licensed as a desensitising agent (e.g., SDI's Riva Star). It reduces the growth of cariogenic bacteria, inhibits demineralisation and promotes remineralisation.[23] It is a non-invasive and cost-effective treatment, is most commonly available in a 38% SDF preparation and, when applied to carious dentine, causes a permanent black discolouration.[24] However, despite the theory that it would help MIH, the authors couldn't find any study relating the two factors. This would be interesting for further research, especially given the recent popularity of SDF.

The use of fissure sealants (FS) in MIH molars is crucial both to manage sensitivity and prevent enamel breakdown.[5] Glass-ionomer cements (GICs) can be used as interim treatments where the molar is partially erupted or the tooth is hypersensitive with a view to placing resin-based FS in the longer term.[5] One study found that GC Fuji Triage had the highest fluoride content compared to a number of available glass-ionomer products,[25] and is ideal for use as an interim FS in a sensitive MIH molar (**Figure 2**). Resin sealants often have unpredictable longevity in hypomineralised teeth due to difficulty with adhesion.[4] However, one study comparing resin sealants on MIH-affected and unaffected molars found similar survival rates on both groups even without bonding, although the sealants were placed under ideal conditions (rubber dam isolation with local anaesthesia).[26] A systematic review concluded that, overall, bonded resin sealants have been shown to have better retention than non-bonded resin sealants in MIH molars.[27] Using a fifth-generation adhesive system has been shown to improve FS retention in one long-term study.[28] It has also been suggested that using flowable composite can increase retention in molars affected by MIH.[29]

There have been suggestions to pre-treat the hypomineralised enamel with sodium hypochlorite (NaOCl) to overcome the irregular etching pattern observed, as pre-treating with NaOCl could theoretically remove the intrinsic protein that interferes with bonding.[30] However, a randomised controlled trial (RCT) on extracted MIH molars found no advantage to using this technique[31] and further research is needed.

FIGURE 3a: Hypomineralised opacities on teeth 11 and 21 before treatment with micorabrasion.

FIGURE 3b: Teeth 11 and 21 after treatment with micorabrasion.

Pain control – how can I manage anaesthesia?

MIH molars can be more difficult to anaesthetise effectively with standard local anaesthetic (LA) agents due to increased innervation density in the pulp and chronic pulpal inflammation.[32] It is important to remember that traditional signs of effective anaesthesia, such as numbness of the soft tissues, may not actually equate to effective pulpal anaesthesia in MIH molars.[33] Some authors have advocated the use of the electric pulp tester to additionally verify anaesthesia of a tooth prior to commencing treatment.[33]

Different choices of anaesthetic are available (i.e., 2% lidocaine, 3% mepivacaine, and 4% articaine). There are very few studies examining the efficacy of local anaesthesia specifically in MIH teeth and further research is needed in this area. A systematic review suggested that while dentists may be tempted to increase the dose of anaesthetic to compensate for a hypersensitive tooth, the type and dose of anaesthetic are not as important as the adjunctive techniques used to achieve anaesthesia.[33] One study recommended that accompanying a lidocaine inferior alveolar nerve block with a supplementary buccal infiltration with 4% articaine was more likely to allow pain-free treatment in lower molars with irreversible pulpitis.[34] While this study didn't examine molars with MIH specifically, the findings could be extrapolated for MIH molars, which may also demonstrate pulpal inflammation. It is important to be mindful of dose limits in paediatric patients for all anaesthetic agents, but especially when using articaine 4%.[34]

The use of periodontal ligament (PDL) injections has been suggested as an adjunct to block or infiltration anaesthesia.[33] However, it must be used with caution in an already compromised tooth as it has been suggested that the

FIGURE 4a: Hypomineralised opacities on teeth 11 and 21 before treatment. Note the demarcated enamel opacities (white/yellow and brown areas).

FIGURE 4b: Teeth 11 and 21 post treatment with a combination of microabrasion and composite resin.

force of injection in combination with the vasoconstrictor may further compromise the condition of an already inflamed hypomineralised molar pulp.[12,33] More recently, there has been focus on the use of intra-osseous injections in MIH, and some authors have reported significant improvements in anaesthesia.[33,35,36] However, despite these promising results, these anaesthetic techniques have not been widely adopted in general practice. The use of pre-emptive analgesia (using ibuprofen) has also been suggested to alleviate pain during treatment and increase the effectiveness of local anaesthetics.[33] While theoretically anti-inflammatories could reduce symptoms of chronic inflammation, there is no evidence for the efficacy of pre-emptive analgesia in MIH. Finally, nitrous oxide inhalational sedation is a popular and effective adjunct to LA to combat hypersensitivity in children with MIH.[37]

Managing incisors

Hypomineralised incisor opacities can range in colour from white to creamy/yellow or brown, the colour a reflection of hypomineralisation severity.[38] Defects usually present on the buccal surfaces, and PEB is unusual but not impossible. Timing of any intervention depends on the individual's aesthetic complaint, which should preferably come from the child themselves rather than the parent. Any treatment other than remineralisation should ideally be delayed until the defect is fully erupted in the mouth, as mineral content can improve after eruption into the oral environment,[39] and therefore the enamel opacities can be less profound in the long term.[40] When managing incisor opacities, a conservative treatment approach is essential, especially in a young tooth with immature root formation and a large pulp.[5] Recommended minimally invasive treatment techniques, which can be used alone or in combination, include CPP-ACP (tooth mousse), enamel microabrasion, the etch bleach seal technique, and resin infiltration.[5,15] Improvement of the visible incisor opacities in MIH using these simple, minimally invasive techniques is possible, and has been shown to have a positive impact on children's well-being.[41]

Aesthetic improvement of incisor defects using enamel microabrasion has been recommended.[4,5] Microabrasion involves the use of hydrochloric acid (HCl) in an abrasive paste, which is applied to the enamel surface in conjunction with mechanical pressure under rubber dam isolation. The procedure is repeated a number of times for 5-10 seconds with pressure and intermittent washing, removing 100-200 microns of enamel depending on the pressure used (**Figures 3a** and **3b**).[42] This action changes the visual properties of the enamel surface by forming a dense, prismless surface layer, and changes the optical properties of the surface.[42] Different concentrations of HCl are commercially available in microabrasion kits (6.6% [Opalustre; Optident], or 18% [PREMA; Premier Dental]) but 37% phosphoric acid has also been used for this technique.[37] A recent split mouth RCT comparing microabrasion using either 18% HCl or 37% phosphoric acid found a 97% reduction in opacities using either solutions.[43] Another study that examined incisor opacities of various origins found a stable improvement in 66% of teeth using 18% HCl;[42] however, microabrasion was less likely to work with full thickness defects,[42] as is often the case with darker yellow/brown-coloured MIH opacities.[5] Nonetheless, even if the defect is not completely resolved using microabrasion, it may provide some improvement, which can then be more easily masked with composite resin (**Figures 4a** and **4b**).

Another minimally invasive technique is the etch-bleach-seal technique, originally described by Wright in 2002, who reported good results for removing stained yellow-brown defects in incisors.[44] This technique involves etching the enamel surface with 37% phosphoric acid followed by application of 5% NaOCl for 5-10 minutes, re-etching and application of a clear fissure sealant over the surface.[5] More recently, resin infiltration techniques such as Icon (DMG) have been described but, according to a systematic review, further evidence is required before they can be recommended.[45] Composite resin is the material of choice for large defects that have exposed dentine with overall minimal enamel reduction.[5] Enamel bleaching is not recommended for incisors in adolescents, as it may induce hypersensitivity and mucosal irritation.[5,40] Other, more invasive treatment options should be delayed until the patient is older and eruption complete with mature gingival architecture.

Managing molars

In sound teeth, mineral density increases from the cemento-enamel junction (CEJ) to the cusp/incisal tip, while in MIH teeth mineral density drops from the CEJ to the occlusal surface.[42,46] MIH molars experience hypomineralised defects of varying severity that follow the natural incremental lines of enamel formation. The degree of discolouration is a reflection of the severity of the mineral deficit,[38] and it has been suggested that the higher the protein content, the higher the risk for PEB to occur.[47]

Restoration of MIH molars poses significant challenges due to the poor mechanical and physical properties of the affected enamel. GIC or resin-modified GIC (RMGIC) restorations may be considered only as an intermediate approach until a definitive restoration is placed due to their mechanical properties.[4,48] Amalgam should be avoided in MIH molars as it is non adhesive and, due to the atypically shaped cavities, breakdown can occur at the

FIGURE 5a: Hypomineralised first permanent molar (tooth 16) with caries and PEB. Note the enamel opacities surrounding the margins of the defect.

FIGURE 5b: Tooth 16 temporised with a GIC restoration prior to SSC placement. An orthodontic separator is placed mesial to 16 for one week to gain space and allow for a more conservative proximal reduction for the SSC.

FIGURE 5c: Tooth 16 after treatment with a stainless steel crown in place.

margins.[4] One study found that only 38% of amalgams were acceptable in MIH molars after four years compared to 75% of composites.[49] When intracoronal restorations are indicated, composite resin appears to be the most favourable.[4,37] It is the material of choice for one to two surface defects with supragingival margins.[37] However, they are highly technique sensitive and bonding of the hypomineralised enamel can be challenging.[4,50] Lygidakis (2003) reported that composite was 100% successful for two and three surface defects in severe MIH molars after four years.[51] Mejare (2005) also reported high success rates for composites in MIH (85%).[52]

A potential adjunct to improve bonding is pretreating the enamel with 5% NaOCl as mentioned previously; however, further research is needed.[50] Bonding with self-etching primer adhesives was previously recommended,[37] but recent evidence suggests that it does not offer superior bonding over total etch systems.[50,53]

Regarding intracoronal cavity design for composite resin, two main but controversial approaches have been suggested: removal of all defective enamel; or, removal of porous enamel only.[5,37] A study comparing both approaches found that failure of the restoration was higher in the group with residual hypomineralised enamel.[54] Overall, the current recommendation is to extend cavity preparations onto sound enamel (i.e., not porous, independent of tooth discolouration) since bonding to MIH enamel has not produced a steady solution to date.[37,40,50] This is an area that warrants further research, as studies that examine dentists' management of MIH show most disparity regarding cavity design.[9]

When MIH molars are severely broken down or hypersensitive, full-coverage restorations are often indicated. Preformed stainless steel crowns (SSCs) are indicated by the American Academy of Pediatric Dentistry for developmental defects or when failure of other available restorative materials is likely.[37,55] The advantages of SSCs include their durability, low cost, and the fact that they are easy to place.[37] They also prevent further breakdowns of the tooth and control sensitivity.[37] However, it is important that the patient and parent are informed about the long-term financial implications of crown placement. Although there is little data on long-term follow-up, two studies reported notable success using SSCs for MIH molars.[4] Kotsanos (2005) reported that 100% of SSCs in MIH teeth were acceptable after four years.[49] Zagdwon (2003) also found that SSCs for severely affected MIH molars had a high success rate.[56] In severe MIH, SSCs may be more cost-effective, quicker to place, and less technique sensitive than intracoronal restorations (**Figures 5a**, **5b** and **5c**).[4] Unfortunately, SSCs are still greatly underused by many general practitioners and continuing education courses are recommended in order to address this. Indirect restorations such as cast crowns or onlays for MIH molars could be used,[52,56] but they are seldom indicated in young children.[4,37]

Extraction of MIH molars

MIH teeth are commonly found to need repeated restorations, which results in further tooth structure loss.[54] For some MIH teeth, the burden of treatment is high, especially when the breakdown is advanced, and these teeth are especially challenging to treat. Very often the clinician is faced with the difficult decision to extract or try to restore a severely broken down MIH-affected FPM. There are conflicting opinions about the benefit of extracting FPMs since it is the most invasive treatment option. Advantages include elimination of the long-term restorative burden and less chance of impaction of the third molars.[57] The main disadvantage is the high need for general anaesthesia and the risk of residual spacing necessitating orthodontic management.[57,58] Despite this, it has been suggested as a good treatment option for severely affected MIH molars, if correct planning is performed, resulting in the best long-term result for the patient.[57] A very recent paper describes a useful clinical protocol for management of FPMs, including a step-by-step guide for decision-making for interceptive extractions.[59] It is important to note that when planning for interceptive extractions, the authors assume that the FPM is asymptomatic or

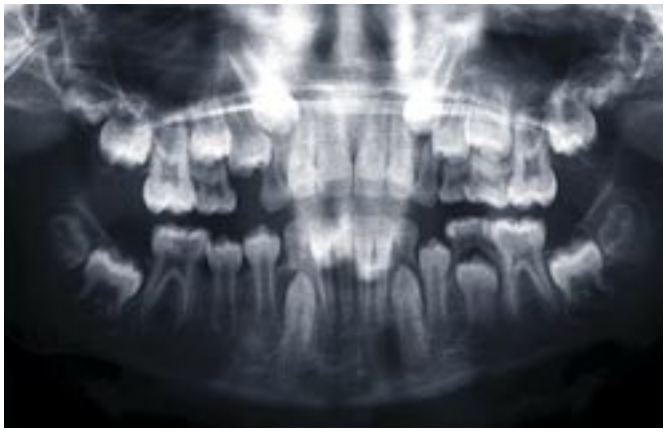

FIGURE 6: Panoramic radiograph of a patient with MIH showing extensive defects in teeth 36 and 46 occlusally. This OPG demonstrates some features that indicate the 'ideal timing' for extraction of a FPM: the bifurcation of the second molars are developing and the third molars are present.

has been stabilised.[59] Overall, the vast majority of FPMs are extracted due to caries, while extraction due to MIH accounts for only 11% of the total loss.[60] FPMs are very rarely the teeth of choice for extraction for orthodontic reasons; thus, this makes the decision on removal more difficult. The Faculty of Dental Surgery of the Royal College of Surgeons of England guidelines provide advice for extraction of FPMs of poor long-term prognosis depending on the classification of occlusion.[58] Variables surrounding the decision to extract include the severity of the MIH, the restorability of the tooth, the occlusal relationship and the dental age of the patient. The ideal time to extract the FPM is a chronological age range of 8-10 years, after the lateral incisors have erupted but before eruption of the second permanent molar, as this results in the most favourable mesial movement and space closure of the second permanent molar.[58] Earlier extractions are not recommended as the second permanent premolar may drift distally. Furthermore, late extractions are also problematic as they often result in severe mesial tipping of the second permanent molar.[57,58] Ideal timing also corresponds to a number of radiographic features (**Figure 6**). The second permanent molar should be angled mesially in relation to the FPM, and the bifurcation should show evidence of calcification.[58] The second premolar should be engaged in the bifurcation of the second primary molar and the third molar should be present.[58,61] Very often though, decisions regarding FPM extractions have to be made before presence of the third molar can be confirmed radiographically, as calcification typically only begins at age eight.[58] Some authors suggest that by age nine clinicians can usually make a decision regarding third molar presence if dental development is otherwise normal.[59] They caution about not waiting so long that the second molar erupts, as there is no benefit to an interceptive strategy once the second molar is in occlusion.[59]

It has been found that extraction of severely affected molars, with the above considerations, can result in favourable space closure by the second permanent molar in 66-87% of cases.[52,57,58] Successful space closure can even occur if FPMs are extracted after the ideal age, once the second permanent molar is still unerupted, in particular for maxillary molars.[52,57,62] However, it is important to note that there is a significant difference between upper and lower extractions. For upper extractions, 92% resulted in good space closure as opposed to only 66% of lower first molars displaying favourable results despite extraction at a perceived ideal time.[62] Compensating extractions are recommended when removing the lower FPM to avoid overeruption of the upper FPM, but the reverse is not recommended. Balancing extractions of FPMs is not recommended at all.[58] It is also not advised to remove a healthy premolar for orthodontic proposes if the molar in the same quadrant is heavily restored.[58] When deciding to extract, it is crucial that the dentist seeks an opinion from an orthodontic specialist.[30] There is a need for high-quality prospective studies on loss of FPMs to further evaluate the efficacy of extraction as a treatment option for MIH.

There are financial implications in deciding to remove a severely affected molar or to place complex restorations that require replacement over their lifespan.[63] One study found that extraction of FPMs with severe MIH has been shown to be the most cost-effective treatment option provided the extraction is carried out at the ideal time, thereby reducing the need for orthodontic treatment.[63] However, if the ideal timing has passed (i.e., after eruption of the second permanent molar), restoration with composite resin was the least costly option, especially for a single molar.[63] It should be mentioned that these results apply to a German healthcare system and may not be applicable to an Irish structure.

Conclusion

MIH is undoubtedly a significant dental public health concern worldwide given its global prevalence, and many dental practitioners will be all too familiar with its presentation and the unique challenges that it brings. Management can be difficult as all cases present different individual considerations, from behaviour management issues to restorative decisions. The clinician needs to be well versed in the range of treatment options available in order to provide optimal care for children with MIH. It would be interesting to gain insight into the perception and management of MIH among Irish dentists, and this is a recommended area of further research.

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CPD questions

To claim CPD points, go to the MEMBERS' SECTION of www.dentist.ie and answer the following questions:

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CPD

1. What is the estimated global prevalence of MIH?

- ○ A: 5.2%
- ○ B: 14.2%
- ○ C: 22.5%

2. Microabrasion is:

- ○ A: the use of phosphoric acid or hydrochloric acid in an abrasive paste, which is applied to the enamel surface in conjunction with mechanical pressure
- ○ B: the use of phosphoric acid or hydrofluoric acid in an abrasive paste, which is applied to the enamel surface in conjunction with mechanical pressure
- ○ C: the use of hydrofluoric acid or hydrochloric acid in an abrasive paste, which is applied to the enamel surface in conjunction with mechanical pressure

3. Extraction of a first permanent MIH molar at the ideal time for optimal space closure by the second molars is more predictable in the lower arch.

- ○ A: True
- ○ B: False

Maturation of the oral microbiome in caries-free toddlers: a longitudinal study

Kahharova, D., Brandt, B.W., Buijs, M.J., Peters, M., Jackson, R., Eckert, G., et al.

Understanding the development of the oral microbiota in healthy children is of great importance to oral and general health. However, limited data exist on a healthy maturation of the oral microbial ecosystem in children. Moreover, the data are biased by mislabelling 'caries-free' populations. Therefore, we aimed to characterise the healthy salivary and dental plaque microbiome in young children. Caries-free (ICDAS [International Caries Detection and Assessment System] score 0) children (n = 119) and their primary caregivers were followed from one until four years of child age. Salivary and dental plaque samples were collected from the children at three time points (T1, ~1 year old; T2, ~2.5 years old; and, T3, ~4 years old). Only saliva samples were collected from the caregivers. Bacterial V4 16S ribosomal DNA amplicons were sequenced using Illumina MiSeq. The reads were denoised and mapped to the zero-radius operational taxonomic units (zOTUs). Taxonomy was assigned using HOMD. The microbial profiles of children showed significant differences (P = 0.0001) over time. Various taxa increased, including *Fusobacterium*, *Actinomyces*, and *Corynebacterium*, while others showed significant decreases (e.g., *Alloprevotella* and *Capnocytophaga*) in their relative abundances over time. Microbial diversity and child-caregiver similarity increased most between one and 2.5 years of age, while still not reaching the complexity of the caregivers at four years of age. The microbiome at one year of age differed the most from those at later time points. A single zOTU (*Streptococcus*) was present in all samples (n = 925) of the study. A large variation in the proportion of shared zOTUs was observed within an individual child over time (2% to 42% of zOTUs in saliva; 2.5% to 38% in dental plaque). These findings indicate that the oral ecosystem of caries-free toddlers is highly heterogeneous and dynamic with substantial changes in microbial composition over time and only few taxa persisting across the three years of the study. The salivary microbiome of four-year-old children is still distinct from that of their caregivers.

Journal of Dental Research 2019: 1-9 DOI: 10.1177/0022034519889015 journals.sagepub.com/home/jdr

The spectrum of histological findings in oral biopsies

Ahern, J., Toner, M., Regan, E.O., Nunn, J.

Aim: To undertake a retrospective analysis of the use of a diagnostic pathology service, to determine the source of oral biopsies submitted for histological analysis, and to examine the range and frequencies of histologically diagnosed oral lesions in an Irish population.
Methods: A retrospective analysis was carried out on all oral biopsies submitted for histological analysis to an oral and maxillofacial diagnostic pathology service from June to December 2015.
Results: In total 724 oral biopsies were submitted. The majority of diagnoses were benign (80.3%) and the remaining diagnoses were made up of malignancies (6.7%) and potentially malignant disorders (PMDs), histologically characterised by epithelial dysplasia (13%). Less than 1% of biopsies were submitted from general dentists in primary care.
Conclusion: This study showed that oral biopsies are not submitted from the primary care setting, but rather from hospital-based specialist units or referral-based specialist practitioners. There was a broad range of histological diagnoses, the majority of which were benign.

Irish Medical Journal 2019; 112 (10): 1017

Improving polymethyl methacrylate resin using a novel titanium dioxide coating

Darwish, G., Huang, S., Knoernschild, K., Sukotjo, C., Campbell, S., Bishal, A.K., et al.

Purpose: The objective of this study was to improve the surface characteristics of poly (methyl methacrylate) (PMMA) by developing a novel, thin film coating process and to characterise the resulting coated surface.
Materials and methods: An atomic layer deposition (ALD) technique was developed to deposit a titanium dioxide (TiO_2) nano-thin film on PMMA. The surface wettability for both coated and uncoated PMMA was determined by measuring water contact angle. Wear resistance was assessed using a mechanical tooth-brushing device with a 50g load for 6,000 strokes after five months of water storage. A denture cleanser challenge test was performed by using

sonication in 3.8% sodium perborate for one hour with aged specimens. X-ray photoelectron spectroscopy (XPS) was used before and after the brushing test and challenge test to analyse the PMMA surface chemical composition. The mechanical strength of coated and uncoated PMMA was measured using a three-point bending test. Surface microbial interactions were also evaluated by assessing *Candida albicans* biofilm attachment.

Results: Nano-TiO_2 coating (30nm thick) was successfully deposited on PMMA at 65°C. After coating, water contact angle decreased from 70° to less than 5°. After brushing test, the coating remained intact. XPS analysis revealed no loss of TiO_2 from coated specimens following brushing and denture cleanser sonication for one hour. There was no statistically significant difference in mechanical strength (MPa) (mean ± SD) between PMMA (139.4 ± 11.3) and TiO_2-PMMA (160.7 ± 37.1) ($p = 0.0995$). *C. albicans* attachment decreased by 63% to 77% on the coated PMMA surface.

Conclusions: ALD is a promising technique to modify surface properties of PMMA and resulted in a stable, adherent, thin film. By depositing a TiO_2 coating, PMMA surface properties may lead to significantly reduced microorganism adhesion and easier pathogen removal from PMMA. For patients who wear dentures, reducing the oral microbial biofilm burden using a TiO_2-coated PMMA surface could positively impact their oral and systemic health.

Journal of Prosthodontics 2019; 28 (9): 1011-1017

Child caries management: a randomised controlled trial in dental practice

Innes, N.P., Clarkson, J.E., Douglas, G.V.A., Ryan, V., Wilson, N., Homer, T., et al.

This multicentre, three-arm, parallel-group, patient-randomised controlled trial compared the clinical effectiveness of three treatment strategies over three years for managing dental caries in primary teeth in UK primary dental care. Participants aged three to seven years with at least one primary molar with dentinal carious lesion were randomised across three arms (1:1:1 via centrally administered system with variable-length random permuted blocks): C+P, conventional carious lesion management (complete carious tooth tissue removal and restoration placement) with prevention; B+P, biological management (sealing in carious tooth tissue restoratively) with prevention; and, PA, prevention alone (diet, plaque removal, fluorides, and fissure sealants). Parents, children, and dentists were not blind to allocated arm. Co-primary outcomes were: 1) the proportion of participants with at least one episode of dental pain and/or infection; and, 2) the number of episodes of dental pain and/or infection during follow-up (minimum, 23 months). In sum, 1,144 participants were randomised (C+P, n = 386; B+P, n = 381; PA, n = 377) by 72 general dental practitioners, of whom 1,058 (C+P, n = 352; B+P, n = 352; PA, n = 354) attended at least one study visit and were included in the primary analysis. The median follow-up was 33.8 months (interquartile range, 23.8 to 36.7). Proportions of participants with at least one episode of dental pain and/or infection were as follows: C+P, 42%; B+P, 40%; PA, 45%. There was no evidence of a difference in incidence of dental pain and/or infection when B+P (adjusted risk difference [97.5% CI]: –2% [–10% to 6%]), or PA (4% [–4% to 12%]) was compared with C+P. The mean (SD) number of episodes of dental pain and/or infection were as follows: C+P, 0.62 (0.95); B+P, 0.58 (0.87); and, PA, 0.72 (0.98). Superiority could not be concluded for number of episodes between B+P (adjusted incident rate ratio (97.5% CI): 0.95 [0.75 to 1.21]), or PA (1.18 [0.94 to 1.48]) and C+P. In conclusion, there was no evidence of a difference among the three treatment approaches for incidence or number of episodes of dental pain and/or infection experienced by these participants with high caries risk and established disease (trial registration: ISRCTN77044005).

Journal of Dental Research 2019: 99 (1): 36-43

FIGURE 2: Finger/thumb guard.

FIGURE 3: Wearing a cotton glove to bed at night can act as a barrier.

FIGURE 4: Intraoral device with fixed palatal crib.

Quiz answers

(questions on page 12)

1. The patient has an anterior open bite as a result of a digit sucking habit. Patients with digit sucking habits often present with:
   - proclined anterior maxillary teeth;
   - retroclined anterior mandibular teeth;
   - a high vaulted palate; and,
   - an anterior open bite.
2. There are many *aides memoire* available to assist with habit cessation:
   - finger/thumb guard (**Figure 2**);
   - wearing a cotton glove to bed at night to act as a barrier (**Figure 3**);
   - nail polish with poor taste; or,
   - an intraoral device with fixed palatal crib (**Figure 4**).

The patient's guardian must be informed of the need to cease the digit sucking habit as soon as possible. If the habit is stopped prior to eight years old, the maxillary incisors should have enough eruptive potential to spontaneously resolve the open bite. If the habit continues past the age of eight years, the likelihood for requiring active orthodontic treatment to correct the open bite greatly increases.

SITUATIONS WANTED

Very experienced, hardworking associate looking to return to Cork. Open to locum, part-time and full-time work (flexible). Available January 2020. Enquiries to associate2020ck@gmail.com.

Very experienced (13+ years), reliable and hardworking associate available for sessions or part-time work in Dublin and neighbouring counties. Enquiries to associatedentist1a@gmail.com.

Experienced (15 years) general dental surgeon with special interest in endo/prostho looking for part-time job in Co. Dublin/Meath/Kildare/Wicklow. CV and cover letter upon request. Enquiries to gendentalsurgeon@gmail.com.

Experienced dental surgeon who works part-time available on Thursdays and Fridays for sessions in the greater Dublin area. Contact Thornfield6@hotmail.com.

Locum available Munster area, 30+ years experience both private practice and HSE. IDA member, MPS indemnified. Holiday/maternity/occasional cover, on sessional basis. Email grainne43@gmail.com.

SITUATIONS VACANT

Associates

Dynamic, experienced associate required for busy practice in South Dublin. Three to four days per week with strong earning potential. Modern practice with excellent support team, including specialist orthodontist. Taking over strong private book from departing colleague. Start February 2020. Applications to careers@dentalcareireland.ie.

Cork City suburb – part-time associate for two sessions per week (Monday and Friday) with the potential for more. Fully computerised; friendly and supportive staff. Email CV to douglasdental.job@gmail.com.

Private and PRSI-only practice, excellent remuneration, in Navan, Co. Meath, one hour from Dublin, requires associate four days a week initially, replacing departing colleague. Long-established, busy, friendly atmosphere, excellent support staff, hygienist, computerised, OPG. Applications to: deirdreodwyer4@me.com.

Experienced, progressive and dynamic associate required for modern, expanding, high-earning and long-established practice. Full book. Great location, 50 minutes from Dublin. Excellent staff. Fully computerised. Apply by emailing CV to info@goreydentalpractice.ie.

Exciting opportunity for associate in gorgeous new, modern practice south Co. Dublin. Flexible days/hours. Private/PRSI. Hundreds of patients pre-registered and waiting. Suit experienced or early in career. IOC digital x-ray, etc. Email hello@stepasidedental.ie.

Associate dental surgeon required for dental practice in Donegal. Full/part-time, experience desirable. PRSI and private work with potential for significant private income from endo and crown work. Email CV to dentaljob2020@gmail.com.

Part-time associate required for one day per week (with a view to expanding in future) in a friendly general dental practice in Dublin 5. Send your CV and cover letter to rahenydentalcentre@outlook.com. Must have IDC registration.

Dynamic, experienced associate required for busy practice in south Dublin. Full-time role with very strong earning potential. Modern practice with excellent support team including specialist orthodontist. Taking over a very strong private book. February 2020 start. Applications to careers@dentalcareireland.ie.

Associate required in established private only (no GMS) practice in Kilkenny/Carlow. Multidisciplinary team including orthodontist, hygienist, implantologist, oral surgeon, endodontist. Excellent backroom support. Cerec, in-house laboratory, digital scanner, CBCT. Suit experienced colleague. Please send CV to bpm.gmedical@gmail.com.

Full/part-time associate required for very busy, large, modern south Dublin practice. Must have experience with fixed braces/Invisalign. Email CV to southdublindentalclinic@gmail.com.

Modern, busy, expanding multi-surgery practice in north east, 50 minutes from Dublin, seeks enthusiastic associate for 12-month maternity cover. Three days/week. Potential for future permanent position. Fully computerised. Digital x-rays. CVs to dentistnortheast01@gmail.com.

Experienced associate required for recently refurbished, modern, long-established, multi-chair, busy practice, 45 minutes from Galway, one hour from Dublin. Very generous remuneration. Email dentalreceptionbd@gmail.com.

East Cork suburb. Associate required to cover leave January 2020, with a view to adding time. Well-established and friendly practice with good support team. Email cmgdental@gmail.com.

Experienced associate required for part-time position at high-end multi-surgery private-only general/specialist clinic, 40 minutes from Dublin. Two to three days (negotiable). Generous terms for the right candidate. Applications to kellsdentaljob@gmail.com.

Experienced associate required for busy practice in Tullamore, Co. Offaly. Part-time and flexible options considered. Modern, computerised practice with excellent support staff. Strong book with a mix of private and public patients. Applications to careers@dentalcareireland.ie.

Advertisements will only be accepted in writing via fax (01-295 0092), letter or email (liz@irishdentalassoc.ie). Non-members must pre-pay for advertisements, which must arrive no later than **Friday, March 13, 2020**. Classified ads placed in the *Journal* are also published on our website www.dentist.ie for 12 weeks. **Please note that all adverts are subject to VAT at 23%.**

Advert size	Members	Non-members
up to 25 words	€80	€160
26 to 40 words	€95	€190

The maximum number of words for classified ads is 40.
If the advert exceeds 40 words, then please contact:
Think Media, The Malthouse, 537 North Circular Road, Dublin 1.
Tel: 01-856 1166 Fax: 01-856 1169 Email: paul@thinkmedia.ie

Please note that all classified adverts MUST come under one of the following headings:

- Positions Wanted
- Positions Vacant
- Practices for Sale/To Let
- Practices Wanted
- Equipment for Sale/To Let

Classified adverts must not be of a commercial nature. Commercial adverts can be arranged by contacting Paul O'Grady at Think Media.

Dental practice in Dublin 3 looking for associate dentist full/part-time. Must be IDC registered and available for an immediate start. Applications to northdublinclinic1@gmail.com.

Enthusiastic, energetic associate wanted to join a bright, modern practice, Ballinrobe Dental, 40 minutes from Galway (part-time). This would be a great opportunity for a recent graduate looking to build experience in general practice. See www.ballinrobedental.ie. Applications to obeirne1@hotmail.com.

Experienced associate required for busy practice in Meath. Full-time and part-time options considered. Modern computerised practice with excellent support staff. Located 30 minutes' drive from M50. Strong established book and lots of new patients. Applications to careers@dentalcareireland.ie.

Part-time associate required for Dublin city centre general practice. Monday and Thursday afternoon sessions to begin, with possibility of more days. Experience required. Please email CV to marycreddy@gmail.com.

Experienced associate required for busy practice in Limerick City to cover maternity leave, with a possible view to full-time employment. Fully qualified support staff, established book and excellent equipment. CVs and enquiries to bowedentalclinicjobs@gmail.com.

Greater Dublin: experienced, full-time associate for a high-profile, very busy practice. Supportive, progressive environment. Excellently equipped, superb support staff. Oral surgery experience crucial. Good long-term prospects for suitable candidate. Own transport a necessity. Email niall@innovativedental.com.

Part-time dental associate required in the south east, for a busy practice, to replace departing dentist. Excellent remuneration. Immediate start. Email bmmoleary@gmail.com.

Dublin associate required three days, busy, beautiful family practice with modern equipment. Orthodontist on site. Would suit someone with interest in Botox/fillers. Great support staff. Email info@dublinorthodontist.ie.

Experienced part-time (two/three days) associate required to join well-established practice with excellent facilities and support staff. We are based in Barna, four miles from Galway City. CVs and enquiries to barnadentalpractice@gmail.com.

Associate required for a leading, innovative dental practice in Dublin 4 to join our multidisciplinary team. On-site CEREC. Five years experience plus experience in digital dentistry preferred. Apply with cover letter and CV to office@pembrokedentist.ie.

Seeking a motivated, caring dental associate for a part-time position including Saturdays for our Dublin 12 clinic. Experience in endodontics and basic prosthodontics preferred. Email CV to info@cleardentalcare.ie.

Busy practice in the Midlands looking for an associate dentist. Part-time to start with a view to full-time. Well-established practice with a dental hygienist and laboratory. Ideal opportunity to relocate to the Midlands. Email woodiedentalsurgery@gmail.com.

Dental associate wanted for multi-award winning, modern west Cork practice. Guaranteed full book with excellent remuneration and great support staff. Flexible work hours and relocation package available for the right candidate. Email claire@bantrydental.ie.

Experienced associate required for Dundrum practice, part-time initially (Mondays) with opportunity to increase. Busy, long-established practice, fully computerised (SOE), digital x-ray and hygienist. Excellent remuneration. Please reply to dr.moroney@dentalclinic.ie.

Dentists

Dentist required one day/week (Friday) in busy practice in Tipperary. Immediate start available. Also locum required to cover maternity leave – Monday and Tuesday from April 20, 2020, for six months. Reply with CV to dentalpost1@gmail.com.

Waterford – Smiles Dental (part of Bupa Dental Care) is looking for a passionate dentist to join our state-of-the-art, well-established practice in Waterford. Position offers established book and five days per week. Applications to joanne.bonfield@smiles.co.uk.

South Co. Dublin. Experienced dentist initially wanted for two days per week (Wednesday and Friday) for busy practice. Friendly atmosphere, great support staff, fully computerised. Applications to dentalassoc993@gmail.com.

Limerick City: Shields Dental seeks a full/part-time experienced colleague to join our exciting team. A wonderful opportunity in a growing private practice. Special interests welcome. CVs to jobs@shieldsdentalclinic.ie or phone Conor at 085-751 1529.

Exciting opportunities for enthusiastic, self-motivated and experienced dentists in Dublin 1 and 8 areas. Full/part-time positions available. Position would also suit dentist with an interest in orthodontics. Modern, well-equipped practices, fully computerised. Email diamondsmilejobs@gmail.com.

Dentist – Galway – Smiles Dental (part of Bupa Dental Care) is looking for a passionate dentist to join our well-established, state-of-the-art practice in Galway. Five days per week, established list and great earning potential. Email joanne.bonfield@smiles.co.uk.

Dentist – Galway – Quay Dental (part of Smiles Dental) is looking for a passionate dentist with experience in endo to join our private, state-of-the-art, well-established practice in Galway. Practice offers three days per week. Email joanne.bonfield@smiles.co.uk.

Experienced dentist required for part-time role in Buncrana. Busy, expanding practice in beautiful area. Would suit a dentist with long-term possible view. Supportive service by oral surgeon and orthodontist available. Two to three days per week. Please send your CV to crana.dental18@outlook.com.

Dentist – Clonshaugh, Dublin. Smiles Dental (part of Bupa Dental) is looking for a passionate dentist to join our well-established, state-of-the-art practice in Dublin. Five days per week, established list and great earning potential. Email joanne.bonfield@smiles.co.uk.

Dentist wanted for afternoon/evening Wednesday session, with view to more days. South Dublin private practice, excellent facilities and support staff. Experience preferable. Applications to mayberrydentalcare@gmail.com.

Dublin City Centre: experienced, ambitious dentist required. Full-time, well-established, modern, three-surgery practice. Excellent facilities, support staff, well equipped. Very busy, integral hygienist service. Orthodontic experience crucial. Working visa must be in place. Contact niall@innovativedental.ie.

Cork – Smiles Dental (part of Bupa Dental Care) is looking for a passionate dentist to join our state-of-the-art, well-established practice in Cork. Position offers established book two to three days per week. Applications to joanne.bonfield@smiles.co.uk.

Midwest. Very busy, multi-chair, modern practice looking for a dentist to replace departing colleague. High turnover, low cost of living, full book. Enquiries to midwestassociate1@gmail.com.

Experienced dentist required for new general practice in north Dublin. Modern practice, close to all transport routes. Full/part-time positions considered.

This offers an excellent opportunity for the right person to build a list for long-term success. Email 1989dentalsurgeon@gmail.com.

Enthusiastic dentist wanted. Like working on patients who want comprehensive care? Are you committed to ongoing training? Are you an enthusiastic and caring dentist? Want to work in a modern, well-equipped clinic? Talk to us today. Email ed@seapointclinic.ie.

We are looking for an experienced dentist for well-established, busy, two-surgery, modern practice in Dublin. Must be IDC registered. Applications to northdublinclinic1@gmail.com.

Specialist/limited practice

Unique opportunity for a prosthodontist to take over an existing book of patients and referral base in a state-of-the-art, multidisciplinary, digital practice with in-house laboratory in Dublin. Enquires to hiringcontactemail@gmail.com.

Limerick City: Shields Dental seeks a full/part-time prosthodontist to care for full list of patients with advanced restorative needs. Excellent opportunity to work with a full specialist team. Contact jobs@shieldsdentalclinic.ie or phone Conor at 085-751 1529.

Unique opportunity for a periodontist to join a state-of-the-art, multidisciplinary, digital practice with an existing book of patients and referral base in Dublin. Enquires to hiringcontactemail@gmail.com.

Specialist orthodontist required for busy, north east four-dentist practice. Send CV to mbcar06@gmail.com.

Full/part-time specialist orthodontist required for very busy, large, modern south Dublin practice. Choice of hours and days. Email CV to southdublindentalclinic@gmail.com.

Specialist orthodontists – we are looking for specialist orthodontists to join our well-established practices in Dublin and Galway. Flexible options. Practices offer modern, state-of-the-art working environment, full support team with great referral bases. Applications to careers@dentalcareireland.ie.

We are currently seeking a full/part-time orthodontist to join our well-established orthodontic practice in the Leinster region of Ireland. Forward CV in strictest confidence to info@mycareers.ie.

We are currently seeking a part-time (hours/days flexible) orthodontist to join our well-established orthodontic practice in south Dublin. Please forward CV to southdublinorthodontist@gmail.com.

Registered orthodontist wanted for busy, modern, established specialist orthodontic practice in south Dublin adjacent to town centre, schools, public transport. Excellent referral base and support team. Good remuneration, flexible hours and option to transition the practice. Emails to defangle@gmail.com.

Expressions of interest invited from registered specialist orthodontist to join well-established orthodontic practice, Dublin area, with view to eventually taking over practice. For further information please contact dublinorthodental@yahoo.com.

Visiting specialist orthodontist required to serve demand from two dental clinics in south Dublin City. To replace departing colleague. No transfer cases. Favourable terms. Email CV to info@cleardentalcare.ie.

Endodontist required for multidisciplinary specialist practice in Ballsbridge, Dublin 4. Microscope on site. Full transfer of endo book, as position is to replace a departing colleague. Please email or call for more information: careers@dentalcareireland.ie, or 01-853 2504.

Part-time endodontist wanted in Dublin for modern, well-equipped practice. Also suit dentist specialising in endodontics. Please apply with CV to info@novadent.ie.

Specialist oral surgeon required for days in Co. Meath/north Dublin. Flexible options. Practice offers modern, state-of-the-art working environment, full support team with great referral bases. Email careers@dentalcareireland.ie.

Locums

Multi-surgery practice in Ballincollig, Co. Cork, requires locum dentist, two to three days/week for 10-12 weeks April/May/June 2020. Please email marian@corkdentalclinic.com.

Dental nurses/managers/receptionists

Qualified dental nurse with orthodontic experience required to work with specialist orthodontist. Centres in Monaghan and Cootehill. 13 surgeries, award-winning, multidisciplinary centre including a specialist orthodontist, specialist oral surgeon, and 10 dentists. Applications to luciagsmith@gmail.com.

Dental nurse required on part-time basis (three to four days per week flexible) in a long-established dental practice in Mullingar. Experience not essential. Initial contract is for three months with a view to a long-term position. Applications to sue.oconnor2@gmail.com.

Excellent opportunity for senior receptionist/practice manager for dynamic Dublin city centre practice. Please send cover letter and CV to dublincitydentaljob@gmail.com.

Experienced, qualified dental nurse for specialist oral surgery, dental, implantology practice. IV sedation and general anaesthesia sessions. Full/part-time, permanent. Email: castleclinic@oralsurgery.ie.

Dental nurse/receptionist required for four-day week in long-established orthodontic practice in Limerick City. Must be enthusiastic and computer literate. Immediate start. Applications to eamon@signaturesmiles.ie.

Part/full-time experienced dental nurse required for Galway city centre practice. Forward CV to galwaydentalpractice@gmail.com.

Qualified dental nurse required to join our expanding dental practice. Ideal candidates should have 1+ years' experience, have a positive attitude, be patient focused and a team player. Apply with CV to edel@callandental.ie.

Motivated, enthusiastic dental nurse required to join a busy, modern dental practice in the Lucan area. This role will require clinical and administrative duties. A qualification in dental nursing is essential. Experience with SOE ideal but not essential. Applications to lucandentalcare@gmail.com.

Dental nurse required for orthodontic practice, Blackrock area, all day Wednesdays. Please send CV to dublinorthodental@yahoo.com.

Full-time dental nurse required for Cavan town, busy dental practice. Immediate start. CVs very welcomed to info@ndentalclinic.com.

Exciting opportunity for a part-time receptionist in a busy general practice in Co. Meath. We are looking for an enthusiastic individual to join our team. Candidate should have dental nursing experience and/or qualification. Staff car park provided. Start February 2020. Contact meathdentists@gmail.com.

Full-time dental nurse required for busy general/specialist practice in Bray, Co. Wicklow. Experience essential and computer skills a must. A positive outlook and the ability to work in a team are required. Applications to dentist2required@gmail.com.

Dental nurse full/part-time required for a specialist practice in Sandyford. Will assist both prosthodontist and oral surgeon. Duties may include some reception work, answering phone, booking appointments and taking payments. Hours negotiable. Please email CV to info@specialistdentistry.ie.

Exciting opportunity for a part-time nurse in an award-winning practice, located in Co. Meath. We are looking for a motivated and dynamic individual to join our large team. Candidates should have dental nursing experience and/or qualification. Start date February 2020. Contact dentalnursevacancymeath@gmail.com.

Dental nurse required: excellent organisational, communication skills and ability to work on own initiative. Will be required to work with oral surgeon/orthodontist, upskill training will be provided. Excellent role within fully supported management structure. CV to info@clondalkindental.ie.

Hygienists

Experienced, flexible and enthusiastic dental hygienist required for full-time position. Great patients and excellent support staff in two modern, computerised practices in Westmeath. Send cover letter and CV to info@kinnegaddental.ie.

Hygienist required for city centre practice – two days beginning January 2020. Opportunity to work in a busy environment with great team and excellent conditions. Qualification in dental hygiene essential. Applicants please email your CV to surgerydental@hotmail.com.

Dental hygienist(s) required for our clinics in Roscommon town and Claremorris, Mayo. Part-time or full-time hours considered. Excellent remuneration, support staff and working conditions. Please contact Dr O'Donovan by email at dr.odonovan@alexandradental.ie.

Hygienist required to take over an established list in our busy Letterkenny practice. Email rachelmccafferty71@gmail.com.

Kind and experienced hygienist needed, south Dublin. Full book. Newly refurbished surgery. Join a large and friendly team. Guaranteed minimum hourly rate plus commission available. Applications to ed@seapointclinic.ie.

Co. Meath: part-time position at Ratoath Dental and Implant Centre. To replace excellent and kind hygienist leaving in January. One or two days weekly, start February. Very good working conditions and remuneration, and a very happy team! Email CV to ratoathdental@gmail.com.

Deansgrange Dental Clinic is accepting applications for a full-time dental hygienist to join our existing award-winning, driven and fun team of dental hygienists and dentists. Motivated patients and a helpful, supportive dental team. Email careers@deansgrangedental.ie.

Part-time dental hygienist required for busy, modern practice in Co. Mayo. Excellent working conditions as part of a small, friendly team. Send cover letter and CV to breaffydental@hotmail.com.

Dental hygienist required for specialist periodontics practice in Castleknock, Dublin 15. Tuesday (8.00am – 2.00pm), Friday (8.00am – 1.00pm) and one Saturday morning per month. Cutting-edge periodontics care of patients with advanced attachment loss and patients with dental implant restorations. Email roryperio@gmail.com.

Hygienist required for busy list at periodontal practice in Naas. Three-day, well-established book. You will be supported both operationally and clinically by a professional team, allowing you to focus on your patients' care. Please provide curriculum vitae to info@periodontalsuite.ie.

Orthodontic therapists

Orthodontic therapist required for a full-time position in a busy, state-of-the-art, multidisciplinary dental practice in south Dublin. Attractive remuneration package offered. Applications/CVs to orthotherapistjob@gmail.com.

PRACTICES FOR SALE/TO LET

Midwest. Modern three-surgery family practice for sale. High turnover with low costs. Large, loyal patient base with room for expansion. Genuine enquiries to dentalpractice20201@gmail.com.

Donegal – long-established, busy, full-time, three-surgery general practice. Good location, reasonable rent. Experienced, loyal, qualified staff. Modern equipment, walkinable. Excellent potential for growth/expanding services. Strong new patient numbers. Good profits, priced to sell. Email niall@innovativedental.com.

South east: two modern surgeries, long established. Leasehold, low rent. Very busy, excellent location, strong footfall. Room to expand. Low GMS numbers. Good profits, low overheads. Excellent potential for growth. Email niall@innovativedental.com.

South west Dublin – top-class, very modern, two-surgery practice. Busy, excellent location, good footfall. Strong new patient numbers. Good staff. Low medical card. Excellent figures. Ample opportunity to expand hours and services provided. Email niall@innovativedental.com.

Co. Tipperary – two-surgery practice, an excellent location, very large footfall. Reasonably modern equipment. Below average GMS. Very low overhead. Good practice profits. Realistic price. Good potential for growth. Transition period available. Email tipperarypracticeforsale@yahoo.com.

Modern, two-surgery, Cork City suburb practice for sale. Purpose built, digitalised. Huge potential in a growing suburb. Please reply to ob1kob2@gmail.com.

Galway City – long-established, busy general practice. Prime location, two surgeries, room to expand. Experienced, loyal staff. Minimal medical card. Excellent profits and very low rent. Ripe for growth potential. Principal available for transition. Priced to sell. Contact Niall@innovativedental.com.

South Tipperary town practice for sale. Freehold or leasehold title. Three modern surgeries in a great location with parking. Fully computerised. Experienced and loyal qualified staff. Excellent opportunity. Flexible lead-in arrangements negotiable. Email seiredent@gmail.com.

Bishopstown, Cork. Well-equipped, two-surgery digital practice. HSE standards passed, recently renovated. Freehold/leasehold with accommodation available onsite. Experienced, trained staff. 20% GMS. Email practicesalecork@gmail.com.

Galway City centre. Excellent opportunity to acquire long-established, two-surgery general practice. Good growth potential. Low medical card. Experienced, loyal staff. Principal retiring and available for transition. Priced to sell. Reply to galwaypractice1@gmail.com.

EQUIPMENT FOR SALE

Saratoga dental cabinets for sale for three to four surgeries. Glass worktops and integrated sinks. Contact info@beechwooddental.ie.

Putting down roots

PIOTR KORPAL moved to Ireland from Poland nine years ago, and runs Ashbourne Dental Care in Co. Meath.

What prompted you to move to Ireland?

I qualified in Poland, and worked there for three years in both the public health service and in private practice. Then I decided that it was a good time to try something else and work abroad, so I sent a few CVs to the UK and Ireland and Dr Robert Gallagher in Belmullet in Co. Mayo responded.

Was it difficult to settle here?

Dr Gallagher helped me with the process of registration and explained everything. It was a very nice experience because people were very friendly from the beginning. Then Dr Gallagher said that he was interested in retiring and was looking for somebody to take over the practice. However, at that point that wasn't something that I could do, so I applied for a couple of jobs in Dublin.

What are the main differences you see between the system in Ireland and in Poland?

It's much, much easier to establish a company in Ireland than it is in Poland. It's trickier there because the standards are sometimes a little bit ridiculous.

For example, you can only use certain types of the paint to colour the surgery, or the waiting room, and so forth. That's what I hear from friends who have opened practices in Poland.

In terms of treatments, under a health service scheme like the medical card scheme, you're entitled to have all of the necessary treatment, not just two fillings a year and a check-up. Also, the school system works a little bit better in Poland, I would say, because the children are better looked after. You will have all of the necessary work done by the school dentist, and there are not such long waiting lists.

How did you come to set up your own practice?

The practice I worked in unfortunately closed down, and a few people were left without work. I said to myself, well, if not now, when? So I decided that I was going to open the practice and start from scratch. With a positive push from Dr Richard Lee Kin, who was very helpful with all of the organisation, plus help from the landlord, who was saying, you're going to do it, you're going to be fine, it worked out very well. Now my sister and my girlfriend, who are both dentists, work in the practice with me, and we're expanding. I didn't expect in my boldest deams that things would turn out so well.

What do you feel are the particular challenges for dentists from outside Ireland?

Getting a bank account was a bit of a struggle. You have to have a history with banking in Ireland. It was the same later on to get credit [to set up the business]. If you want to establish your business, it will take you a while. That's why I rejected the offer initially to take over the practice in Belmullet, even though the offer was very good. I moved to Dublin to work a little bit longer to build up some money and build up a history with the banks.

What led you to join the IDA? What involvement do you have with the Association?

Dr Richard Lee Kin said it would be wise to do so, because you've got help from your colleagues, you've got the meetings, and also for the indemnity. I found it a good idea to be part of it. There is help there. You can make connections with your colleagues. I recently spoke at a young dentists' meeting, which was a very nice experience. It was very stressful too, to talk to an audience like that. There were young dentists, and myself as a young dentist but with some experience after nine years. It was fun.

What more could the IDA do to support dentists?

It's very difficult in Ireland (and in Poland) to train for a specialty. I think it would be helpful if you could do the curriculum part-time, as I think they do in Spain for example, where you're seeing cases and can follow the specialists' or professors' experience and have some clinical experience. Obviously this would have to be in conjunction with the Dental Council, but it would be helpful to gain experience, a pathway if you've been working for a couple of years and want to try and see how it's going to suit you.

Piotr considers himself to be very much settled in Ireland now. He enjoys karate and scuba diving, and he and his girlfriend recently started dance lessons in preparation for their wedding. He's also considering trying a parachute jump, after receiving a voucher for his 30th birthday.

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