

# Journal of the Irish Dental Association

Iris Cumainn Déadach na hÉireann

# Infective endocarditis guidelines

- where to turn?





# 1 in 3

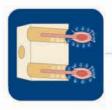
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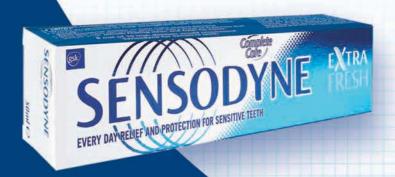
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- Independent Market Research May 2003.
   Gillam DG et al. J. Periodontal 1992; 63; 7-12.
   Silverman et al. Am J Dent. 1994;7:9-12.
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## Using our political weight

Another year draws to a close and it is time to look back and, more importantly, to wish all of you a happy Christmas and a great 2009. Despite all the problems, there are great opportunities ahead and we will need to be ready to seize them. We need to work together, use our political weight to demand best patient care and argue respectfully for appropriate remuneration. The 'Influencer' Fintan Hourihan (pp.256-257) is showing us the way and he is using his previous experience to great effect for our Association. This interview is very good reading and gives us an inkling of what we can expect. Ena Brennan's President's News (p.242) highlights the strong political stance being taken, and points out that increased cost may drive patients towards 'dental tourism', which may have its financial benefits for patients, but there are considerable clinical risks. The IDA delegation meeting the Minister for Health and Children (p.244) is the type of discussion we need to support.

Christmas is a time of giving – resources, support, time, but not necessarily money – and the Smile (CEKA) Dental Programme in Kenya (pp.258-259) is a very good way to see how work, care and rest can occur simultaneously. Zimbabwee, the Congo, and Mumbai in India are also on our minds, and the suffering is something we can hopefully do something about. It is not good enough to sit idly by.

#### Scientific coverage

There is a desire for some consensus on antibiotic prophhylaxis for heart disease. EU News (pp.260-263) shows the problem across Europe with many countries having different protocols. A scientific article (pp.264-270) on infective endocarditis prophylaxis (pull-out central section – thank you Think Media) gives an overview of the different guidelines and highlights a regimen for treating at-risk patients. It is hoped that the Dental Council will adopt this regimen as a reasonable way forward until we have more research.

The Dental Treatment Services Scheme (DTSS) is very important to our colleagues and Dr Lynch's paper (pp.271-273) highlights the decreasing number of dentists participating in this scheme. This withdrawal will put many of our patients at risk, with no dental support available leading to more emergencies attending our overstretched dental emergency service.

'Quality assurance in dental radiography: intra-oral image quality analysis' by Dr Bolas (pp.274-278) is an ideal audit to introduce into practice, will improve patient care, prevent over irradiating our patients and will be a requirement for clinicians to partake in.

#### Using the right loupes

Our practice management section highlights the advantages of illuminating magnification (loupes/dental operating microscopes; pp.282-286). As a surgeon, I use them all the time and have used them since 1990 before anybody comments on my age! They take time to get used to but they certainly improve what we do, even the so-called simple things like removing wisdom teeth. The surgery is more delicate, we remove less bone and the patients seem to have significantly less swelling. It is advisable to try different types and purchase ones that are individual for you with your pupil distance and ideal working distance incorporated. There are many other endodontic tips in this article and again it is worth the time spent reading it.

Thanks to all our readers and particularly to Dr Walter Allwright (p.251), who even after a few years of retirement maintains a watch on the Journal and contributes 'worthy advice' in his Letters to the Editor.

#### Six editions completed

The Journal has completed six editions in 2008. It has been hard work for your editorial team, but their work ethic has been amazing. The Journal that you get would not be possible without the support of Think Media, who have helped enormously and their energy is contagious. My special thanks to Fionnuala O'Brien, our Journal adminstrative support, who deals with all queries and manages to keep everybody on their toes; our referees, who painstakingly give of their time without any reward; the officers of the IDA who support what we are trying to do; and, lastly, our authors, who take the time and effort to put papers together.

We look forward to your papers after the break.



leo F. A. Stassen

**Prof. Leo F. A. Stassen** Honorary Editor

#### PRESIDENT'S NEWS

## **Challenging times**

#### **Budget 2009**

The Association met with Minister for Health and Children, Mary Harney TD, in November to discuss the effect of Budget 2009. In particular, discussions took place regarding the proposal to restrict tax relief on dental expenses at the standard (20%) rate, whereas previously relief at the higher (41%) rate could be availed of by patients for medical and dental care. This will have extremely serious consequences for patients of all ages. It will significantly increase the cost of treatment. Higher costs will cause patients to postpone treatment or to leave the state in search of treatment at great inconvenience to themselves and at increased risk to the safety and quality of their treatment.

In purely budgetary terms, there will a resulting loss of income to dentists leading to a diminution of activity in recessionary times and the resulting consequence of a false economy in the healthcare of our country.

In the case of children falling outside the HSE guidelines and requiring privately delivered orthodontic treatments (whose average costs could amount to €5,000 for a two-year course of treatment), this change could mean the relief available being reduced from €2,050 to €1,000. Similarly significant increases in net cost to patients would be apparent for all other procedures for which tax relief is available. The consequences in terms of extra costs for patients and their families will be extremely significant, in addition to the obvious health effects faced by patients. Equally, these changes will bring very real consequences for dentists, their staff and for ancillary services.

Also, the proposed amendments to the Competition Act 2002 to allow the IDA and other representative bodies to engage with the Government were discussed. The Minister was advised that the ongoing stand-off is leading to the collapse of medical card scheme benefits for patients in many areas. For example, Co. Meath now has only seven participating dentists, where once 36 general practitioners were involved. Inevitably, this has caused huge disruption for patients, great dissatisfaction among dentists and intolerable pressure on the public dental services.

#### **Meeting with the Dental Council**

A delegation from the IDA met with members of the Dental Council in November to discuss various issues relevant to dentistry such as incorporation, advertising, continuing professional development, the new Dentists Act, etc. The Association is anxious to see that patients are protected and that information within advertising is not misleading given the reliance of the public on the expertise of dentists. Dentists expect that they can practice on a level playing pitch and expect the Council to intervene to sanction the small minority who may be tempted to engage in inappropriate advertising practices.

#### **ADA Conference**

In October last, I had the pleasure of representing the Irish Dental Association at the American Dental Association annual meeting in San Antonio, Texas. The conference confirmed the fact that dentists are facing the same challenges and difficulties across the world, which makes it important for us to engage with and learn from sister organisations, while occasionally they can learn from us. It was marvellous to attend such a conference with over 20,000 attendees and over 500 trade

companies present over four days. Many varied scientific lectures and hands-on courses were available to delegates, with the Annual Dinner being the highlight of the social programme.

#### **PDS Seminar**

The Public Dental Surgeons Seminar was held in Trim, Co. Meath, this year and I was fortunate to attend the Seminar and the Annual Dinner. There was a good attendance of dental surgeons, nurses and hygienists. We were delighted to have such an excellent range of national and international speakers present, as well as a very busy trade show.

#### **Diary and Directory**

All members will have received their 2009 Diary & Directory. The publication is a very useful tool to be used by you in a personal or indeed professional capacity. All member details are published along with details for members of the trade. A particular word of thanks to all our advertisers in the publication, without whose support we would not be able to publish this Diary.

Finally, I would like to take this opportunity to wish all IDA members a very happy and joyful Christmas and a peaceful and prosperous New Year.





# Annual Conference 2009 - 'Skillkenny'

The Annual Conference will take place from April 22-25, 2009 in Kilkenny. Located in the revamped Hotel Kilkenny, the conference will commence on Wednesday 22nd with four very interesting preconference courses on the areas of Endodontics, Paediatric dentistry, Composites and Oral Surgery.

Once again, the Association will hold its Annual General Meeting as part of the Conference. The AGM will take place on Thursday April 23 at 10.00am, and we encourage each member to attend. Dr Donal Blackwell will be elected as President, taking over from Dr Ena Brennan.

The Annual Conference will also see the re-introduction of 'Lunches for Learning', in which renowned speakers discuss topics over lunch with about 10-12 participants. This gives participants a rare opportunity to ask relevant questions on certain techniques, products, etc., of the various speakers/presenters.

A packed schedule will include both national and international speakers, who will present on both clinical and non-clinical topics, including: Prof. Brian O'Connell on dental tourism; Dr Mark Diamond on oral surgery; Dr John Dermody on endodontics; Prof. Rory O'Neill; Prof. Jimmy Steele; and, Dr Dermot Canavan on splint therapy.

We are especially delighted to welcome Professor Denis Tarnow, Department of Periodontology and Implant Dentistry, New York University College, who will present on Friday April 24.

Table demonstrations and the Costello Medal will take place on Thursday afternoon, April 23, and we make a special plea to you all



Irish Dental Association Annual Conference Kilkenny, April 22 - 25, 2009

to think about registering a table demonstration for this year's event. Our trade colleagues will be present on Thursday and Friday, April 23 and 24, and we look forward to hearing about the many new products and services on offer to the dental profession here in Ireland. No conference would be complete without a varied social programme, including the ever-popular trade show party on Thursday evening, where everyone is welcome. The highlight of the social calendar will be the Gala Dinner on Friday night, with dancing, fun and frolics till the early hours!

As you are aware, Continuing Professional Development (CPD) will become mandatory for all dentists from 2010. Attendance at the conference will provide you with your entire annual requirement of CPD points/hours, so attendance at next year's conference is a must. Book early, and we look forward to seeing you all in Kilkenny!

### **PDS Seminar**



Dr Pat McSherry, Consultant Orthodontist, addressing the Seminar.

The PDS Seminar went to the royal county of Meath this year and was a great success. The event was attended by over 200 delegates, including dentists, hygienists and dental nurses, and took place at the Knightsbrook Hotel, Trim.

A full trade show was present on Thursday including stands on oral promotion, smoking cessation, and oral health and the Travelling community.

Highlights from the event included presentations from Prof. Dan



From left: Professor John Clarkson; Dr Barney Murphy; Dr Marie Touhy; Dr Colleen O'Neill; and, Dr Matt Walshe.

Ericson, University of Malmo, Sweden, Prof. Trevor Burke, University of Birmingham, Prof. Monty Duggal, Leeds Dental Institute, and Dr Alison Dougall, Dublin Dental Hospital. Guest of honour at the annual dinner was Professor Colman McGrath, a Trinity College graduate who is now based at the University of Hong Kong.

Dr Bridget Harrington-Barry stood down as President of the group and was succeeded by Dr Rosarii McCafferty. Dr Jane Renehan was elected as President Elect.

#### **IDA NEWS**

# IDA delegation meets Minister for Health and Children

On November 18, a delegation from the IDA met with the Minister for Health and Children, Mary Harney TD, to discuss issues of importance to Irish dentists, in particular issues arising from the recent Budget. A constructive exchange took place on a number of critical concerns for the profession.

The Association welcomed Minister Harney's support for extending to the IDA the arrangements provided for in the Government statement of October 21, wherein the role of the Irish Medical Organisation in representing general medical practitioners is to be assured by an appropriate amendment to the Competition Act, 2002. The IDA feels that this development is vital to address the near collapse of services currently provided to medical card holders, and the consequent knockon effect on public dental services, all of which affects the most vulnerable members of society most particularly.

The Association also welcomed the reaffirmation of the Minister's support for the appointment of a Chief Dental Officer within the Department of Health and Children.

In regard to the recent Budget announcement on tax relief for dental patients, the Minister suggested a broadening of the scope of the MED 2 scheme to cover routine dental treatments. The IDA delegates pointed out that account would need to be taken of the extra administrative load that could fall on dentists from such a proposal. The IDA suggested an alternative approach, whereby the existing MED 2 relief arrangements would be retained, but subject to a cap on the amount claimed by the treated patient.

The IDA also stated their belief that the Government should confine extension of this (MED 2) relief to treatment within the European Union, where some measure of mutual recognition of professional competence can be said to exist.

With up to 9,000 persons employed, indirectly and directly, within the oral health sector, which is estimated to generate turnover of at least €300m, and given that dentists' incomes have declined by between 10 and 15% over the past 18 months, attention needs to be paid to the



Pictured at Leinster House (from left): IDA CEO Fintan Hourihan; Dr Donal Blackwell; Dr Ed O'Reilly; Dr Rosarii McCafferty; Dr Helen Walsh; Dr John Barry; and, Dr Gerry Cleary.

economic as well as the health consequences of the Budget proposals as announced.

A number of other proposals to assist in enhancing patient safety and promoting employment and investment in dental surgeries for the benefit of the entire community were also contained within the IDA's pre-Budget submission, and the delegates encouraged the Minister to examine these

Finally, The IDA reiterated dentists' willingness to assist the Minister and Department officials in identifying ways in which medically compromised and other patients within identified risk categories and presenting to dentists can most appropriately and safely be admitted to acute hospital settings where deemed necessary.

The IDA delegation included: Dr John Barry, Vice President; Dr Ed O'Reilly, Honorary Secretary; Dr Helen Walsh, Chair General Dental Practitioners Committee; Dr Rosarii McCafferty, Chair Public Dental Surgeons Committee; Dr Gerry Cleary, Past President; Dr Donal Blackwell; and, Fintan Hourihan, Chief Executive.

### **IDA makes submission to Oireachtas Joint Committee**

In November, the IDA made a submission to the Oireachtas Joint Committee on Health and Children. The submission, entitled 'Primary Medical Care in the Community', raised a number of issues of relevance to dentistry in Ireland, including the following:

- investment in dental practice facilities derives solely from funds generated by dentists, with no state funding being made available;
- the shortage of dentists at all levels, and the fact that the number of training places for dentists has remained static;
- the major difficulties involved in the administration of the DTSS;
- the delay in implementing long overdue reforms of publicly funded dental services because of a belief that such discussions would contravene the Competition Act, 2002;
- the importance of maintaining tax relief for patients attending for dental treatment;

- the need for a properly resourced Public Dental Service to provide dental care to children, adolescents, and patients with special needs;
- the Association's support for regulation of the profession and for reforms that promote the highest standards of professional care and treatment;
- the practice of commercial enterprises advertising to attract citizens to travel outside the state for dental treatment; and,
- the urgent need for the appointment of a Chief Dental Officer within the Department of Health.

The IDA's submission reiterated that dentistry in Ireland should be led by best practice and evidence-based principles, and that these principles must not be compromised by economic pressures, and made a number of recommendations to deal with the issues raised.







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Journal of the Irish Dental Association

QUIZ

### Quiz









A 15-year-old boy attends for a routine dental examination.

- 1. What anomalies can you see (there are at least five)?
- 2. What diagnostic tools can you use to get more information?
- 3. Are these anomalies related?
- 4. What factors do you consider when deciding to leave canines in the lateral incisor position?

Answers on page 280.

# IDA response to Budget – dental patients to suffer as tax relief slashed

Patients who need dental surgery will be unfairly penalised by the Government's decision to restrict tax relief on dental work, announced in the recent Budget. The IDA has requested an urgent meeting with the Minister for Health and Children to discuss the move.

Mr Fintan Hourihan, Chief Executive of the IDA, said that the move would save the exchequer little by way of reducing tax relief but would have a significant impact on those requiring necessary dental treatment: "This country already has one of the poorest levels of state support for dental health of any European country and the public dental health sector is close to collapse. Today's news is likely to discourage large numbers from undertaking important dental treatment or from getting important preventive work done for their children".

Mr Hourihan said that the Association would be seeking an urgent meeting with the Minister for Health and Children to discuss the matter: "We don't dispute that these are difficult times but we strongly contend that the marginal impact of this move for Government finances is far outweighed by the lasting damage it will do to our dental health services and the oral health of our population".

# GP Group elects new chair

The Association's General Practitioner Group has elected Dr Helen Walsh (right) as its new chair to succeed Dr Maurice Ouirke.



#### **Dental Protection lectures**

A very successful lecture entitled 'Close Encounters of the Wrong Kind', given by Dental Protection, recently took place in Dublin and Cork. The events were open to all members of the dental team and focused on the importance of good communication skills within the dental practice. Dr John Tiernan and Dr Brian Edlin from Dental Protection presented on the evenings and gave very relevant and practical advice on how best to deal with complaints, and difficult patients, and how best to avoid conflict.

There was also a very worthwhile questions and answers session, with all members of the dental team getting involved.

Further venues and dates will be announced for 2009.



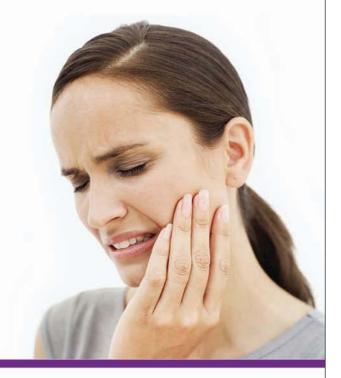
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#### **IDA NEWS**

### Dentistry issues raised in Seanad

Following representations from the IDA, Senator Shane Ross raised the issue of the Association's representation rights and the Competition Act in a Seanad debate on November 12.

Senator Ross raised the need for the Minister for Health and Children to address the issue of the Competition Act 2002 in relation to Irish dental practitioners. He spoke of dentists' concern about the possible collapse of the State's dentistry scheme for medical card holders.

He demanded that the Department of Health and Children and the HSE engage in discussion with the IDA before this becomes a crisis, as the first concern must always be the patient. He also raised the issue of dentists' and patients' dissatisfaction with the budget

#### **IDA** withdraws from Awareness Day

The IDA has written to the HSE to advise them of its decision to withdraw from participation in the proposed Awareness Day related to SI 478/303 and clinical audit.

This decision reflects concern at the direction of the proposed programme and the refusal by the HSE to support the Association's proposals for an initial workshop for a select audience of dentists followed by an education day open to all practising dentists and separate briefings to be arranged by the Association.

The IDA also remains concerned that there is no evidence of any commitment by the HSE to addressing the issues that arise with implementation of the new clinical audit arrangements. The Association is concerned that by implicitly endorsing an Awareness Day, it might be misunderstood to accept that this represents the discharge by the HSE of its full obligations, and the IDA is not prepared to allow this belief to take hold in view of the many issues that remain to be addressed.

The letter stated the IDA's welcome for the HSE's recognition and endorsement of the Association's clinical audit template. The IDA will now brief members via branch meetings, Journal articles and a presentation to the Association's scientific programme, which takes place next April.

provision under which some allowances for tax relief for orthodontic and other treatments were reduced by 50%.

Minister of State at the Department of Transport, Deputy Noel Ahern, responded to the Senator's questions on behalf of the Minister for Health and Children. He pointed out that responsibility for the Competition Act rests with the Tánaiste and Minister for Enterprise, Trade and Employment, and that Department is currently engaged in a review of the Competition Act and has been having consultations with various interested parties in that regard. Senator Ross later stated that he believes that the Government can be persuaded of the IDA's case on this issue, but that there is much hard work ahead.

#### **IDA** meets with Dental Council

A delegation from the IDA attended a meeting at the Dental Council offices on Wednesday, November 19. The IDA delegation included: Dr Ena Brennan, President; Dr Adrian Loomes, Honorary Treasurer; Dr Garret McGann, Honorary Treasurer Designate; Dr Bridget Harrington-Barry, Honorary Membership Secretary; Elaine Hughes, Membership Services Development Manager; and, Fintan Hourihan, Chief Executive.

The agenda for the meeting included:

- 1. Dental Council Code of Conduct pertaining to Public Relations and Communications.
- 2. Guidelines re infective endocarditis.
- 3. Dentists Act.
- 4. Clinical audit.
- 5. CDE and competence assurance.
- 6. Oral Health Strategy/dissolution of PGMDB.
- 7. Alternative dispute resolution.
- 8. Dental tourism.
- Register for clinical dental technicians, and matters pertaining to auxiliary grades.
- 10. Incorporation/limited liability partnerships.

### Dentists warn that school vending machines affect teenagers' health

Sweets, crisps and fizzy drinks sold through vending machines in Irish schools are a significant contributor to tooth decay and obesity among teenagers, according to Dr Rosarii McCafferty, President of the Public Dental Surgeons Group of the Irish Dental Association.

"There is convincing evidence from both home and abroad that the frequent consumption of sugary foods, fizzy drinks and fatty snack foods are a cause of both tooth decay and tooth wear in teenagers, and the Irish Dental Association believes that the removal of vending machines, or perhaps restocking them with healthy options, would result in an improvement in both oral health and obesity levels," she said.

Dr McCafferty said that there is also a misconception that 'diet' or 'low-calorie' fizzy drinks favoured by weight-conscious teenagers are somehow less harmful. "They might contain fewer calories, but even so-called 'low-cal' fizzy drinks cause tooth erosion in the same way as their sugary counterparts", she said, adding that a recent WHO survey of the dietary behaviour of school-going children painted Ireland in a poor light.

"That WHO survey ranked Ireland 6th out of 35 countries for the numbers of 15-year-olds who drink soft drinks at least once and first for the percentage eating sweets daily."

Dr McCafferty said that schools should seriously reconsider their policy on vending machines as a matter of urgency.

# RCSI Faculty of Dentistry hosts successful Scientific Meeting

Approximately 200 delegates attended this year's Annual Scientific Meeting at the Faculty of Dentistry of the Royal College of Surgeons in Ireland on October 30 and 31. In welcoming delegates, Dr Patrick J Byrne, Dean of the Faculty, described the meeting's theme, "Making Our Younger Patients Smile: From children to young adults", as "a challenging area of care", and expressed his confidence that the meeting would help dentists provide optimal care to younger patients. A distinguished group of speakers covered a wide range of topics, from the general (Professor Helen Whelton's overview of the oral health of the younger patient), to the specific (Dr Anne O'Connell on dental anomalies in children), and from the clinical (Dr Mary Freda Howley on dental trauma) to the psychological (Dr John Walsh's stimulating presentation on behaviour management of the young patient).

A highlight of the meeting was the delivery of the 11th Edward Leo Sheridan lecture by Professor David Kenny, Director, Cleft Lip and Palate/Craniofacial Dental Program and Senior Associate Scientist, Research Institute, The Hospital for Sick Children, and Professor of Dentistry, University of Toronto, after which Professor Kenny was presented with the Edward Leo Sheridan Medal. Dr Kenny's lecture, 'Management of Cleft Lip and Palate at Sickkids: Three Decades of



From left: RCSI Vice President Ms Eilis McGovern; Edward Leo Sheridan Medal recipient Professor David Kenny and, Dr Patrick J Byrne, Dean of the Faculty of Dentistry, RCSI.

Surgical, Scientific and Social Change' gave a fascinating overview of the evolution of research and treatment in Toronto to deliver the very best standard of care to infants and young people with cleft lip and palate. He emphasised the vital importance of a multidisciplinary team approach, with research embedded in clinical practice.



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#### **IDA NEWS**

feature of the address.

### **Updated history launched**

The Evolution of a Profession and of its Dental School in Dublin by John B. Lee is now available in a revised and updated edition, edited by Conor McAlister. It was launched at a function in Lincoln Place recently at which Professor Brendan Kennelly entertained the attendance in his role as guest speaker. He praised the voice and style of the author, the late John B. Lee, so evident in the prose and complimented the way in which the story of the profession is told. A poem received by Professor Kennelly from the now Dean of the School, Dr Gerry Claffey (referred to as "young Claffey") subsequent to a missed dental appointment some years ago proved a popular

Several members of the family of John B. Lee were in attendance and were presented with special editions of the book and a framed cover. The book costs €30 (plus €3 postage and packing) and copies are available from the Alumni Association, Dublin Dental School & Hospital, Lincoln Place, Dublin 2. (Tel: 01 612 7214 Email: Alumni@dental.tcd.ie.)



At the launch were (from left): former Dean of the School, Dr Diarmuid Shanley; Dr Martin McAleese; and current Dean, Dr Gerry Claffey.

## **FAQs on Dental Council Code of Conduct**

The recently published Dental Council Code of Conduct pertaining to Public Relations and Communications aims to facilitate dentists in providing better information for patients, who in turn will have a clearer understanding of the services available and be in a position to make an informed choice. It is incumbent on dentists to ensure that the information they provide is truthful, factual, relevant, accurate and cannot be misconstrued. It is intended that such information is made available in appropriate ways reflecting the modern practice of dentistry. An article regarding the Code of Conduct was published in the last issue of the *Journal of the Irish Dental Association* (Volume 54, Number 5: October/November 2008), and the Code is available in full from the Dental Council's website – www.dentalcouncil.ie. The following FAQs have been prepared by the Dental Council.

#### Frequently asked questions

#### How do I describe my professional status?

Every person who is registered in the Register is entitled to take and use the description of dentist, dental surgeon or dental practitioner.

# May I call myself a specialist in children's dentistry, endodontics, periodontics, etc?

No. It is illegal to do so. However, you may describe your practice as limited to children's dentistry, endodontics or periodontics, etc., if you are engaged in limited practice.

#### May I describe myself as an implant dentist?

No. It is illegal to do so. However, you may list, as part of the services offered, treatments you provide such as implant placement, implant restoration, or both implant placement and restoration.

#### May I say that I have a "special interest in"?

The use of the phrase "special interest in" may imply a special knowledge of a particular subject, which could be misleading and therefore it is not acceptable.

#### May I claim membership of societies, associations, etc?

Inclusion of membership of societies, associations, institutes, study clubs, etc., is not permitted under the Act.

#### May I list my fees?

All dentists and dental specialists providing services to the public for a fee may display fixed fees per item or in the form 'from  $\in x$  to  $\in y'$ . It is recommended that fee lists be displayed both in the practice premises and in any forum displaying practice information. It is not appropriate to describe fees as 'from  $\in x'$ .

#### May I use testimonials?

The use of testimonials is inappropriate because the public are unable to check the accuracy and veracity of such testimonials, which could be misleading. It is very important that all public statements are completely accurate. Great care must be exercised when describing diseases or dental conditions not to alarm vulnerable patients. It is important not to exaggerate the dentist's ability or the benefits of dental treatments as this can lead to disappointed patients. Effectively, no public statement shall contravene the principles underpinning the Dental Council's Code of Professional Behaviour and Dental Ethics.

Failure to comply with these regulations will be considered to be professional misconduct and could lead to an inquiry by the Fitness to Practice Committee and disciplinary action by the Council.

**IDA NEWS** 

### **CEO** addresses members on Budget

At an IDA briefing and consultation meeting on November 7, Association CEO Fintan Hourihan addressed members on:

- the IDA's pre-budget submission;
- the implications of Budget 2009 for dentistry;
- the IDA's response to the Budget; and,
- what individual dentists can do.

He informed members on the range of financial and other advice available to them though the Association in the light of falling incomes. He reiterated the IDA's commitment to a strong response to Government on these issues, and described plans for lobbying meetings with the Department of Health and Children, among others. He advised dentists to play their part by lobbying their TD and local media to draw attention to the situation. He offered tips on effective lobbying, and assured members that the IDA would continue to strongly represent dentists in these difficult times.

### Letter to the Editor

Dear Editor,

I refer to the item 'Tooth sensitivity increasing from brushing too hard' in IDA News on page 15 of the *JIDA* dated August/September 2008.

I find it wearisome – I have written on this matter before – that when discussing tooth sensitivity reference is made to exposed dentine, the treatment for which requires fluoride toothpaste and sometimes engagement with a soft toothbrush. This will, it is claimed, prevent/cure the sensitivity occasioned by "heavy-handed" (to quote the abovementioned item) brushing.

Abrasion at the labial/buccal gingival areas of the teeth leads to sensitivity caused by horizontal brushing and exposure to sweet and acid materials. This is understood and accepted as fact, but what is almost never mentioned is that the abrasion at these areas is caused not just by heavy-handed brushing but by applying the toothbrush horizontally and/or in a circular motion. Gingival recession and exposure of dentine tubules, with consequent sensitivity, will not occur with vertical brushing from gum margin to occlusal surface and strict avoidance of horizontal and circular scrubbing. I write as a reformed horizontal scrubber – I have the deep cervical grooves to show for it – and I no longer experience tooth sensitivity. There is also a belated halt to gingival recession, but that is another story.

Now in my 94th year, and with 30 functional teeth that I hope to take with me to the grave, will anybody join me? (I mean the brushing).

Yours faithfully Walter C Allwright

# Introducing the TePe Oral Hygiene Range

available from Promed



Promed is pleased to present a new line of products from Tepe, a leading brand of Swedish oral hygiene products.

The extensive range covers a wide spectrum, from manual toothbrushes and interdental brushes, through to specialist marketing products such as "TePe TV", a display stand with a television screen, which demonstrates tooth brushing, interdental brushing, flossing and many more oral hygiene products and techniques.

"Interdental brushes (IDB's) have become mainstream oral hygiene aids, and unlike flosses and tapes, patients can and DO use them. High quality plastic coating, a wide range of sizes and consistency within the sizing are key to the effectiveness and durability of an IDB"

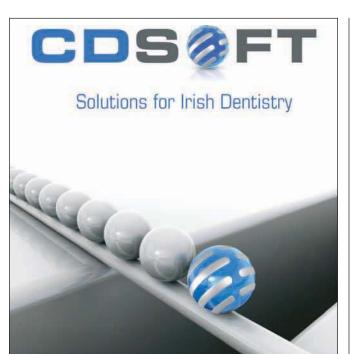
Elaine Tilling, MSc RDH DMS MIHPE

TePe products are all designed to help the user achieve an exceptional standard of oral hygiene. All of these products are recommended by dental professionals and are designed to meet very specific requirements.

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Journal of the Irish Dental Association

#### **BUSINESS NEWS**

### Advanced implantology courses



Dr Nigel Saynor's advanced course for experienced implantologists includes live surgery.

A series of advanced courses for experienced implantologists presented by Nigel Saynor, one of the UK's leading implantology experts, continues during 2009. The course includes live surgery, conducted in a state-of-the-art clinical environment, as part of Dentsply Friadent's Dental Implantology Skills Development Programme.

According to Dr Saynor: "The programme is designed specifically for established practitioners who aspire to achieve superior aesthetic results and long-term predictability in implant treatment". The content of the course ranges from producing superior aesthetic results, achieving long-term predictability and improved prosthetic solutions, to cost-effective implant treatments and enhanced practice profitability. Clinical topics covered include sinus elevation, bone grafting, immediate loading, treatment planning for complex cases, and correcting failed implants.

Dr Nigel Saynor BDS runs several courses and lectures in the UK and overseas on all aspects of implant dentistry, from the simplest restoration to more complex work, covering bone grafting, sinus manipulation and site development.

Meanwhile, a new one-day course to help implant dentists improve aesthetic outcomes in cases with compromised bone will take place in Northern Ireland in January and February 2009. Presented jointly by Dr Mark Diamond and Dr Dan McKenna, the course covers up-to-date techniques in oral hard and soft tissue grafting.

The programme of the one-day course includes live surgery and problem solving. Participants will be given hands-on training in suturing, grafting and vestibuloplasty using pigs' heads. On completion, participants will be able to treat their own patients under expert guidance.

# Sensodyne Sensitive Dentist of the Year

There has been an enormous entry for the Sensodyne Sensitive Dentist of the Year competition. The winners will be announced in January and featured in the February/March 2009 edition of the Journal. Judges for the competition were Drs Barry Harrington, Seton Menton and Anne Crotty.

## **New offering from Nobel Biocare**

Nobel Biocare has announced that it has signed an agreement to buy BioCad Medical Inc., a leading developer of computer-aided software for prosthetics, for a total amount of €26 million. At the same time, the company also announced the signing of an exclusive partnership with Optimet to offer a new generation of optical scanners with impression scanning capabilities. Along with the acquisition and the partnership, Nobel Biocare will introduce a broad range of new prosthetic materials and products. Hence, Nobel Biocare will be in a position to provide dental professionals a leading optical scanner and CAD/CAM software, the most comprehensive materials and product offers, and unique manufacturing capabilities for prosthetics. This complete range will be presented at all major industry events in early 2009 and launched thereafter.

Meanwhile, Nobel Biocare has announced the launch of a new NobelActive product brochure, reflecting Nobel Biocare's revised brand identity. The new branding is designed to underline Nobel Biocare's commitment to science, quality, product leadership and customer focus. This is reflected in a clean, clinical and high-end appearance, and

the central design element - the "sciencesphere" - stands for precision and excellence.

According to the company, the new NobelActive brochure demonstrates the revised branding approach both in terms of the new look and feel ,but also in terms of content and language. The content presents the thorough testing and science that have gone into the development of NobelActive as well as illustrating its benefits.



The NobelActive brochure is the first in a series of newly branded corporate and key product materials that will be rolled out over the coming months, as Nobel Biocare updates its branding across all key platforms.



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#### **BUSINESS NEWS**

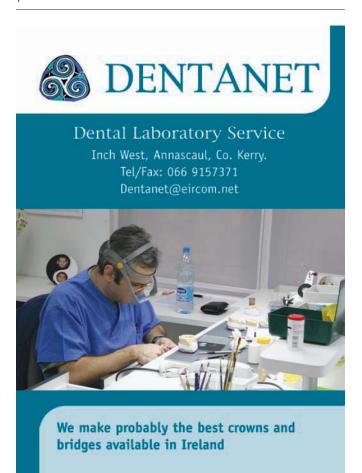
### CDSoft to acquire the ACT group

Kildare-based IT services company CDSoft Ltd has acquired the ACT Group. Under the terms of the agreement CDSoft has also acquired the assets of ACT Group, while ACT Managing Director, Hugh Clarke, will remain with the new organisation for the transition period.

The ACT Group comprises Computer Systems Services and Blue Chip Ireland. The group services a wide range of enterprise customers – including Ireland's premier electrical retailer, D.I.D. Electrical, and The Dublin Docklands Development Authority – and additionally specialises in IBM mid-range services and support.

CDSoft Ltd, based in Celbridge, Co. Kildare, is a HP Preferred Gold Partner and a Microsoft Gold Partner, providing advanced infrastructure solutions to customers. The company is one of a select group of organisations in Ireland qualified to deliver the Microsoft Voice technologies. In the area of solutions, CDSoft is the sole agent in Ireland for the enterprise class CRM product SuperOffice.

According to the company, the enlarged organisation offers nationwide managed services, delivering an expansive portfolio offering the strongest brands in the IT industry, including HP, Microsoft, IBM, Cisco, Sage and SuperOffice. Both companies service slightly different markets and offer a complementary range of products.



# New 'snap-on' alternative for denture wearers

The Denture Clinic in the UK is offering what it calls "a new and minimally invasive dental treatment to denture wearers". It claims that at a fraction of the cost of



traditional implants, a 'snap on' option is available to secure lower dentures, which are notoriously badly fitting.

With this option, miniature titanium implants, or 'mini-implants', take the place of the root of the natural tooth. The implants are placed into the jawbone under a local anaesthetic, with the ball of the implant protruding from the lower gum tissue, to enable the lower denture to 'snap' into place, giving 100% confidence of a perfect fit to the wearer.

The clinic's principal, Surrey-based Dr Justin Stewart, a member of the American Prosthodontic Society and the British Society for the Study of Prosthetic Dentistry, says: "As we age, bone height is lost, and therefore it has historically been very difficult to secure lower dentures. Mini dental implants take the place of the tooth's root, allowing the denture to snap into place when seated on the gum tissue, giving the patient full security that the denture will not shift, tilt or wander".

Dr Stewart continued: "The mini dental implants take about an hour and a half to place and fit. Patient satisfaction is extremely high because they provide permanent dental stability for those who suffer difficulties with their lower dentures, without the painful invasive surgery of traditional implants and at a fraction of the cost".

# Cork-based biomedical firm launches new technology

Enbio, headquartered at Fota Point Business Park, Cork, recently launched its new surface modification and coating technology to world markets in medical implant arenas such as orthopaedic, cardiovascular and dental applications. According to the company, the technology modifies the surface on medical implants such as dental implants in a way that enables delivery of therapeutic drugs directly to the implant location, thereby potentially removing the need for patients to take the drug orally.

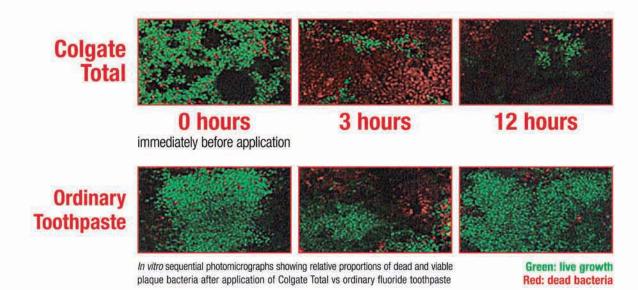
An example of the product's capability is the application of antibiotic coatings on orthopaedic implants to reduce infections. Another application is to apply drugs to coronary stents for the reduction of thrombosis or clotting following cardiovascular surgery. "This is a significant breakthrough in surface modification technology and enables the application of coatings which promote better growth, healing and enhanced infection control, among other properties", said Dan Philpott, CEO of Enbio.

# Think all toothpastes work the same?

# It's the copolymer in Colgate Total that makes it unique

As you know, dental plaque can be mechanically removed but within two hours of cleaning, pioneer colonies of bacteria attach to the tooth surface and the plaque reforms.

Due to its unique patented antimicrobial formulation of triclosan and copolymer, brushing with Colgate Total impedes the development of dental plaque for up to 12 hours.



Because the copolymer helps ensure delivery and retention of the active ingredient, triclosan, on the surface of the teeth and gingivae, Colgate Total provides a sustained antibacterial effect for up to 12 hours.

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Proven 12-hour antibacterial protection

Reference: 1. Panagakos FS et al. J Clin Dent 2005; 16 (Suppl): S1–S19.
2. Garcia-Godoy F et al. Am J Dent 1990; 3 (Spec Issue): S15–26.

\* vs ordinary fluoride toothpaste.



#### **INTERVIEW**

### The influencer

Fintan Hourihan was appointed as the Association's Chief Executive Officer in June of this year. PAUL O'GRADY interviewed him for the Journal on his impressions of the IDA and the job after six months in situ.



It may be his height (well over six foot) that initially strikes you, but it's not long before professionalism is the dominant impression of Fintan Hourihan. His warm and business-like manner comes over as confident without being arrogant, and it's clear that he has a handle on his brief. Coming as he did from the Irish Medical Organisation (IMO) where he was Director of Industrial Relations (see panel), it's interesting to hear his early impressions of the Irish Dental Association.

#### Good numbers, need for more politics

Fintan identifies several major strengths in the Association:

- numbers in membership (an overwhelming majority of dentists);
- active participation in the Association by the members;
- the high calibre of office-holders throughout the organisation;
- a real and practical commitment to science, best practice, and continuing education;
- strong international links, particularly with the BDA and the CED; and,
- good support for members in the staff of head office.

He also identifies the weaknesses or problems that he sees:

- the difficulty with negotiating presented by the Government's interpretation of Competition Law;
- a lack of understanding of oral health outside dentistry;
- State support for dentistry is derisory and there is a need to explain dentistry and oral healthcare to politicians, civil servants and other decision makers;
- GDPs work in isolation and there is a need to develop an information system within the organisation that allows all members to give feedback; and,
- while there is a strong IDA branch structure, the emphasis is on science and education. Fintan perceives a need to introduce politics into that structure and to provide a mechanism for engagement with members on a wider range of issues as well.

As evidence of his concern about the neglect of oral health, he cites the €120 million that is available to doctors in the GMS to develop their practices, and to employ nurses and secretaries. There is nothing comparable available to dentists.

#### **Action time**

Staying on the political front, there has already been a series of important meetings. The Association recently met with the Minister for Health and Children, Mary Harney TD, and her advisors, regarding the MED 2 form and the issue of Competition Law and its restrictions on the IDA representing its members.

A delegation also made a substantial submission to the Oireachtas Joint Committee on Health and Children on 'Primary Medical Care in the Community'. For the first time ever, the Association also made a Pre-Budget Submission that, while recognising the more difficult fiscal environment, stressed the importance of investment in dental care in the community.

It was evident to Hourihan almost immediately on taking up his position with the IDA that there is a need for increased lobbying. "Politicians don't really understand dentistry. And they won't come to us, so we need to lobby them in a systematic way; to have a greater involvement with them; and, we need much more dialogue on political issues," says Fintan.

The new Dental Act containing a requirement for mandatory continuing dental education (CDE) is likely to be introduced shortly. Fintan comments: "Part of our role in the Association is to see around corners and identify what the profession is likely to meet in the future. Moving to assist dentists to meet their requirements under any new legislation is an important part of our brief".

There is a chink of light on the Competition Law situation. The Minister has indicated that legislation will be introduced to allow the IMO to engage with the Government on fees for its members. The issue of the IDA being allowed to negotiate on behalf on its

members has already been raised with the Minister and Fintan says a sympathetic response was received. That should allow progress to be made on the very difficult aspects of the DTSS scheme. "Dentists are very frustrated by the operation of the DTSS scheme and this is evident in the numbers withdrawing from the scheme. That drop will cause problems and ultimately, patients will lose out."

#### **Public Dental Service**

Hourihan is also concerned about the vacancies in the Public Dental Service. "There is evidence of staff shortages affecting both morale and service. We are a long way short of the complement agreed with the HSE and we need to address that with them." He also points out that a consultant has been appointed by the Oral Health Strategy Group to review the Public Dental Service and that is also creating a lot of anxiety: "Contracting out the work of the Public Dental Service is not credible and it is important to state that we met with Dr Paul Bachelor, the consultant, who assured us he had no agenda to close down public services. These are services for vulnerable groups and there is no evidence that they can be delivered elsewhere more cost-efficiently than by the PDS. Nor are the GDPs looking to take on that work".

#### **Need for influence**

It's evident that the Association's new Chief Executive Officer has a busy agenda and a full schedule. The challenge to deliver on many issues is considerable and he and the officers and Council will need to significantly influence public policy and practice in 2009 and beyond. It's also evident that influencing decision makers and shaping policy is well within Fintan's skill set.

#### Limerick leader

Fintan Hourihan was born and lived in Limerick before moving at age nine to Dublin with his family. He returned to Limerick when studying business at the University of Limerick but was back in the capital four years later to complete a Masters degree specialising in industrial relations at UCD. Using the standard Irish test of allegiances, he says that he follows the Limerick hurlers fairly closely – hope springs eternal! He entered the workforce as a journalist with Industrial Relations News in 1990 and came into contact with most of the nation's representative bodies during his seven years with the publication. In 1997, he joined the Association of Secondary Teachers, Ireland (ASTI) as its first press officer. This involved him in several funding campaigns, work on education legislation and the publicity surrounding several strikes. In many ways, he earned his stripes with ASTI and was sought out by the Irish Medical Organisation in 1999. Within six months he had been appointed Director of Industrial Relations and initially worked with junior doctors in their negotiations. He was involved in three years of negotiations on the Consultants' Common Contracts, as well as in two-week strikes by doctors in Tullamore and Waterford and a ten-week national strike by public health doctors.

Fintan is married to Helen and they have one daughter, Molly, who is seven.

#### The Hourihan view on:

#### Standards of care

"The public is well served by Irish dentists. There are high standards in dentistry and the oral health of the population is improving."

#### **Relationships with Government**

"We have good professional relationships with all relevant bodies. However, I do not believe that oral health is afforded appropriate importance in the higher levels of the Department of Health and Children. In some sense, the current development of an Oral Health Strategy is a recognition of that fact. In the HSE, some managers do understand dentistry, but at the highest levels it just does not feature at all."

#### The HSE

"The set-up of the HSE was rushed and ensured problems. There have been several attempts at reform and now there is reform paralysis. It has been singularly unsuccessful and there is belated recognition of the need for regional structures. There has to be some local accountability and devolved decision making."

#### The DTSS

"The approach by the PCRS to claims that are refused is inexplicable to dentists and, judging by the large scale withdrawal of dentists, we can only assume the fees are not sufficient to meet dentists' costs."

#### The DTBS

"Grant-in-aid works and there is a good balance in the scheme between the needs of the patients, recompense to dentists and the State's right to probity. It is beyond comprehension how an agreed probity system for the DTSS was simply wound up overnight by the HSE."

#### **A Chief Dental Officer**

"We have received repeated assurances of an announcement of a new CDO being imminent. The lack of a CDO is having a significant effect. There is no guidance to the profession on certain important issues, and it contributes to the lack of understanding of dentistry in the Department."

#### **Dental tourism**

"Irish dentists have confidence in the quality of service that they offer. There is a duty to challenge patient assumptions on price comparisons and explain the consequences of their decisions."

#### A new Dental Act

"It's inevitable, it's welcome, and we want to engage constructively with the Department about it."

#### **FEATURE**

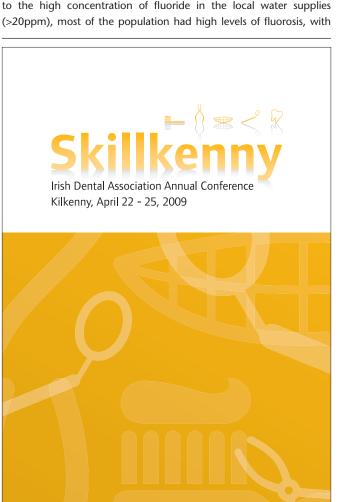
# Dental care with a smile: the CEKA Dental Volunteer Programme in Kenya

DR NAOMI RAHMAN and PROFESSOR NOEL CLAFFEY describe a project that is bringing vital dental care to one of the poorest regions of the world.

The CEKA Dental Volunteer Project was conceived in 2003 by President Mary McAleese, her husband Martin McAleese, Professor Noel Claffey, Dr Garry McMahon and Dr Paul Sullivan. CEKA takes its name from the Swahili word meaning 'smile', and the project was set up to combat dental disease in Kenya.

#### The location

The village of Embul-bul in Ngong lies 20 kilometres southwest of Kenya's capital, Nairobi. Here, in co-ordination with local priests and nuns, a dental treatment centre was set up on the grounds of a small convent and church where a small pharmaceutical dispensary is also housed. Local people from the area live in great poverty and many had never seen a dentist before and were in great need of care. Due to the high concentration of fluoride in the local water supplies (>20ppm), most of the population had high levels of fluorosis, with





From left: Lulle (dental nurse); Dr Naomi Rahman; Patrick (ambulance driver); Dr Paul O'Donnell; and, Dr Frank Farrelly with local children.

severe enamel pitting and staining. Untreated dental decay was also prevalent, causing the population undue pain and suffering over extended periods of time.

#### The project

Staff from the Dublin Dental School and Hospital, along with Dr Garry McMahon and Dr Paul Sullivan, have volunteered in Embul-bul on five separate missions to date. Most missions are carried out over a two-week period, with treatment dates being planned around times when children are still in school, so that they have easy access to the dental services. A large volume of patients can be seen in this short period of time, between 150 and 200 on each trip. Many other people walk for hours just to reach the treatment centre and are very grateful for the service, as they know they will probably not get treatment again for another year.

The services provided in Embul-bul are improving all the time; while the first volunteers had to make do by carrying out simple extractions on a kitchen chair positioned at a window for light, the clinic now has two dental units, with one chair donated by the Dublin Dental School and Hospital. A mobile unit, which also serves as an ambulance, has also been set up to reach Masai tribes living in the desert regions of Kenya, and is invaluable to these nomadic people as well as to the locals. This ambulance enables the dentists to visit many schools around the area and carry out screening and simple treatments on the day. Dental materials, instruments and a radiographic tube head and developer were purchased with donation money from several fundraising drives such as the Tooth Fairy Ball. New donations are always welcome for this worthy cause. A group of Italian dentists have also made several trips to the region over the last five years and have contributed equipment and manpower.

A typical day in the clinic involves treating a large number of patients, who gather outside the centre from early morning. The two surgeries are both continuously in use, with a third work area reserved for simple extractions. The treatments provided range from simple and surgical extractions, to fillings and composite veneers for those badly affected with fluorosis. All volunteers agreed that the Kenyan people were a joy to treat and were extremely patient and grateful for the service provided. At the end of each trip the volunteers have had a few days off to explore the cities of Nairobi and Mombasa, or experience a safari in Lake Nakuru National Park and the Masai Mara Game Reserve.

#### **Update**

The last visit to the area by Irish volunteers Dr Naomi Rahman, Dr Paul O'Donnell and Dr Frank Farrelly was in December 2006 for two weeks. Since then the political and civil unrest in the country has prevented

further missions taking place. Now that political stability has been restored, new volunteers would be extremely welcome. A typical team consists of three to four dentists and, if possible, a dental nurse to assist between the two surgeries. This December, Dr Garry McMahon and Dr Paul Sullivan plan to visit the area for a third time to treat the local population.

One water treatment plant has already been built in Embul-bul and CEKA is currently contracting to build a new one in the neighbouring village, which is even poorer than Embul-bul. This will reduce the amount of fluoride in the water and help future generations of Kenyan children to have a better start in life with regard to their oral health.

If you have any queries, or would like more information regarding the volunteering programme, please contact Dr Garry McMahon via email: barndarrig@eircom.net, or phone his practice directly at 01-288 9161.







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#### **EU NEWS**

# Commission issues and infective endocarditis survey

Honorary CED Treasurer TOM FEENEY gives a summary of recent developments in European issues and reports on an important survey of European dental associations regarding infective endocarditis.

# Commission seeks CED's assistance on amalgam and tooth whitening safety

The Commission has sought the CED's assistance in disseminating opinions on the safety of both amalgam and tooth whitening agents. It has published, in the public health section on its website, a comprehensive list of answers to questions and concerns the public may have. The full list of FAQs and their answers on different levels are available on http://ec.europa.eu/health/opinions/en/dental-amalgam/index.htm, and on http://ec.europa.eu/health/opinions/en/tooth-whiteners/index.htm. Dentists may find them useful as a reference when discussing the concerns patients may have about both amalgam and tooth whiteners.

In the section on 'amalgam' the questions covered include:

- how are dental amalgams made?;
- how can dental patients and workers be exposed to mercury from amalgams?;
- what health effects could be linked to the form of mercury contained in dental amalgams?;
- what are the possible health effects of alternative tooth filling materials?;
- conclusion on health effects of dental amalgams and their alternatives on users;
- what is the environmental risk of the use of dental amalgams and alternative materials?;
- how serious are the risks of indirect exposure to mercury from disposal of dental amalgams; and,
- what further information is needed on the environmental risks of dental amalgams?

The answers are based on the two reports issued earlier this year by The Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR), and the Scientific Committee on Health and Environmental Risks (SCHER). These are two of three independent non-food scientific committees that advise the European Commission on matters of consumer safety, public health and the environment. They comply with the principles of independence, transparency and confidentiality. Members of these committees therefore make a declaration of commitment to act in the public interest and also make a declaration of interests. Requests for agendas, minutes and opinions are published, and work and publications are done with regard to the need for commercial confidentiality.

In the section on 'tooth whitening', the questions covered are based on the scientific opinion produced in 2007 by the Scientific Committee on Consumer Products, and include:

- how is hydrogen peroxide used to whiten teeth?;
- how much hydrogen peroxide is an individual exposed to when using dental products?;

- can tooth whitening products containing hydrogen peroxide harm teeth?;
- how safe are products containing hydrogen peroxide?;
- what should be considered before a tooth whitening treatment?; and,
- conclusion are oral hygiene products and tooth whiteners containing hydrogen peroxide safe and should they be freely available to consumers?

#### Tooth whitening issue still unresolved

A vote was expected on a draft Directive at the Standing Committee on Cosmetic Products on October 22, 2008, but the Commission postponed the vote following the initial exchange of views at the meeting.

In the course of a long discussion, Member States asked for a number of changes to the proposed document, including adding the word "total" to all references in the text where the amount of hydrogen peroxide is mentioned, i.e., "0.1%-<6% total of  $\rm H_2O_2$  present or released". They also asked for wording along the lines of "or an equivalent profession recognised by a Member State" to be added following the reference to the Directive 2005/36/ES, which would (in some Member States) allow dental hygienists and technicians to perform whitening as well.

The greatest problem with the proposal seems to be reference to products containing more than 6% hydrogen peroxide – some Member States claim that these are not cosmetic products because of the link to use by dental practitioners and were because of that ready to vote against the proposal.

Following the discussion, the Commission estimated that they did not have sufficient support and withdrew the proposal. They are now considering how to proceed. The next Committee meeting where a vote could be scheduled will be in February or March 2009, and consideration is being given to adopting it under a written procedure before that. The CED is currently trying to schedule a meeting between CED WG chair Stuart Johnston and the responsible person at the Commission to see how the CED might contribute to resolving this issue in a positive way.

# Draft directive on the application of patients' rights in cross-border healthcare

The CED has produced a draft position paper on the new draft directive on the application of patients' rights in cross-border healthcare. In it, the CED welcomes the European Commission's proposed directive. It supports many of the measures designed to clarify patients' rights, protect patient safety and improve the quality of service and sharing of information and good practice.

In dentistry, although there has been much publicity given to dental patients travelling abroad, a relatively small number seek healthcare in

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Pictured at the recent Brussels CED meeting (from left): Claudia Ritter, Head of Office, Council of European Dentists; Orlando da Silva, CED President; Dr Andizej Rys, Director, Public Health and Risk Assessment, DG Sanco; and, Nina Brandelet-Bernot, EU Affairs Officer.

another Member State. Their decision is not normally based on medical necessity, but rather it is an attempt to source cheaper treatment. This makes patient mobility in the area of dental care somewhat different to mobility in other areas of healthcare.

The following is a summary of the main points of the CED position on the Draft Directive:

- 1. The CED emphasises the importance of continuity of care and of a strong dentist-patient relationship. Dental treatment often requires a series of visits to the dentist to properly plan and carry out the treatment, and to provide post-treatment care. Where patients spend only a short time in the vicinity of the dentist as is often the case where patients receive care abroad the overall quality of the health service is difficult to ensure. The CED therefore does not believe that patient mobility in the area of dental care should be actively promoted.
- 2. The quality and safety of healthcare services can best be ensured by: having up-to-date minimum training requirements for health professionals; promoting ethical codes developed by European health professionals' organisations in the context of cross-border



Pictured at the recent Brussels CED meeting (from left): Fintan Hourihan, CEO Irish Dental Association; and, Barney Murphy, who were both part of the Irish delegation.

care; through continuous professional development; and, by a commitment to professional practice that is patient safety-centred. The CED believes that professional and ethical standards can best be developed at national or regional level, and does not believe that there is a role for the European Commission in the setting of such standards.

- 3. Patients must be informed that high-quality treatment depends on properly planned care, with scope for post-treatment care. Patients should have access to clear information on the availability of and procedure for receiving reimbursements for healthcare costs abroad. Information on access to health services in other EU countries should be objective and not involve any ranking.
- 4. The CED welcomes the provision that health services are to be provided according to the legislation of the Member State of treatment.
- 5. The CED supports the provisions of the draft directive for extended co-operation between Member States, including: the mutual recognition of prescriptions; the establishment of European reference networks; e-health; and, the management of new health technologies.

# Survey of European dental associations regarding infective endocarditis prophylaxis

In an effort to get some perspective on how the issue of infective endocarditis prophylaxis is dealt with in Europe and what regimes are in use, the Irish delegation on the CED conducted a survey of all 32 CED member associations. The simple questionnaire included the following:

- In your country, is antibiotic prophylaxis recommended for any patients in the traditional risk categories?;
- If yes, which ones?;
- Which body makes the recommendations (e.g., Ministry, Chamber, dental school, etc.)?;

- What medication is used for 'at risk' patients (e.g., 3g amoxycillin)?;
- What dosage and how long before treatment?; and,
- What is the alternative medication if the patient is allergic to penicillin?

The following table gives a summary of the 21 replies received by September 30, 2008. Some countries gave an exhaustive list of patient categories requiring prophylaxis and for simplicity these lists have been abbreviated in many cases. The most interesting finding is that only the UK and Austria follow the NICE Guidelines.

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Survey of Europ	pean dental associations regarding infective	endocarditis prophylaxis
	Is antibiotic prophylaxis recommended for any	If yes, which patients?
	'at risk' patients?	
ustria	No	
elgium	Yes	Full list
yprus	Yes	Full list
zech Republic	Yes	American list
enmark	Yes	AHA list + others
ance	Yes	Mandatory and optional list
ermany	Yes	AHA list
reece	Yes	Rheumatic heart disease
		Biscuspid valve disease
		Mitral valve disease
		Artificial heart valves
ingary	Yes	Full list
eland	Yes (if AHA recommendations followed) –	AHA list if AHA guidelines followed
	No (if NICE guidelines followed)	
ıly	Yes	Full list
huania	Yes	Full list
alta	Yes	Full list
etherlands	Yes	Full list
ortugal	Yes	A history of infective endocarditis
		Artificial heart valves including the biological and homograft
		Congenital heart conditions such as ventricular septal defect,
		atrial septal defect and Fallot's tetralogy
		Surgical construction of shunts or pulmonary systematic canals
		The majority of the remaining congenital heart conditions
		(besides the ones previously mentioned)
		Hypertrophic cardiomyopathy
		Mitral valve prolapse with valvular failure and/or thickening of flaps
ovakia	Yes	High and middle risk cases of infective endocarditis of AHA 1997
ovenia	Yes	AHA list
pain	Yes	1. Artificial heart valves 2. A history of infective endocarditis
		3. Congenital heart conditions 4. Shunts
		5. Repaired congenital heart defect 6. Rheumatic heart disease
		7. Hypertrophic myopathy 8. Mitral valve prolapse
		Arterial ductus 10. Ventricular septal defect 11. Aortic stenosis
veden	Yes	All
vitzerland	Yes	Artificial heart valves, history of endocarditis, certain specific congenital conditions
K	No	

Survey of European dental associations regarding infective endocarditis prophylaxis								
Which body makes the recommendations?	Medication and dosage	Alternative and dosage						
	N/A	N/A						
Ministry of Health	Amoxycillin 2g 1 hour before procedure	Clindamycin						
The Cyprus Dental Association in co-operation with	Amoxycillin 2g 1 hour before procedure	Clindamycin						
the Cyprus Cardiology Society (in line with the								
American/European Cardiology Societies) and the								
Dental and Medical Services of the Cyprus Ministry								
of Health								
Dental schools, Chamber	Amoxycillin 2g 1 hour before procedure	Clindamycin 600mg or azithromycin						
Dontal calcoli	Assessment to the same before a second and	or clarithromycin						
Dental schools	Amoxycillin 1 hour before procedure	Dalacin						
Consensus conference organised by the French	3g betalactam per os single dose if weight	Pristinamycine 1g per os OR clindamycin 600r						
society of infective pathology with the participation	>60kg	per os						
of the Agence nationale d'accréditation et d'évaluation en santé, ANAES, and the French								
Dental Association.								
German Cardiac Society and Paul-Ehrlich-	Amoxycillin 2g 1 hour before procedure	Clidamycin, cephalexin, or clarythromycin						
Gesellschaft für Chemotherapie	l and game against processing							
KEELPNO (Hellenic CDC) dental schools	Amoxycillin 2g + amoxycillin 1g post op	Clindamycin						
Hungarian Society of Cardiologists based on the	Amoxycillin 3g 1 hour before treatment	Clindamycin						
guidelines by the American Heart Association								
None	Amoxycillin 3g 1 hour before treatment (if medication used)	Clindamycin 600mg (if medication used)						
Dental schools	Amoxycillin 1 day before	Clindamycin or azithromycin						
Chamber, dental schools	Amoxycillin 2g 1 hour before treatment	Cephalexin 2g						
None	Amoxycillin 3g 1 hour before treatment	Clindamycin 600mg						
Phrophylactic WG of Dutch Cardiac Association	Amoxycillin 3g	Clindamycin 600mg						
OMD, dental schools	Amoxycillin 2g 1 hour before treatment	Clindamycin 600mg – adults (Children 20mg/ Alternatives: cephalexin, azithromycin, clarithromycin						
Faculties of Dentistry, Slovak Heart Association, Slovak Chamber of Dentists	Amoxycillin 2g 1 hour before treatment	Clindamycin 600mg						
Board for endocarditis antibiotic prophylaxis at Health Ministry	Amoxycillin 3g 1 hour before treatment	Klindamycin 600mg						
Spanish Dental Association	Amoxycillin 2g IM/IV 30 minutes before treatment	Clindamycin, cefalexin or azithromycin						
	Amoxycillin 3g 1 hour before treatment							
Unclear	Amoxycillin 3g 1 hour before treatment  Amoxycillin 3g	Klindamycin 15mg/kg						

# Infective endocarditis prophylaxis and the current AHA, BSAC, NICE and Australian guidelines

#### Abstract

The latest guidelines from the American Heart Association (AHA) 2007, the *Journal of the American Dental Association* (JADA) 2008, the Australian Prevention of Endocarditis Guidelines 2008, the British Society for Antimicrobial Chemotherapy (BSAC) 2006, and the National Institute for Clinical Excellence (NICE) 2008 were reviewed for this article.<sup>1-5</sup>

As a result of recent literature reviews by the AHA and NICE committees, both groups made recommendations regarding antibiotic prophylaxis for dental treatment. While both agree that the benefit of prophylaxis for dental treatment is unproven, the NICE committee has recommended no antibiotic cover for any patients previously classified as 'at risk' of infective endocarditis (IE), while the AHA has recommended cover only for patients deemed to be at high risk of developing IE and with the poorest outcome in the event of IE development. The BSAC guidelines and the recently published Australian Therapeutic Guidelines on Prevention of Endocarditis 2008 fall broadly into line with the AHA guidelines. This paper will review all the separate guidelines and advocate a regimen for treating at-risk patients.

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#### Introduction

Numerous different guidelines on prophylactic regimes for infective endocarditis (IE) have been proposed, including those from the American Heart Association (AHA) 2007, Journal of the American Dental Association (JADA) 2008, Australian Prevention of Endocarditis Guidelines 2008, British Society for Antimicrobial Chemotherapy (BSAC) 2006, and the National Institute for Clinical Excellence (NICE) 2008.1-5 These new guidelines have been met with some nervousness among dentists, cardiologists and patients. A recent audit on a sample of orthodontists, evaluating their knowledge concerning which dental procedures needed prophylaxis, highlighted that many clinicians were uncertain over this matter.<sup>6</sup> Patients are receiving conflicting advice and there is much confusion.

There are many responsibilities to be considered in deciding to administer antibiotic prophylaxis or not. Concerns about antibiotic prophylaxis, risk of prophylaxis, and morbidity and mortality from IE, have been debated. Until this review, the Dublin Dental School and Hospital had not changed its guidelines regarding prophylaxis. The University College Cork Dental School and Hospital had initially adopted the NICE guidelines, whereas Our Lady's Children's Hospital, Crumlin, has chosen the AHA/BSAC/Australian guidelines. After internal discussion, Cork Dental School may now decide to follow the AHA/BSAC guidelines also. Adding to the confusion in this matter is the fact that at present Ireland does not have a Chief Dental Officer to help co-ordinate the different stakeholders and provide a national guideline.

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#### Table 1: AHA.

Antibiotic prophylaxis prior to invasive dental treatment should be given to patients with a history of:

- prosthetic cardiac valve;
- previous infective endocarditis;
- ardiac transplantation recipients who develop cardiac valvulopathy; and,
- congenital heart disease (CHD),\* including:
  un-repaired cyanotic CHD, including palliative shunts and conduits;
  completely repaired congenital heart defect with prosthetic material or
  device, whether placed by surgery or by catheter intervention, during the first
  six months after the procedure;† and, repaired congenital heart defect with
  residual defect at the site or adjacent to the site of a prosthetic patch or a
  prosthetic device (which inhibits endothelialisation).

\*Except for the conditions listed above, antibiotic prophylaxis is no longer recommended for any other form of CHD.

†Prophylaxis is recommended for the first six months because endothelialisation of prosthetic material occurs within six months after the procedure and then prophylaxis is unnecessary.

#### Table 2: AHA.

Dental procedures for which endocarditis prophylaxis is recommended:

all dental procedures that involve manipulation of gingival tissue or the periapical region of teeth, or perforation of the oral mucosa.

#### The following procedures and events do not need prophylaxis:

routine anaesthetic injections through non-infected tissue, taking dental radiographs, placement of removable prosthodontic or orthodontic appliances, adjustment of orthodontic appliances, placement of orthodontic brackets, shedding of deciduous teeth, and bleeding from trauma to the lips or oral mucosa.

Evidence-based recommendations in this area are most welcome. The revision of previous guidelines will facilitate research in this area where a randomised, controlled clinical trial was deemed to be unethical in the past.

#### **Position statement**

We, the authors, following our review of the literature, are advocating antibiotic prophylaxis for the cardiac conditions outlined in the BSAC/AHA guidelines (**Table 1**). We also advocate the AHA list of procedures requiring prophylaxis for these particular patients (**Table 2**). The prophylactic regime we recommend, for pragmatic reasons and to avoid confusion, is that of the British Society for Antimicrobial Chemotherapy (BSAC 2006) (**Table 3**).

#### Discussion

Dental procedures have long been associated with/implicated in the development of IE. In 1885, Osler associated bacteraemia from surgery with IE.<sup>2</sup> Later, in 1935, Okell and Elliott linked bacteraemia with dental extractions.<sup>2</sup> Since then, numerous studies have linked dental treatment with bacteraemias and there have been numerous case reports linking dental procedures and IE, but no absolute cause and effect relationship has been established.

#### Pathogenesis of infective endocarditis

IE is an uncommon but life-threatening infection.<sup>2</sup> It is an inflammation of the endocardium, particularly affecting the heart valves, due to bacteria and other infectious agents. It is rare, with an annual incidence of <10 per 100,000 cases in the normal population, yet it is associated with significant mortality (approx 20%) and morbidity. The predisposing factors have changed in the last 50 years, with the decreasing incidence of rheumatic fever and the increasing numbers of prosthetic heart valves and intravenous drug abusers.<sup>5</sup>

Table 3: BSAC 2006. Antibiotic prophylaxis for dental procedures.										
Population	>10 years	5-10 years	<5 years	Timing of dose before procedure						
General	amoxicillin 3g po	amoxicillin 1.5g po	amoxicillin 750mg po	1h						
Allergic to penicillin	clindamycin 600mg po	clindamycin 300mg po	clindamycin 150mg po	1h						
Allergic to penicillin and unable to swallow capsules	azithromycin 500mg po	azithromycin 300mg po	azithromycin 200mg po	1h						
Intravenous regimen expedient	amoxicillin 1g iv	amoxicillin 500mg iv	amoxicillin 250mg iv	Just before the procedure or at induction of anaesthesia						
Intravenous regimen expedient and allergic to penicillin	clindamycin 300mg iv*	clindamycin 150mg iv *	clindamycin 75mg iv *	Just before the procedure or at induction of anaesthesia						

\*Given over at least 10 min.

Where a course of treatment involves several visits, the antibiotic regimen should alternate between amoxicillin and clindamycin. Pre-operative mouth rinse with chlorhexidine gluconate 0.2% (10ml for 1 min).

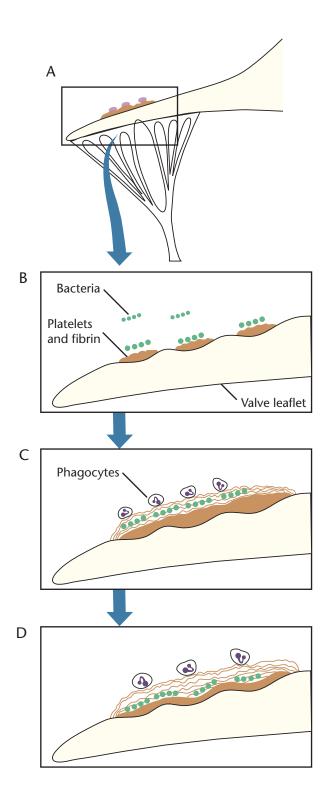


FIGURE 1: Development of valve vegetation in infective endocarditis. Source: **Underwood**. General and Systemic Pathology.<sup>7</sup>

- (A) Deposit of platelets + fibrin on an endocardial abnormality on a heart valve.
- (B) Bacteraemia results in adherence of bacteria to thrombus.
- (C) Phagocytes adhering to the thrombotic deposit.
- (D) Deposition of further platelets and fibrin.

The development of IE can be summarised as follows (Figure 1):

- turbulent blood flow, seen in heart defects, can traumatise the endothelium;
- exposed endothelium predisposes to the localised deposition of platelets and fibrin (A). This deposit is called a non-bacterial thrombotic endocarditis (NBTE);
- a blood-borne (B) micro-organism (bacteraemia) may then colonise this NBTE;
- certain staphylococci, streptococci and enterococci, among others, have critical adhesion;
- proliferation of these microorganisms forms a vegetation (C), ultimately leading to the destruction of the valve; and,
- the valves are an immune privileged location as they are avascular. Any congenital or acquired heart defect associated with turbulent blood flow or damaged epithelium may predispose to the development of IE.<sup>2</sup> The AHA has determined conditions with the highest risk of developing IE (**Table 1**).

The NICE guidelines suggest that healthcare professionals should regard people with certain cardiac conditions (**Table 4**) as being 'at risk' of developing IE. The presence of a prosthetic material not only increases the chances of developing IE but also increases the severity of the infection. *Viridans* group streptococci IE usually carries a mortality of 5% but this increases to 20% if a prosthetic valve is infected.<sup>2</sup> It is difficult to quantify the risk, if any, of developing IE with simple heart murmurs or a history of rheumatic fever. For the purposes of reviewing the available evidence, NICE decided not to stratify people into different levels of risk but to classify individuals as "at risk" or "not at risk", while still emphasising that, although the relative risk of different cardiac conditions to each other is unknown, prosthetic valve patients are at increased risk compared to any other group condition.

#### Causes of oral flora bacteraemia

Mucosal surfaces are populated by a dense endogenous microflora. Trauma to the oral mucosa releases many microbial species into the bloodstream.<sup>2</sup> Approximately 100 species of bacteria (mostly *viridans* streptococci) can be demonstrated in blood cultures following dental procedures. *Viridans* streptococci are the most common microbiological cause of community-acquired IE, excluding in intravenous drug abusers.<sup>2</sup>

Bacteraemia occurs with nearly all procedures that involve manipulation of the gingival tissues. This includes extractions, scaling, rubber dam clamps and probing, but also includes everyday procedures such as brushing, flossing and chewing food.<sup>2</sup>

Bacteraemia from dental procedures and routine daily activities such as brushing and eating has been calculated at  $10^4 \text{CFU}.^2$ 

The bacteraemia needed to cause experimental IE in animals is nearly double this (10<sup>6</sup>-10<sup>8</sup>CFU). The importance of the duration of the bacteraemia is uncertain. Following an extraction, blood cultures are positive for 10 minutes and drop sharply after this. Guntheroth calculated that a patient is exposed to over 5,000 minutes of bacteraemia per month due to normal daily activity compared to 30 minutes for an extraction.<sup>2</sup> Roberts estimated that tooth brushing twice daily for one year had a 154,000 times greater risk of exposure to

Table 4: Comparison of 'at risl	k' cardiac conditions		
AHA	BSAC		NICE
Prosthetic cardiac valves	Mechanical or biological cardiac valve replacement	Prosthetic cardiac valve or prosthetic material used for cardiac valve repair	Valve replacement
Previous IE	Previous IE	Previous IE	Previous IE
Congenital heart disease (CHD):  unrepaired cyanotic CHD, including palliative shunts and conduits;  completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first six months after the procedure; and,  repaired congenital heart defect with residual defect at the site or adjacent to the site of a prosthetic patch or device (which inhibits endothelialisation).	Surgically constructed systemic or pulmonary shunt or conduit	Congenital heart disease (CHD):  unrepaired cyanotic CHD, including palliative shunts and conduits;  completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first six months after the procedure; and, repaired congenital heart defect with residual defect at the site or adjacent to the site of a prosthetic patch or device (which inhibits endothelialisation).	Structural congenital heart disease (CHD) including surgically corrected or palliated structural conditions, but excluding:  isolated atrial septal defect; fully repaired ventricular septal defect; fully repaired patent ductus arteriosus; and, closure devices that are judged to be endothelialised.
		Cardiac transplantation with the subsequent development of cardiac valvulopathy	Hypertrophic cardiomyopathy
		Rheumatic heart disease in indigenous Australians only	Acquired valvular heart disease with stenosis or regurgitation

bacteraemia than that resulting from a single extraction, and that exposure to bacteraemia from routine daily activities may be 5.6 million times greater than a single extraction.<sup>2</sup>

It has also been assumed that poor oral hygiene is associated with increased frequency, nature, magnitude and duration of bacteraemia. The European Society of Cardiology (ESC) and The British Society of Antimicrobial Chemotherapy (BSAC) guidelines also agree that bacteraemia can occur following routine oral activities. The AHA acknowledged that there is little evidence in the literature discussing the magnitude of a bacteraemia after dental work or routine oral activities and the small number of studies undertaken on this subject have used dated microbial methodology. Opposed to this, the British Cardiology Society (BCS) stated that the risk of developing IE is directly related to the frequency and magnitude of each bacteraemia. No studies were found that investigated whether nondental activities such as urination and defecation caused a bacteraemia and, if so, what the magnitude was.

In all studies considered, the methodology for collecting bacterial samples varied and therefore the studies were hard to compare directly. NICE concluded that bacteraemia occurs spontaneously, by tooth brushing and by many procedures including dental, GI, urological, obstetric, oral surgery, ear, nose and throat and respiratory.

The Guideline Development Group (GDG) decided that tooth brushing would be a greater risk than one dental procedure for IE to develop as this was an everyday activity and repetitive in nature. NICE concluded that there was no available evidence to link level, frequency and duration of bacteraemia with IE developing.

#### Rationale for antibiotic prophylaxis to prevent IE

The AHA first introduced prophylaxis guidelines in 1955 and has updated them regularly since then. As randomised controlled human studies in this area have not been ethical until now, not to mention the difficulty involved in designing such a complex study, guidelines to date had to be empirical.

The AHA introduced these guidelines in 1955 because:

- prevention of IE is better than cure;
- certain cardiac conditions predispose to IE;
- bacteraemia with IE-causing microorganisms occurs with dental procedures;
- antibiotic prophylaxis has been effective in preventing experimental IE in animals;
- antibiotic prophylaxis was thought to be effective in humans;
- case reports link dental procedures with the onset of IE;
- the risk of adverse reactions with antibiotic use is low; and,
- morbidity and mortality associated with IE is significant.

The AHA has proposed and updated guidelines in this area since 1955. The list of cardiac conditions, dental procedures and antibiotic regimes has expanded since then. It is worth noting that in 1990 the AHA suggested that their recommendations were to serve as guidelines and not as established standard of care. This was due to the potential medicolegal risks associated with IE prophylaxis. The 1997 guidelines also acknowledged that most cases of IE are not attributable to an invasive procedure but rather are the result of randomly occurring bacteraemias from routine daily activities.

АНА	BSAC		NICI
All dental procedures that involve	All dental procedures involving	Prophylaxis always required:	Non
manipulation of gingival tissue or the	dento-gingival manipulation	extraction;	
periapical region of teeth, or perforation		■ periodontal procedures including surgery, subgingival scaling and	
of the mucosa		root planing;	
		■ replanting avulsed teeth; and,	
		other surgical procedures (e.g., implant placement, apicectomy).	
		Prophylaxis required in some circumstances:	
		Consider prophylaxis for the following procedures if multiple	
		procedures are being conducted, the procedure is prolonged or	
		periodontal disease is present:	
		■ full periodontal probing for patients with periodontitis;	
		■ intraligamentary and intraosseous local anaesthetic injection;	
		supragingival calculus removal/cleaning;	
		■ rubber dam placement with clamps (where risk of	
		damaging gingiva);	
		restorative matrix band/strip placement;	
		endodontics beyond the apical foramen;	
		placement of orthodontic bands;	
		placement of interdental wedges; and,	
		subgingival placement of retraction cords, antibiotic fibres or	
		antibiotic strips.	
****The following procedures and events		Prophylaxis not required in:	
do not need prophylaxis: routine		oral examination;	
anaesthetic injections through non-		■ infiltration and block local anaesthetic injection;	
nfected tissue; taking dental radiographs;		restorative dentistry;	
placement of removable prosthodontic or		supragingival rubber dam clamping and placement of rubber dam;	
orthodontic appliances; adjustment of		■ intracanal endodontic procedures;	
orthodontic appliances; placement of		■ removal of sutures;	
orthodontic brackets; shedding of		■ impressions and construction of dentures;	
deciduous teeth; and, bleeding from		orthodontic bracket placement and adjustment of fixed appliances;	
trauma to the lips or oral mucosa.		application of gels;	
		■ intraoral radiographs; and,	
rauma to the lips of oral mucosa.			

#### **Antibiotic prophylactic regimen**

There are now a vast number of different antibiotic prophylactic cocktails (**Table 6**) depending on the apparent risk of developing IE and the anaesthetic type. In general practice the AHA recommends 2g of amoxicillin orally one hour before treatment, while the BSAC recommends 3g instead. If the patient is allergic to penicillin 600mg, clindamycin orally one hour before treatment is advised.

Studies have shown that amoxicillin reduced the incidence, nature and duration of a bacteraemia but did not eliminate it. There is no evidence to show that this reduction was beneficial in preventing IE. Van der Meer (1992) stated that even if antibiotic prophylaxis was 100% effective, it might only prevent a very small number of IE cases.<sup>2</sup>

Antibiotics may lead to unwanted side effects such as an allergy, diarrhoea, gastrointestinal upset and, most importantly, potentially fatal anaphylactic reactions. Fatal anaphylactic reactions have been estimated at 15-25 patients per million receiving penicillin.<sup>2</sup> This estimate was made

(including IV administration) for treatment of many different types of conditions, not just IE prophylaxis, via all routes. Penicillin has been the drug of choice recommended by the AHA for 50 years. It is therefore surprising to see that during this 50-year period, the AHA is unaware of any cases of fatal anaphylaxis resulting from the administration of a penicillin recommended in the AHA guidelines.<sup>2</sup>

The current exposure to GlaxoSmithKline amoxicillin, since the product's launch, is >2,021 million patient treatments. There is a report of only one case of fatal anaphylaxis following administration of a single dose of 3g amoxicillin orally on the GlaxoSmithKline Global data sheet. The antibiotic in this case was not given for endocarditis prophylaxis. Five further verified reports of anaphylactic shock were noted. However, in these cases the patients were treated and subsequently recovered. The Irish Medicines Board found no cases of anaphylaxis in Ireland relating to oral penicillin administration (personal communication, IMB).

	AHA	BSAC		NICE
Routine	Amoxicillin 2g	Amoxicillin 3g	Amoxicillin 2g	None
Child	50mg/kg	1.5mg/kg	50mg/kg	
Unable to take oral medication	Ampicillin 2g IM/IV	Amoxycillin 50mg/kg IM/IV	Amoxy/ampicillin 2g IV or IM 30 minutes before procedure	None
Child	50mg/kg IM/IV		50mg/kg IV	
OR	Cefazolin or ceftriaxone 1g IM/IV			None
Child	50mg/kg IM/IV			
Routine but allergy to penicillin	Clindamycin 600mg	Clindamycin 600mg	Clindamycin 600mg	None
Child	20mg/kg	300mg	15mg/kg	
OR	Cephalexin 2g		Lincomycin 600mg IV over 1 hour	None
Child	50mg/kg		15mg/kg	
OR	Azithromycin or clindamycin 500mg		Vancomycin 25mg/kg up to 1.5g IV	None
Child			by slow infusion over 60 minutes	
			30mg/kg	
OR			Teicoplanin 400mg IV, or IM 30	
Child			minutes beforehand	
			10mg/kg	
Allergy to penicillins or	Cefazolin or ceftriaxone 1g IM or IV	Azithromycin 500mg po		None
ampicillins and unable to take				
oral medication				
Child	50mg/kg IV/IM	300mg		
OR	Clindamycin 600mg IM or IV			None
Child	20mg/kg IV/IM			
IV expedient		Amoxicillin 1g IV over 10 min		
Child		500mg IV		
IV and allergic to penicillin		Clindamycin 300mg IV		
Child		150mg IV		

#### Reason for review of guidelines

The last AHA guidelines regarding antibiotic prophylaxis of IE were published in 1997; therefore, an update was necessary. Upon review of the literature, the level of evidence was deemed to be level C (i.e., only consensus of opinion of experts, case studies or standard of care) and the recommendations were class 2b (i.e., usefulness/efficacy is less well established by evidence/opinion) using the American College of Cardiology Foundation and American Heart Association Task Force on Practice Guidelines.

Since evidence-based medicine and dentistry has become the standard of care, many clinicians have questioned why an unproven antibiotic prophylactic regimen is still practised, especially in the present climate of antibiotic over-prescription and microbial resistance.

The British Society of Antimicrobial Chemotherapy (BSAC) revised their guidelines in 2006 but the British Cardiac Society (BCS) (Advisory of the BCS Clinical Practice Committee 2004) were dissatisfied with these proposals, as they only dealt with high risk patients and were deemed confusing for cardiologists, dentists and patients. In response, the BCS and the UK Department of Health arranged for NICE to review the issue fully. A committee composed of cardiologists, cardiac surgeons, a dentist, microbiologists,

pharmacists, other medical professionals and patient representatives was established. Their recommendations were made on the basis of both clinical evidence and cost effectiveness. No other guidelines have ever considered cost. They reviewed the need for antibiotic prophylaxis in patients undergoing dental and non-dental procedures, and their recommendations are based on systematic reviews of the best available evidence.

#### **Position statement**

Prevention of dental disease cannot be over-emphasised in patients at risk of developing IE. Those at risk include patients with prosthetic cardiac valves, previous IE, cardiac transplantation recipients who develop cardiac valvulopathy and some CHD patients with unrepaired cyanotic CHD, including palliative shunts and conduits, completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first six months after the procedure, or repaired congenital heart defect with residual defect at the site or adjacent to the site of a prosthetic patch or a prosthetic device. Chlorhexidine mouthwash should be used five minutes before the start of a procedure.

We are advocating that patients with these cardiac conditions (**Table 1**), undergoing the dental procedures (**Table 2**) should be covered by antimicrobial prophylaxis with 3g oral penicillin or 600mg clindamycin if an allergy to penicillin exists, echoing the BSAC guidelines of 2006 (**Table 3**). The recommended 2g as opposed to 3g amoxicillin is open to discussion. The BSAC guidelines advocated 3g amoxicillin preoperatively supported by animal research, and to avoid confusion we are advising continuation with the 3g of amoxicillin cover.<sup>10</sup>

#### Conclusion

The AHA Guidelines 2007, NICE Guidelines 2008 and Australian guidelines have clearly set out all the current evidence in relation to IE including its causes, risk factors, and current thinking on needs and methods for prophylaxis. These, in turn, have stimulated a lot of debate between dentists, cardiologists and patients. Problems likely to be encountered in the future include explaining to patients who have received antibiotic prophylaxis all their lives why it is no longer required.

Clear information is necessary for patient reassurance. The reason for the changes in current practice will need to be explained in a consistent manner to long-term patients who have received cover in the past. The NICE guidelines have abolished the need for any antibiotic prophylaxis in patients at risk of IE. The AHA guidelines state that while antibiotic cover has no proven benefit, it is prudent to cover only those patients deemed to be at the greatest risk of developing IE (Table 1). Should there be any confusion, a discussion with the patient's doctor/cardiologist will confirm if the patient falls under the conditions listed in Table 1.

The cardiologists in Our Lady's Children's Hospital, Crumlin, have chosen the AHA guidelines. The Dublin Dental School and Hospital has accepted the position statement outlined above. The University College Cork Dental School and Hospital originally adopted the NICE guidelines but, following internal debate, is considering moving to the above position statement.

As there is no Chief Dental Officer in Ireland, The Dublin Dental School and Hospital has recommended to the Dental Council Education Committee the need for a consensus document with cardiologists and cardiac surgeons. Review of the literature shows a low risk of anaphylaxis associated with the use of a single dose of oral amoxicillin and we, the authors, are advocating the AHA and Australian guidelines subject to the Dental Council's considerations. Despite the lack of evidence in favour of antibiotic prophylaxis, the abolition of these longstanding guidelines as laid out in the NICE document may be a step too far, since no randomised prospective trials have been undertaken. With this in mind, the authors see the implementation of the AHA/Australian guidelines as the more sensible choice. However, patient confusion and clinical conflict needs to be minimised and consideration needs to be taken in each case, as no one solution fits all. This debate will now enable prospective research to be conducted in this area and trials are in progress. This will hopefully result in the development of more evidence-based guidelines in the future.

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# **Dentists in the DTSS between** July 2007 and July 2008

#### **Précis**

The numbers of contracting dentists in the DTSS are categorised by level of activity from July 2007 to July 2008.

#### Abstract

Recent attention in the media concerning the Dental Treatment Services Scheme (DTSS) centres on the number of contracting dentists as a surrogate measure of the availability of services to adult medical card holders in the Republic of Ireland. Aim: To determine the trend in the number of contracting dentists on the DTSS panel during the year 07/'07 to 07/'08.

Methods and data: Data were extracted from the database of monthly claims for remuneration, submitted by providers, which is held by the HSE.

Results: The average number of contractors was 1,258. The trend over the year was a reduction of 1.6% in contractor numbers. The average number of 'active' contractors was 833. The trend over the year was a reduction in 'active' contractor numbers of 6.2%. In any month, approximately 34% of contracting dentists were not active. Conclusions: The trend in the number of contracting dentists was a poor indicator of the trend in availability of services to medical card holders. A better approach would be to count the number of 'active' contractors, in conjunction with their geographic spread and medical card holder density.

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The focus of what media attention the Dental Treatment Services Scheme (DTSS) commands is on the trend in the number of dentists who hold contracts to provide services. This trend has been used as a surrogate for the trend in the availability of, access to and utilisation of services. This approach is based on the assumption that all current contracting dentists are active providers. This study challenges that assumption and suggests another approach.

#### Introduction

# Study aims

The aims of the study were to answer the following questions concerning the DTSS:

- 1. What is the trend in the number of dentists holding contracts from July 2007 to July 2008?
- 2. What is the trend in the number of 'active' dentists from July 2007 to July 2008?
- 3. What is the trend in the number of 'more active' dentists from July 2007 to July 2008?

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Table 1: The number of contracting dentists, by month, in the DTSS from July 2007 to July 2008.													
Contractor category	Jul '07	Aug '07	Sept '07	Oct '07	Nov '07	Dec '07		Feb '08	Mar '08	Apr '08	May '08		
HSE only contract	199	198	199	202	202	202	202	203	201	201	202	203	204
Private practitioners	1110	1061	1044	1041	1032	1042	1035	1049	1046	1055	1072	1078	1084
Total	1309	1259	1243	1243	1234	1244	1237	1252	1247	1256	1274	1281	1288

Table 2: The number and percentage of contracting dentists, who made at least one claim for remuneration in that month, from July 2007 to July 2008.

Contractor category	Jul '07	Aug '07	Sept '07	Oct '07	Nov '07	Dec '07		Feb '08	Mar '08	Apr '08	May '08		Jul '08
HSE only contract	5	5	3	6	2	5	10	2	3	4	2	3	4
Private practitioners	894	860	869	852	874	766	808	801	805	795	803	804	839
Total	899	865	872	858	876	771	818	803	808	799	805	807	843
% of contractors	69%	69%	70%	69%	71%	62%	66%	64%	65%	64%	63%	63%	65%

#### Data

The number of contractors and the number of claims made each month from July 2007 to July 2008, inclusive, were extracted from the database of monthly claims for remuneration submitted by contracting dentists. This database is maintained by the Primary Care Reimbursement Service. Data was provided electronically in the form of Excel spreadsheets in September 2008.

#### **Methods**

A dentist was considered to be a contracting dentist if he/she held a contract in that month with the HSE to provide oral healthcare services in the DTSS. Contracting dentists fell into two groups: private practitioners and salaried HSE employees.

A contracting dentist was categorised as 'active' in a month if he/she made at least one claim for remuneration in that month. Here an assumption of service provision in the previous month can be made, as the contract stipulates "within one month of completion of the treatment the contracting dentist ... shall claim payment".

A contracting dentist was categorised as 'more active' in a month if he/she made at least ten claims for remuneration in that month. Here an assumption of service provision in the previous month can also be made.

#### Results

#### Number of dentists holding contracts

**Table 1** shows the number of contracting dentists, by month, in the DTSS from July 2007 to July 2008. The average number of contractors per month was 1,259 (SD=22.5), of whom 201 were HSE salaried.

The trend over the study period was a reduction of 21 contractors, or 1.6%. It is interesting to note a fall of 4.9% between July 2007 and December 2007, followed by a rise of 4.1% from January 2008 to July 2008. The trend indicates volatility in contractor numbers during the study period.

#### Number of 'active' dentists

Table 2 shows the number of contracting dentists, by month, who made at least one claim in that month. The average number per month in this category was 833 (SD=38.4) contractors, of whom an average of four were HSE dentists. The change over the study period was a reduction of 56 contractors in this category, or 6.2%. There was a reduction in contractor numbers in this category of 14.2% from July 2007 to December 2007, followed by an increase of 3% from January 2008 to July 2008. Therefore, the trend in the number of 'active dentists' mirrors that of the number of dentists holding contracts, except that the fall in this category between July 2007 and December 2007 was steeper.

#### Number of 'non-active' dentists

The number of dentists who held a contract but were not active in a particular month can be arrived at by subtracting the number of contracting dentists who made a claim, from the total who held contracts for that month. The results are shown in **Table 3**. Surprisingly, an average of 426 contracting dentists (34%) did not make a claim in any one month. There was an 8.5% increase in the number of contractors in this category over the study period. The month of least activity was December 2007 and the most active was November 2007. This may be an administrative artifact (the deadline for claims is brought forward in December). The vast majority of HSE dentist contractors (196) were not active in submitting claims in the DTSS.

#### Number of 'more active' dentists

Table 4 shows the number and percentage of contracting dentists, by month, making at least ten claims in that month. The average was 707 (SD = 32) contractors. There was a reduction of 2.9% of contractors in this category of providers during the study period. The percentage of dentists in this category varied from 58% to 50% of contractors. The 50% refers to December 2007 and may be considered an administrative artifact. Excluding this month, the percentage was between 58% and 55% of contractors.

Table 3: The number and percentage of contracting dentists, who did not make any claim for remuneration in that month, from July 2007 to July 2008 inclusive.

Jul '07	Aug '07	Sept '07	Oct '07	Nov '07	Dec '07		Feb '08	Mar '08	Apr '08	May '08		
410	385	385	385	358	473	419	449	439	457	469	474	445
31%	31%	31%	31%	29%	38%	34%	36%	35%	36%	37%	37%	35%

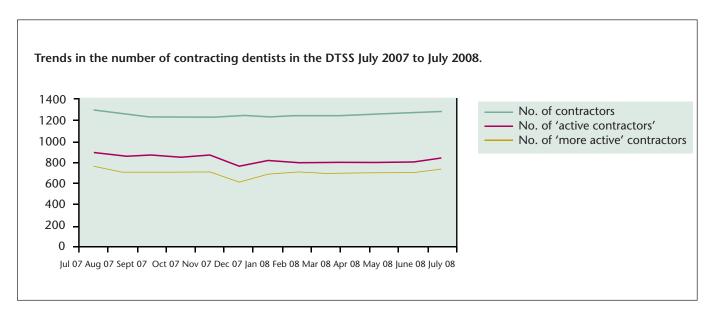
Table 4: The number and percentage of contracting dentists who made ten or more claims in that month between July 2007 and July 2008.

Contractor category	Jul '07	Aug '07	Sept '07	Oct '07	Nov '07	Dec '07		Feb '08	Mar '08	Apr '08	May '08		Jul '08
HSE dentists	1	1	0	1	0	1	4	0	1	1	0	0	1
Private practitioners	763	712	716	711	715	619	685	709	700	700	707	708	741
Total	764	713	716	712	715	620	689	709	701	701	707	708	742
As % of contractors	58%	57%	58%	57%	58%	50%	56%	57%	56%	56%	56%	55%	58%

#### **Discussion**

The focus of this study was on the trend in the number and activity of contracting dentists in the DTSS. Please note that the data presented in this paper was collective rather than individualised, i.e., it did not represent the behaviour of any one contracting dentist but represented the sum of behaviours during the time under consideration. Any consideration concerning the issue of the geographic distribution of contracting dentists was beyond the scope of this study. Combining Tables 1, 2, 3 and 4 into Figure 1 permits the assessment of contractor number trends. The number of contracting dentists reduced by 1.6% in the year from July 2007 to July 2008. However, the simple number of contracting dentists conveys little information on service availability, access to services, or utilisation, because the number of contracting dentists who were not active in a month varied from 29% to 37% of contractors. A far better measure would be a count of the number of active dentists, in combination with their geographic spread and medical

card population density. Activity could be defined as the submission of at least one claim, or at a higher level, for example, ten or more claims, per month. Both definitions were used in this paper. The study indicates that there was a reduction of 6.2% in 'active' contractor numbers and a reduction of 2.9% in 'more active' contractor numbers. This approach would allow a better and more accurate insight into changes in the DTSS provider workforce and whether or not the assumptions made in the supply model would continue to be valid. It is suggested that the adoption of this simple practice would lead to clarity and focus when these issues are considered by stakeholders in the DTSS.



# Quality assurance in dental radiography: intra-oral image quality analysis

#### **Précis**

This article looks at the basics of image quality analysis and the quality standards for intra-oral radiographs.

#### Abstract

With the introduction of criteria for clinical audit by the Irish Dental Council, and the statutory requirement on dentists to introduce this into their practice, this article will introduce the basic concepts of quality standards in intra-oral radiography and the subsequent application of these standards in an image quality audit cycle. Subjective image quality analysis is not a new concept, but its application can prove beneficial to both patient and dental practitioner. The ALARA (as low as reasonably achievable) principle is fundamental in radiation protection, and therefore the prevention of repeat exposures demonstrates one facet of this that the dental practitioner can employ within daily practice.

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#### Introduction

Quality assurance in dental radiology is not a new concept in many countries. It is, however, something that is now being addressed here in Ireland as part of the implementation of S.I. 478 of 2002.¹ The Irish Dental Council has now published a set of criteria for clinical audit, one of these being image quality.² Almost 14 years ago, the National Radiological Protection Board (NRPB), in association with the Royal College of Radiologists, introduced guidelines on radiological standards for primary dental care within the United Kingdom.³ Within these guidelines, the

methodology of film reject analysis was introduced, yet this is something that dental practitioners do every day. We all decide when a radiograph should be retaken to capture the diagnostic information required for diagnosis or treatment planning every day of our practising lives. What the guidelines did, however, introduce, was the principle that we should be recording the reasons for our faults and analysing these records to determine how we can improve.<sup>3</sup> The purpose of any quality assurance programme in dental radiology is to ensure that we as practitioners achieve consistently

acceptable radiographs, with sufficient diagnostic information, while keeping the radiation dose to the patient as low as possible.<sup>3</sup> Any quality assurance programme should be inexpensive to operate, unobtrusive and easily maintained. The monitoring of image quality is therefore an ideal component to any dental radiological quality assurance programme.

In 2004, the European Commission published its 'European guidelines on radiation protection in dental radiology'. <sup>4</sup>These cited the principles already outlined by the NRPB.<sup>3</sup>

#### **Grading radiographs**

The NRPB recommended that dentists assess the quality of their radiographs as falling into one of three categories.3 The criteria for these three categories are outlined in Table 1. By definition, radiographs falling into Grade 3 are those that should be retaken. The category into which each radiograph falls is purely subjective, although the fact that a practitioner has to retake a particular radiograph will automatically assign it to category 3. With these categories, the NRPB suggested that practitioners should aim to have no more than 10% of their radiographs falling into the Grade 3 category.3 This target of 10% retakes appears to be very achievable when studies that have looked at retake rates are considered.<sup>5,6</sup> However, a study carried out in England looking at the quality of intra-oral radiographs from a selection of general dental practitioners, revealed that up to 49% of images were of an unacceptable standard.7 The same author also looked at the quality of panoramic images from a similar sample of practices, and found that 33% fell into the Grade 3 category.8 Panoramic radiographs, however, are generally more prone to errors in positioning and errors created by the projection itself and will not be covered here. Experience of practitioners also appears to have an influence on the number of radiographs that require re-exposure. Two studies looking at the re-exposure rates of staff members and students in dental teaching facilities showed that the retake rates for the staff members were much lower than those encountered within the student population.5,6

As the appraisal of radiographic image quality should be an ongoing feature of any quality assurance programme, it has been suggested that practitioners should aim to reduce their number of Grade 3 radiographs by 50% at each subsequent audit.<sup>4,9</sup>

The other categories for image quality, Grades 1 and 2, have also been assigned target levels to which a practitioner should aspire. **Table 2** illustrates these targets. It should be clarified that these target levels are not evidence based, but provide a framework on which the image quality assessment can be carried out.<sup>4</sup>

#### **Quality standards for dental radiographs**

The European guidelines<sup>4</sup> outline a series of quality standards for the projections frequently used by dental practitioners. These standards can be applied to each radiograph as part of the subjective analysis and the resultant grading of the image quality. **Table 3** outlines the standards expected of intra-oral radiographs. These standards are not an exhaustive list and provide a basis upon which the practitioner can

Table 1: Categories used to grade the image quality of dental radiographs.<sup>3</sup>

Grade	Standard	Description					
1	Excellent	Excellent, demonstrating no faults in positioning or processing.					
2	Acceptable	Demonstrating some faults in technique or processing. These faults do not, however, detract from the diagnostic value of the radiograph.					
3	Unacceptable	Demonstrating faults, which, by their magnitude or nature, render the radiograph of no diagnostic value.					

Table 2: Targets for image quality as part of a quality assurance programme.

Image quality grade	Interim target	Target
1 (Excellent)	Not less than 50%	Not less than 70%
2 (Acceptable)	Not greater than 40%	Not greater than 20%
3 (Unacceptable)	Not greater than 10%	Not greater than 10%

## Table 3: Quality standards for intra-oral dental radiographs. (Adapted from 'The European guidelines for radiation protection in dental radiology'.4)

#### Quality standards common to both peri-apical and bitewings:

- No evidence of bending of the film;
- No foreshortening or elongation of the resultant image;
- Good contrast, with clear definition of enamel and dentine on the radiograph;
- No evidence of pressure marks, roller marks or emulsion scratches;
- No evidence of film fogging; and,
- No evidence of chemical splashes, inadequate fixation or inadequate washing of the film.

#### Quality standards for bitewings:

- No horizontal overlap; if present, this should ideally be restricted to less than half the width of the enamel (anatomical factors such as crowding and the shape of the arch may make this difficult or impossible);
- Ideally, the film should visualise from the distal of the canine to the mesial surface of the last tooth on that side; and,
- Bone levels should be visualised to equal amounts in both the maxillary and mandibular arches.

#### Quality standards for peri-apical films

- No horizontal overlap of root structures; if present, the overlap should not obscure the root canals or apical tissues; and,
- The film should demonstrate all of the tooth/teeth of interest and include 2-3mm of alveolar bone beyond the apex.



FIGURE 1: An example of a bitewing radiograph attaining most of the quality standards expected of this view.

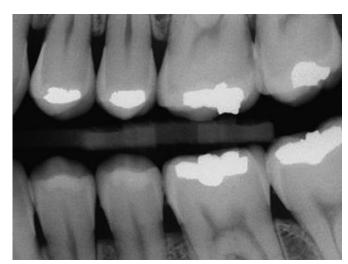


FIGURE 2: Another example of a good quality bitewing achieving a Grade 1 in an image quality audit.



FIGURE 3: A bitewing failing to achieve the quality standards expected.

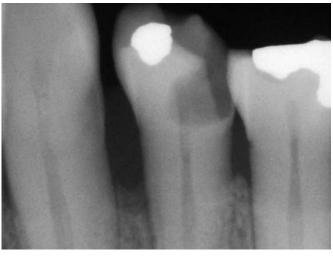


FIGURE 4: An example of a peri-apical of sufficient quality to achieve a Grade 1 quality rating.

then apply additional standards subject to the clinical situation with which they are faced. Readers are recommended to reference the complete document<sup>4</sup> for a full explanation of these quality standards and further information on the subject. Figures 1 and 2 show examples of bitewing radiographs demonstrating most of these standards and could therefore be categorised as Grade 1. There are several small radio-opaque lines visible on the image in Figure 1 caused by scratches on the phosphor plate, but these do not detract from the quality of the image. Figure 3, in contrast, shows a bitewing radiograph that fails to meet many of the quality standards outlined. Many of the contact points overlap, making caries diagnosis difficult, and the image also fails to demonstrate the lower right first premolar (44) and the maxillary bone levels adequately. This example might gain a Grade 2 depending on the information from the clinical

examination, but from a radiographic point of view a Grade 3 would be justified. This bitewing shows evidence of inadequate positioning of the film, and the failure to demonstrate the maxillary bone levels may be due to a fault in the vertical angulation of the x-ray tube. Careful alignment of the x-ray tube with the film holder or beam aiming device would improve the geometry of the image, both in terms of the film tube angulation, but also the overlapping of the contact points. Figures 4 and 5 show peri-apical radiographs of a lower left first premolar (34) and a lower right first premolar (44), respectively; by applying the quality standards defined in Table 3 these radiographs fulfil most if not all of the standards expected of a peri-apical, and can be categorised as Grade 1. Figure 6 unfortunately fails when compared against these standards and is worthy of a Grade 3, and would need to be retaken to provide any useful diagnostic



FIGURE 5: Another example of a Grade 1 peri-apical.



FIGURE 6: An example of a peri-apical demonstrating few of the quality standards expected for this view.



FIGURE 7: Peri-apical radiograph demonstrating 'coning off' due to poor x-ray tube positioning.



FIGURE 8: Excessive pressure from the patient's finger has resulted in the radiographic image being distorted.

information. In order to improve this image, the use of a film/sensor holder and beam aiming device would enhance the image and increase the likelihood of capturing the teeth under investigation. This particular image was taken using a CCD (charge coupled device) type digital sensor. Due to their size, these sensors can often be difficult to position, especially if local anatomy compromises the positioning of the sensor in the correct area. There are, however, sensor holders with beam aiming devices specifically designed for these sensors. The image is also rather lacking in contrast and appears underexposed. Figure 7, a peri-apical of the upper right molar region, demonstrates 'coning off' of the film due to inaccurate x-ray tube positioning. This radiograph would, however, still be graded as a Grade 2 in any image quality audit, as it still allows the practitioner to visualise the retained root of the upper second molar (17), thus providing the diagnostic

information required. The quality of the image could, however, be improved with the use of a beam aiming device. **Figure 8** demonstrates bending of the film, a fault commonly seen when patients are asked to hold a film in the mouth with their finger. In this case the root of the upper right central incisor has been distorted due to the bend in the film. Again the fault would not have occurred if a film holder had been used for the exposure.

#### **Discussion**

It has been suggested that this framework be applied as part of a clearly defined regime of image quality analysis, carried out either prospectively or retrospectively at fixed intervals of perhaps six or 12 months.<sup>3</sup> At the time of writing it is not clear whether a predefined time interval will form part of any quality assurance programme

introduced in Ireland. This suggested six-monthly audit cycle for image quality does not, however, obviate a practitioner from carrying out daily surveillance of their image quality and applying corrective actions as required.

Many of the examples used previously showed faults due to positioning errors of either the film or the x-ray tube. Rushton and Horner<sup>10</sup> showed that simple measures such as the introduction of film holders could have a significant effect on the improvement of image quality in general practice.

Practitioners must also be aware of the benefits and limitations of any particular system they are using; for instance, with digital systems it is possible to improve brightness and contrast without having to retake any particular radiograph. This is also true of film-based systems as, frequently, different film speeds and brands will have different contrast levels and sensitivities.<sup>11</sup>

The monitoring of our radiographic image quality is vital as part of any quality assurance programme looking at dental radiography. The resultant radiographic image is the end result of a series of processes: positioning the film or sensor within the patient's mouth; positioning the x-ray tube; setting the exposure factors; and, the development of the exposed film. A fault or inadequacy in any one of these processes will have a resultant effect on the image quality.

While the principle of auditing the quality of our images is simple and effective, it is not without its problems. A study by Rushton *et al* (2005)<sup>12</sup> found that final-year dental students within four months of their final exams scored poorly at identifying film faults in a sample of images. Although the study showed that they were unable to identify the faults present, they did, however, score well when asked how to correct the errors present. The study also highlighted that faults on intra-oral films were easier to identify than those on panoramics. This perhaps highlights the need for more education and training in the area of fault identification.

There is little doubt that the process of monitoring our image quality plays a vital role in quality assurance, and is also an integral part of radiation protection measures. The ability to produce quality radiographs benefits both patient and practitioner, and the implementation of image quality audit is the ideal tool to facilitate this. Like all audit tools, however, the ability to learn from one's mistakes is fundamental to making the process work.

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#### **ABSTRACTS**

#### Advances in power-driven pocket/root instrumentation

Walmsley, A.D., Lea, S.C., Landini, G., Moses, A.J.

#### **Objectives**

The primary aim was: 'Does power-driven pocket/root instrumentation offer a clinical advantage over hand instrumentation'? The secondary aim was to update the knowledge base of power-driven instrumentation post Tunkel *et al* (2002).

#### Material and methods

A literature search of power-driven instruments (*in vitro*, *in vivo* and controlled clinical trials) was performed from April 2001 using similar criteria to Tunkel *et al* (2002). The primary outcome sought was whether power-driven instruments offered an advantage over hand instrumentation; secondary outcomes were effect on root surface, effectiveness of new instrument designs, and role of biophysical effects such as cavitation.

#### Results

From a total of 41 studies, 14 studies involved comparison of power-driven devices with hand instrumentation for non-surgical therapy. These were subdivided into new designs of power instrumentation, full-mouth debridement and irrigation, and patient acceptance. Use of power-driven instrumentation provides similar clinical outcomes compared with hand instrumentation. Difficulty of pooling studies continues to hinder the drawing of definitive conclusions.

#### Conclusion

Newer designs of powered instruments have not shown any benefit when compared with other ultrasonic devices in non-surgical periodontal therapy. New *in vitro* research shows that there is variation in the performance of different tip designs and generators, but its clinical relevance remains unknown.

Journal of Clinical Periodontology 2008: 35 (Suppl.): 22-28.

## Practical application of anatomy for the dental implant surgeon

Greenstein, G., Cavallaro, J., Tarnow, D.

A proficient knowledge of oral anatomy is needed to provide effective implant dentistry. This article addresses basic anatomic structures relevant to the dental implantologist. Pertinent muscles, blood supply, foramen, and nerve innervations that may be encountered during implant procedures are reviewed. Caution must be exercised when performing surgery in certain regions of the mouth. Furthermore, numerous suggestions are provided regarding the practical application of anatomy to facilitate successful implant therapy.

Journal of Periodontology 2008: 79 (10): 1833-1846.

#### Assessment of enamel damage after removal of ceramic brackets

Kitahara-Céiaa, F.M.F., Muchab, J.N., Marques dos Santosc, P.A.

#### Introduction

Since the introduction of ceramic brackets, research has been performed to evaluate enamel damage caused during their removal. One problem in comparing treated and control groups is the absence of assurance that the surfaces were undamaged before the brackets were bonded and debonded, or that superficial treatment applied to the enamel could hinder damage detection. The aim of this *in vitro* study was to evaluate enamel injuries during debonding of three types of ceramic brackets.

#### Methods

Some 45 premolars, extracted for orthodontic purposes, were divided into three groups of 15. The enamel surfaces were photographed with a magnifying loupe (60 times) in an optical stereomicroscope (Stemi 2000-C, Zeiss, Oberkochen, Germany) with a digital camera. A different type of bracket was bonded and debonded in each group: mechanical retention; mechanical retention with a polymer base; and, chemical retention. After debonding, the surfaces were photographed again. The photographs were evaluated for quality of enamel surface according to a predetermined scale. The results were tested by method error and the chi-square test.



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#### **ABSTRACTS**

#### Results

The damage evaluation comparing the same surface before bonding and after debonding showed no significant statistical difference between the mechanical retention group and the polymer base retention group. There was a significant statistical difference (p<0.05) for the chemical adhesion ceramic bracket group.

#### Conclusions

The difference between the enamel surfaces before bonding and after debonding brackets with chemical retention was statistically significant; bonding and debonding these brackets resulted in enamel damage.

American Journal of Orthodontics and Dentofacial Orthopedics 2008: 134 (4): 548-555.

## Autogenous transplantation of maxillary and mandibular molars

Reich, P.P.

#### **Purpose**

Autogenous tooth transplantation has been used as a predictable surgical approach to correct malocclusion and replace edentulous areas. This article focuses on the surgical approach and technique for molar transplantation.

#### Patients and methods

A total of 32 patients aged between 11 and 25 years underwent 44 autogenous molar transplantations. The procedure involved transplantation of impacted or newly erupted third molars into the extraction sockets of non-restorable molars, and surgical removal and replacement of horizontally impacted molars into their proper vertical alignment. Five basic procedural concepts were applied: 1) atraumatic extraction, avoiding disruption of the root sheath and root buds; 2) apical contouring of bone at the transplantation site and maxillary sinus lift via the Summers osteotome technique, when indicated, for maxillary molars; 3) preparation of a four-wall bony socket; 4) avoidance of premature occlusal interferences; and, 5) stabilisation of the tooth with placement of a basket suture.

#### Results

All 32 patients successfully underwent the planned procedure. To date, two patients have had localised infection that resulted in loss of transplant. The remaining 42 transplants remain asymptomatic and functioning, with a mean follow-up period of 19 months. No infection, ankylosis, loss of the transplant, or root resorption has been noted. In addition, endodontic therapy has not been necessary on any transplanted teeth.

#### Conclusions

Autogenous tooth transplantation has been discussed and described in the literature previously, with a primary focus on cuspid and bicuspid transplantation. The molar transplant is infrequently

### Answers to quiz (from page 246)



- 1. a) Retained deciduous teeth, URC, ULB, ULC;
  - b) retained and infraoccluded LLE;
  - c) UR3 in lateral incisor position;
  - d) UR2, UL2, UL3, LL5 are not present/have not erupted;
  - e) he has a mild CI III malocclusion with reduced overjet and overbite;
  - f) there is a lateral open bite on the left side; and,
  - g) the left molar relationship is  $^{1}\!/_{2}$  unit Class II.
- 2. a) Full history including family history of hypodontia;
  - b) check for mobility of primary teeth;
  - c) palpate for the unerupted upper left permanent canine (it is extremely rare for this tooth to be congenitally absent); and,
  - d) parallex radiographs to locate the unerupted canine and check the roots of the adjacent teeth.
- 3. Studies have demonstrated a link between ectopic canines and missing or diminutive upper lateral incisors.
- Patient factors such as expectation, motivation, compliance, oral hygiene and cost;
  - b) orthodontic factors such as smile line, spacing or crowding, overjet, overbite and molar relationship; and,
  - c) canine factors to assess whether it will look suitable as a substitute such as colour, contour, the height of the cervical margin and bulbosity of the tooth.

Quiz question set by Dr Ciara Scott, Specialist in Orthodontics.

discussed in today's literature, possibly because of the preponderance of titanium dental implants. Autogenous molar transplantation is a viable procedure, with low morbidity and excellent functional and aesthetic outcomes. This report shows the successful transplantation of 42 of 44 molars in 32 patients with a mean follow-up period of 19 months.

Journal of Oral and Maxillofacial Surgery 2008: 66 (11): 2314-2317.



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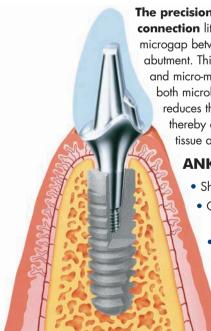




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### Illuminating magnification

CIARAN O'DRISCOLL takes us through the issues surrounding magnification in endodontic treatment.

#### Introduction

This article reviews and describes the features and clinical uses of loupes and the dental operating microscope (DOM) in endodontic treatment.

#### **Loupes**

Loupes are the most common form of magnification used in dentistry and have been in use since the latter part of the nineteenth century. Dr Edwin Saemisch, a German ophthalmologist, began using simple binocular loupes in his practice in 1876.¹ They were adopted into the practice of dentistry soon after this. Loupes (**Figure 1**) utilise convergent optics, with lenses mounted side by side on a pair of glasses and angled inwards to focus on an object. The eyeglass portion can be of plain glass or customised to the owner's prescriptive needs.

Most dental loupes are compound in design and contain multiple lenses with intervening airspaces. Prism loupes are also available; these are like low powered telescopes that use refractive prisms to produce improved magnification. A fibre-optic headlamp may be added to the loupes or to headgear to increase visual acuity. These headlamps can increase the light levels to as much as four times the intensity of the traditional overhead dental light. As the light is mounted on the centre of the forehead, it is closely aligned with the visual path, making shadowing less likely.

Because of their ease of use and moderate cost, loupes are a widely used form of magnification. They have some disadvantages, however. The magnification of a pair of loupes is fixed and limited to between 2.5x and 6.0x. One fixed magnification may not be suitable for all procedures. The higher-powered loupes may be bulky and cumbersome, especially with a headlamp attached. Because loupes use convergent optics, the eyes must converge to view an image. This will create eyestrain and fatigue when used for prolonged periods.

#### The dental operating microscope

The operating microscope was first used clinically in the field of medicine in 1921, when Dr Carl Nylen, a German otologist, used a monocular microscope in the treatment of chronic middle ear otitis.<sup>2</sup> It wasn't until 1981<sup>3</sup> that the first commercially manufactured dental microscope was marketed. The 'Dentiscope' had one fixed magnification (8x), dual fibre-optic lights, and could be mounted on a wall or mobile stand. The field of endodontics was the first dental specialty to embrace the new technology, to the point where today it is an essential part of the endodontic armamentarium.

Today's microscopes are available in ceiling, wall or floor mountings depending on the needs of the practitioner and the surgery design (Figure 2).

#### **Components of the microscope**

The basic components of the microscope are the binocular tubes with eyepieces, the magnification changer, the objective lens and the illumination system (**Figure 3**).

The binocular tubes are aligned until the two light beams combine to effect a single focus. The magnification changer consists of lenses mounted on a turret that can be rotated by a dial on the side of the microscope to increase or decrease the magnification. The focal length of the objective lens determines the working distance between the microscope and the surgical field.

The total magnification (TM) of the microscope can be calculated from the formula:

 $TM = (FLT/FLOL) \times ME \times MF$  where,

FLT = the focal length of the binocular tube;

FLOL = the focal length of the objective lens;

ME = the eyepiece magnification; and,

MF = the magnification factor.

Low magnification is used for orientation to the treatment area. Mid range magnification is used when operating and high power is used for observing fine details. Magnifications of 30x are possible, but the low and medium range magnifications are most commonly used (Figures 4, 5 and 6).

The light source is usually powered by a halogen or xenon bulb that is connected to the microscope via a fibre-optic cable. The light passes through a condensing lens, a series of prisms and then through the objective lens to the surgical site. The intensity of the light is controlled by a rheostat.

#### Features of the microscope

The DOM has many advantages over traditional loupes. These include multiple levels of magnification, unobstructed co-axial illumination, improved ergonomics, and the ability to integrate video and digital cameras for documentation, patient education, and observer or assistant viewing.

#### Multiple levels of magnification

As mentioned, the magnification can be changed by rotating a dial on the body of the microscope. Magnification changers are available in three-, five- or six-step manual changers or a power zoom changer. The depth of focus and field of view decrease with increased magnification. If the depth of focus or field of view is too narrow, depending on the procedure being performed, the operator only needs to rotate the dial to back off the magnification to see the desired field.

#### **Co-axial illumination**

Co-axial illumination eliminates the presence of shadowing. The light from the microscope is emitted directly from the objective



FIGURE 1: Compound loupes 2.5x.



FIGURE 3: Dental operating microscope.



FIGURE 7: Beam splitter attached to side of microscope.

lens itself. The dentist's visual path is travelling in exactly the same direction as the path of illumination. The light exits to the eyes through the binoculars as two separate beams of light. This separation of the light beams produces the stereoscopic effect, which allows us to see depth. The operator's eyes are receiving parallel beams of light and are at rest, enabling lengthy operations without fatigue.



FIGURE 2: Ceiling-mounted microscope.



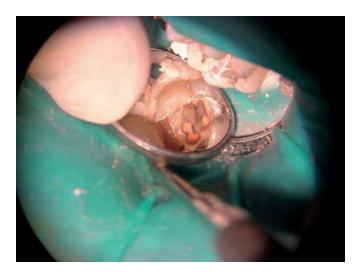
FIGURES 4, 5 and 6 (clockwise form left): The decrease in field of view as the magnification increases. At higher magnifications, slight movements by the patient can throw the field of view out of focus, necessitating re-centring and re-focusing of the microscope.



FIGURES 8 (left) and 9: At high magnification, the crack on the pulpal floor can be seen extending into the palatal canal of this upper molar.

#### Improved ergonomics

The operator's head and back can maintain the most comfortable position, because of the inclined or inclinable nature of the binoculars. The tendency to stoop and bend is eliminated. This is less fatiguing for the dentist in the short term and reduces the risk of back and neck problems in the future.





FIGURES 10 (left) and 11: Treated and untreated case showing the location of the MB2 canal in two upper molars. Note the dentine map in the treated case joining the orifices together.







FIGURES 12, 13 and 14: Common configurations of the MB2 canal systems once found and treated.

#### Integration of video and digital camera

A beam splitter can be attached to the microscope to divert light to a video or digital camera (Figure 7). Images can then be projected onto a monitor for assistant and patient viewing. Video clips and digital images may also be stored for record purposes, for sharing with referring dentists, or imported into PowerPoint presentations.

#### Clinical uses of the microscope

In the field of endodontics, the DOM is useful in many clinical situations. These include detection of coronal and radicular cracks and fractures, and viewing perforations for repair. When integrated with piezoelectric ultrasonics and micro-instruments, it may be used for the removal of canal obstructions and the location of calcified and additional canals. Locating apices and examining and resecting roots in surgical endodontics becomes easier. It is also an invaluable tool for communicating with the patient about treatment challenges encountered, with pictures displayed on the monitor.

#### **Detection of cracks and fractures**

The DOM may be used in the detection of cracks and fractures (Figures 8 and 9). While banding and crowning may prevent the propagation of coronal cracks, teeth with radicular cracks and fractures have a poor prognosis.

#### Location of canals

In the search for the MB2 canal system in upper molars, ultrasonic tips or small long neck (LN) burs can be used under magnification in a conservative manner to eliminate secondary dentine commonly found overlying the orifice of the canal (Figures 10 and 11). A dentine map joining the canal orifices can sometimes be seen on the pulpal floor following removal of calcifications (Figure 12) and is helpful in locating the remaining canals. An experimental study by Kulild and Peters<sup>4</sup> found that 95% of the maxillary first and second molars studied had two canals in the coronal half of the MB root.



FIGURE 15: Fine ultrasonic tip and LN bur used for conservative removal of dentine. As one troughs deeper into the canal, the head of a traditional handpiece can obstruct one's view. Switching to an ultrasonic handpiece with a fine tip, held in a pen-like grip, allows more light to enter the root, facilitating precise dentine removal deep in the canal.



FIGURE 16: Darker greyer calcified dentine is chipped away with ultrasonic tips until the canal lumen is located.





FIGURES 17 (left) and 18: Pre- and post-treatment radiographs of a sclerosed case.

#### Location of sclerosed canals

In searching for a sclerosed canal, calcified material may extend a considerable way down the root structure until a canal lumen is located. This calcified material is darker and greyer than normal dentine and is seen clearly under the microscope. Fine ultrasonic tips can be used to chip away at this darker material until the patent canal is located (Figures 15-18).

#### Removal of canal obstructions

Under the operating microscope, canal obstructions such as fractured instruments and fractured posts can be visualised, facilitating their removal with ultrasonic energy and minimum loss of tooth structure (Figures 19 and 20).



FIGURES 19 and 20: Sectional silver point in the apical third of an upper canine. In this case, ultrasonic energy was applied indirectly to the sectional silver point via an endodontic file to help loosen it.

#### Location and repair of perforations



FIGURES 21 and 22: Perforation location and assessment before repair.



FIGURES 23 and 24: Perforation repair with mineral trioxide aggregate (MTA).





FIGURES 25 and 26: Micro-instruments such as the micro-apical placement (MAP) guns used in conjunction with pluggers under magnification for accurate placement of MTA cement.

#### Summary

The DOM has few disadvantages but there is a steep learning curve involved for the new user. Undertaking a training course on the use of the microscope before using it in the clinical situation is highly recommended.

There are cost implications also, but entry-level microscopes are competitively priced.

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Ciaran O'Driscoll BA, BDent Sc, MSc.

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- Cork, Maryborough Woods, Douglas. New 700sqft unit to let, suitable for family dental practice or specialist, adjacent to new family medical practice and pharmacy. Contact Paul, Tel: 087 803 7107, or Dave, Tel: 087 239 6877 for details.

#### Journal of the Irish Dental Association

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- For sale, Dublin South West. Very busy, progressive, well-established practice. Two surgeries. Excellently equipped. Digitalised x-rays. Small medical card. Good crown and bridge. 4 mins M50. Long lease, low rent. Excellent figures. Large area for expansion. Expense sharing option. Tel: 086 807 5273.
- To lease. Waterford City dental/orthodontic surgery in new medical health park. Opening March 2009. Anchored by one of the largest GP practices in the South East. Further information on request from O'Shea O'Toole & Partners, Tel: 051 876757, or click on www.WHP.ie.
- Consulting rooms to let in newly refurbished modern medical practice in Rathdrum, Co. Wicklow. Great opportunity, no competition, expanding practice. Car parking, Cat 5, telephone system. Contact Ciaran, Tel: 0404 43436, or 087 3191247.
- For sale, South Dublin. city centre two miles. Very busy location with good footfall. Good equipment. Room for expansion, plans available. At present expense sharing, overheads, rent low. No medical card. Good figures. Competitively priced. Immediate sale. Tel: 086 807 5273.
- For sale, Dublin South. Good location. Long established in the area. Very busy, high profits. Principal retiring from general practice. Two surgeries, hygienist. Room for expansion. Good equipment OPG. Plentiful parking. High C and B element. Property flexible options. Tel: 086 807 5273.
- For lease/sale, Waterford City. Good location main crossroads. Full planning permission. Walk-in-able modern surgery. Room for expansion. Plans available to modernise. Only dental practice this side of city. Large catchment. Low rent flexible options. Low overheads. Tel: 086 807 5273.
- For sale, Co. Kildare. Very busy two-surgery. Great location. Thriving town, 30 mins from Dublin. Reasonable rent. Good staff. No medical card. Excellent profits. Realistic price. Principal retiring available for transition. Tel: 086 807 5273.
- Premises suitable for dental surgery available. Central location (over post office). Expanding commuter town. Population 4,000 plus. Excellent potential. Tel: 086 264 7573.

#### **PRACTICES WANTED**

- Dental practice required by experienced principal returning from the United Kingdom in 2008/2009 (freehold or leasehold). Funds in place, early decision for suitable opportunity. We are retained to enter confidential negotiations with interested principals. Contact Charles McCarthy, Tel: 086 854 5656.
- Established dental practice seeks accommodation in Ballsbridge, Dublin 4 area: rental, expense sharing, freehold or any other arrangement considered. Car parking desirable but not essential. Box Number J608.001.

#### **EQUIPMENT FOR SALE**

Zoom advanced power light, recently bought, used only 10 times. With box and papers. In good condition for a good price. Tel: 086 397 6785.

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When applied once a day over the longer term, this cream can arrest the process of dental erosion, a common underlying cause of tooth sensitivity.

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GC tooth mousse is a topical, waterbased, fast-acting sugar-free cream with the following features:

- · Strengthens, before and after bleaching
- Protects, against hypersensitivity, after professional tooth cleaning and during orthodontic treatment
- Replenishes by stimulating saliva flow
- Delivers Recaldent™ (CPP-ACP) to restore mineral balance

For further information, please contact Promed on **freephone 1800 619 619** or log on to the Promed website **www.promed.ie** 



#### DIARY OF EVENTS

#### January 2009

#### Metropolitan Branch IDA - Scientific Meeting

January 15 Hilton Hotel, Charlemont Place, Dublin 2 Speaker is Prof. Brian O'Connell on 'Improving your outcomes in prosthodontics – something old, something new', and the meeting will also feature a joint presentation from postgraduate prosthodontic students at DDH.

#### Irish Endodontic Society - Annual Scientific Meeting

January 22 Hilton Hotel, Charlemont Place, Dublin 2

#### World of Dentistry in Berlin - Jubilee Congress

January 22-24 Estrel Convention Centre, Berlin For further information, visit www.quintessenz.de/60.

#### Irish Endodontic Society Meeting

January 23 Dublin Dental Hospital, 9.00am Speaker is Dr Christine Sedgley.

#### Irish Dental Association - Council Meeting

January 24 IDA House, Leopardstown, Dublin

#### Munster Branch IDA - President's Dinner

January 30 Flemings Restaurant, Cork.

#### February 2009

#### Irish Endodontic Society Meeting

February 26 Dublin Dental Hospital, 7.30pm Case studies.

#### Metropolitan Branch IDA - Retired Dentists' Dinner

February 26 Hilton Hotel, Charlemont Place, Dublin 2 Dinner is at 6.00pm. All dentists, whether retired or not, are very welcome to attend and have a chat with our colleagues who have 'been there and done that'. Informal dental evening takes place at 8.00pm.

#### Metropolitan Branch IDA -

#### Annual Scientific Day: 'Mastering Technology'

February 27 Hilton Hotel, Charlemont Place, Dublin 2 Programme will include short presentations, a multidisciplinary dental team presentation, table discussions and trade show.

#### March 2009

#### Irish Dental Association - Council Meeting

March 7 IDA House, Leopardstown, Dublin

#### Metropolitan Branch IDA -

#### Scientific Meeting and Metro AGM

March 19 Hilton Hotel, Charlemont Place, Dublin 2 Speaker is Dr Paul Averley, on 'Conscious sedation: a primary case perspective'.

#### The Dental Nursing and Dental Hygienists Seminar

March 21 Cork University Dental School and Hospital Further details available nearer the time.

#### Irish Endodontic Society Meeting

March 26 Dublin Dental Hospital, 7.30pm Speakers are Drs Derek Duggan, Sile Lennon and Eoin Mullane.

#### Irish Dental Association Golf Society – Metropolitan Branch Outing

March 29 Woodenbridge Golf Club

#### **April 2009**

#### Irish Dental Association Golf Society – President's Prize

Date and venue to be confirmed.

#### Irish Dental Association Annual Conference –

#### 'Skilkenny 2009'

April 22-25 Hotel Kilkenny For further details, contact the IDA on 01 2950072, or Email: elaine@irishdentalassoc.ie.

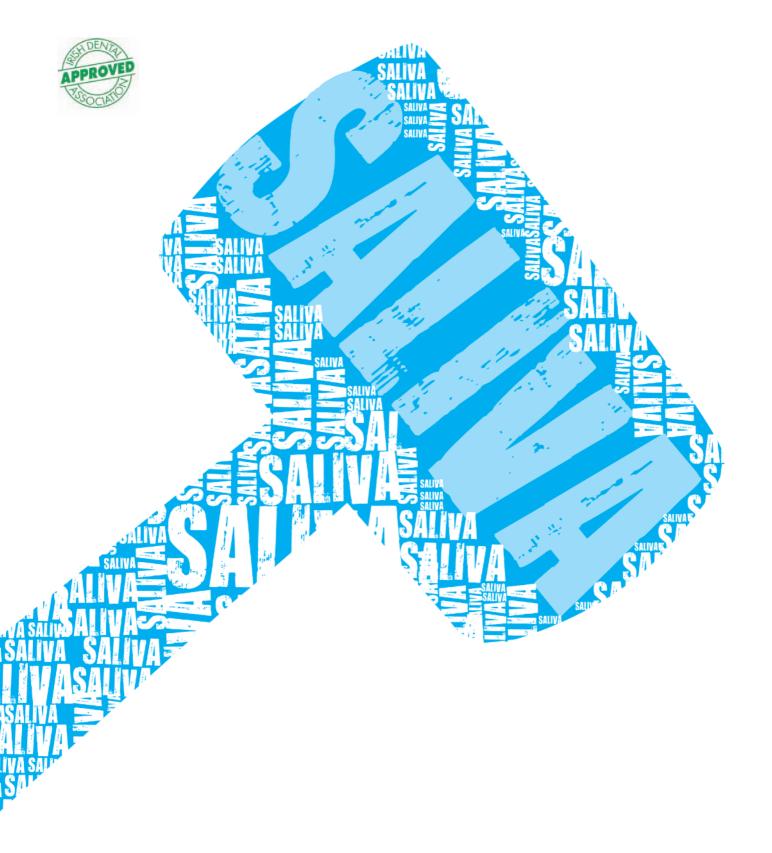
#### Irish Dental Association – Annual General Meeting

April 23 Hotel Kilkenny

#### May 2009

#### Irish Dental Association Golf Society - Lyttle Cup

May 22 Baltray Golf Club



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- **NEWS** with our new colored zirconia crowns, you will always be able to find the right color matching for the best esthetic outcome.

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