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Journal of the Irish Dental Association

Iris Cumainn Déadach na hÉireann

Vocational Training in Ireland

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The Journal of the Irish Dental Association
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PPA IRELAND
ABC application approved May 2006

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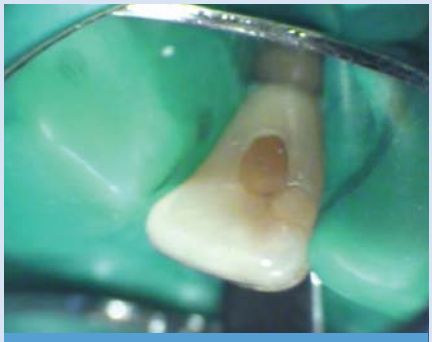


Avoiding perforations in endodontics **139**

Good advice

This issue highlights a few areas of general importance to our readers. Avoiding perforations in endodontics is a well-written, practical article giving us very good advice on how to avoid common pitfalls. It is well illustrated, and even the surgeon can follow it.

Oral and dental aspects of Sjogren's syndrome stresses the dentist's role in the management of this condition and can be used to help manage the patient with a dry mouth. It stresses the need to look at the whole patient and encourages dentists to be involved in the multidisciplinary approach in these cases.

An audit of a laboratory service highlights good clinical practice. A clinical problem was raised by staff, an audit instigated against agreed gold standards, a time frame identified and agreed criteria assessed. The gold standards were not reached. This will enable an informed discussion between stakeholders to improve standards, communications and possibly introduce new protocols to address the problem. Audit is a continuum and it will be interesting in 12 months time to review the situation and see if there has been any improvement.

Career decisions

Vocational training in dentistry talks about the advantages to both the trainer and the vocational trainee of this programme, the difficulties in obtaining funding for these posts and the need to develop more of these posts. Vocational training is not mandatory in Ireland nor in many European countries. It is recognised as an excellent stepping stone into practice. It certainly benefits patient care. Can we do better?

There is a trend in dental training towards general professional training, recognising that it is difficult for a new graduate to decide what area of dentistry they want to work in or be best suited to without experiencing the different areas. General professional training (a two-year flexible and voluntary programme) should give the new graduate (dentist) experience in the health board, general dental practice and the various aspects of the hospital dental services, supported by education, teaching, seminars and culminating in the attainment of a marker of achievement MFDRCSI or equivalent. A personal portfolio with a considered professional development plan is an essential tool for the new graduate regardless of what they would like to do or end up. Good career advice is an essential and it is incumbent on us to provide this through career fairs, written information and 1:1 advice. There are plenty of sources for advice at present.

Endocarditis

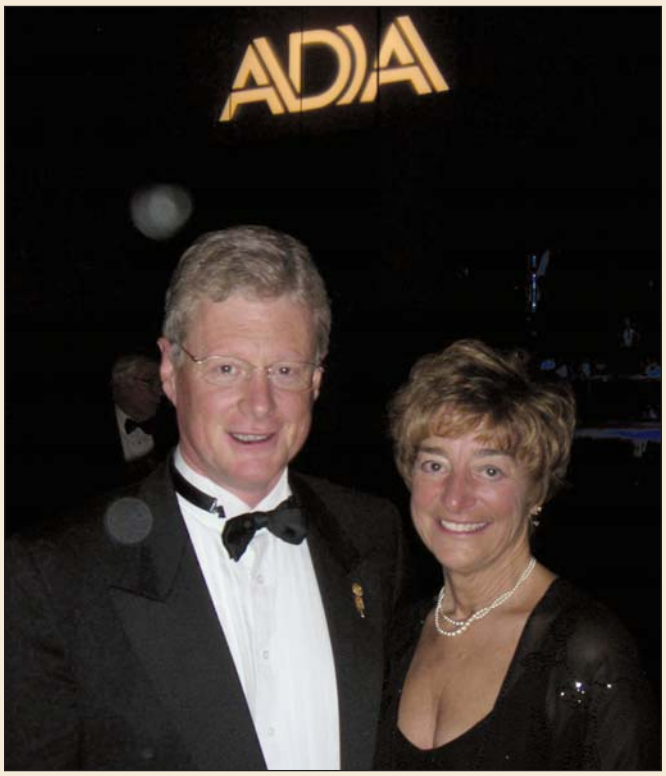
Antibiotic prophylaxis for bacterial endocarditis remains a problem area for dentists, with different advice being given in the UK, Ireland and the USA. The recent guidelines from the UK are helpful but do make it difficult for dental practitioners as they are not yet accepted by all nor included in the British National Formulary. The National Institute for Clinical Effectiveness is reviewing the evidence at present. The Dublin Dental School and Hospital Clinical Committee has adopted a wait-and-see approach. There is no definite right answer to prophylaxis of infective endocarditis. There are good arguments for both sides of the argument. We advise in those cardiac conditions, which require antibiotic prophylaxis, Chlorhexidene 0.2% mouthwash/local cleansing and Amoxycillin (no penicillin allergy) 3g po 60 mins pre-op or Clindamycin 600mg 60 minutes pre-op (penicillin allergy) with a glass of water.

Leo F. A. Stassen

Prof. Leo F A Stassen
Honorary Editor

PRESIDENTIAL NEWS

Great progress



IDA President Gerry Cleary with the President of the American Dental Association, Kathleen Roth.

With the ongoing implementation of the PriceWaterhouseCooper report, our team is now complete in IDA house. The final team member, Employment Relations Officer Shirley Coulter, was recently appointed on approval of Council. Shirley is joining us from a business advisory body working between Government and business, and she has prior experience in human resources, policy research and public affairs. We now look forward to the future with our very strong team in place, who are focussed on the main task of providing excellent services and support to our members. A considerable number of the PWC report's recommendations have now been implemented and we will continue to consult this document going forward.

The Association has been extremely busy in recent months with the PDS Seminar and negotiations with DTSS and DSFA. This past month also saw the introduction of two new services to members - the practice development courses, and our inaugural retirement planning seminar. We are pleased the very positive reception to these new courses and we will continue to refine and develop them.

International relations

We have also been busy on the international front. Current links to the Council of European Dentists have strengthened and a full representative team put in place. Congratulations to Dr Tom Feeney, who is the Treasurer of the CED, which is both an honour and a deserved recognition of his commitment to the group. At our recent Council meeting, Tom provided us with thorough and excellent reporting about the affairs of CED, and how European discussions may impact on Irish dentistry in the future.

We continue to develop relations with FDI (Federation Dentaire International). This is a very significant forum in dentistry, and we hope to continue to expand our dealings with this group at their annual meeting next year in Dubai.

Recently, I had the pleasure of representing the Irish Dental Association at the American Dental Association annual meeting. At the meeting, I met with Geraldine MacMorrow, an Honorary Member of the Irish Dental Association, who was particularly pleased to hear about IDA affairs. She was the first female president of the ADA and particularly pleased to hear that she still retains honorary membership of IDA. The new ADA president is also female – Kathy Bates - who has strong Irish connections and is considering a visit to Cork for ASC 2007.

Promoting prevention

Colgate Oral-Health Month was another terrific success for the Irish Dental Association and Colgate. There was good national and local media coverage and the strong message of prevention was put forward again. We are keen to continue develop this important relationship with Colgate. In the coming months, we hope to organise training for our regional spokespersons, which of course will be of enormous benefit to the Irish Dental Association in putting forward its own messages in the future.

Other news

Our inaugural retirement planning day was a big success with 33 participants. A small committee was formed to look after the affairs of this section of our membership. Elaine Hughes in IDA house will be assisting the committee under the chairmanship of Dr Denis Reen and we look forward to receiving any ideas you may have for this group.

Our IDA Journal goes from strength to strength. I saw a member engrossed in the last edition of JIDA, while waiting to pick up his daughter from a very noisy birthday party! Many thanks to the Editor and his team for affording me this space during the last year and I look forward to hearing all about John Barry's presidential news in our next issue.

Gerry Cleary
President

LETTERS

Dear Editor

I am writing on behalf of the Irish Nursing Homes Organisation's Nurses Committee which represents nurses and health care teams working in private nursing homes across the country.

We wish to express our distress and dismay at the sustained negative media coverage of the nursing home industry and to bring a balanced approach to this negativity. This constant criticism has lead to demoralised staff who are working very hard to provide a very high standard of care to their residents. The nursing home sector is already under constant scrutiny from families, the nursing home inspection teams and various professional staff who visit nursing homes.

The majority of residents in private nursing homes are maximum dependency, having complex physical and mental health needs. Nurses and staff working in this sector are dedicated to caring for frail elderly people and to ensuring all their care, social and psychological needs are met.

One Director of Nursing described the service she provides as totally holistic, providing for all needs, i.e., the organisation of chiropody, hairdressing, physiotherapy, social activities, organisation of out-patient appointments, opticians, medical care, medication ordering and administration, the provision of personal care etc. The list is endless. The best part of all is that this is provided in a friendly and homely environment by professional well trained dedicated nurses and support staff.

If you asked residents and relatives of residents if they are satisfied with the care given to them in private nursing homes up and down the country, you would get a very strong majority of highly satisfied people. So please stop tarring us all with the one brush and let there be recognition for the hard working and dedicated nurses and staff who take care of the country's frail elderly population each and every day in the private nursing home sector.

The Irish Nursing Homes Organisation's Nurses Committee are also working to raise and set standards of quality of care by creating a culture of evidence based practice for policies and procedures in private nursing homes.

Yours sincerely,

Caroline Connelly
Practice Development Facilitator,
Irish Nursing Homes Organisation

Dear Editor

We made porcelain veneers, with incisal coverage, for UR 321 and UL 12 in 1993 for a lady who is now 59 years of age.

She has a deep overbite, somewhat reduced posterior support, imbricated LR 1 and LL 1 and has a clenching habit.

She attended recently with the mesial ¼ of UR 1 veneer fractured off from incisal edge to cervical margin. On examination I found that the mesiopalatal aspect of UR 1 was worn to a thin layer, the enamel and dentine having been worn from the palatal side, and heavily worn LR 1 and LL 1. Some of the dentine loss is from erosion as can be seen from the thickness of the palatal composite repair.

If I had used full coverage on UR 1 and UL 1, and done something about LR 1 and LL 1, the treatment would have been more satisfactory.

Yours sincerely,

Frank McCrea
Dental Surgeon,
Dalkey, Co Dublin.

Dear Editor

I refer to the recent article by Dr. Niall Jennings on selling a dental practice. His comment that 'An OPG X-ray offers €20,000 – €25,000 potential profit to the practice per annum' caused me some concern. This comment would suggest that the only reason for an OPG is profit. The recent European Guidelines on Radiation Protection in Dental Radiology state:

> *Most evidence shows that conventional panoramic radiography has lower diagnostic accuracy for the common dental radiographic diagnostic tasks (caries diagnosis, periapical diagnosis) than intraoral (bitewing and periapical) radiography. Over and above these common tasks, routine panoramic radiography in search of asymptomatic bony lesions without clinical signs is not justified because of the low prevalence of such abnormalities. There is no justification for review panoramic radiography at arbitrary time intervals.*

The European Guidelines also give some recommendations when it is appropriate to expose panoramic images. The European Communities (Medical Ionising Radiation Protection) Regulations 2002 (S.I. 478 of 2002), section 7.1 states:

> *Medical exposure referred to in regulation 4.1 shall show a sufficient net benefit, weighing the total potential diagnostic or therapeutic benefit it produces, including the direct health benefits to an individual and the benefits to society, against the individual detriment that the exposure might cause, taking into account the efficacy, benefits and risks of available alternative techniques having the same objective but involving no or less exposure to ionising radiation.*

This concept of justification of radiographic exposures is also supported by the European Guidelines when it states:

> *Any X-ray exposure entails a risk to the patient. Under normal circumstances the risk from dental radiography is very low. Nonetheless, it is essential that any X-ray examination should show a net benefit to the patient, weighing the total potential diagnostic benefits it produces against the individual detriment that the exposure might cause. The efficacy, benefits and risk of available alternative techniques having the same objective but involving no or less exposure to X-rays should be taken into account.*

I would have expected that Dr. Jennings would emphasise the safety, licensing and justification issues around x-ray equipment rather than the apparent profit associated with its use.

Yours sincerely

Dónal McDonnell
Senior Lecturer Consultant in Oral Radiology,
University Dental School and Hospital, Cork

References

Jennings N. Selling a dental practice? *Journal of the Irish Dental Association* 52 : 2 96-7, 2006.

European Guidelines on Radiation Protection in Dental Radiology. Issue No 136. European Commission. 2004

SI 478 of 2002. *European Communities (Medical Ionising Radiation) Regulations, PN :12216.* Stationery Office, Dublin. 2002.

Re: Letter re article on Selling a Dental Practice

Dear Editor,

Thank you for a copy of the letter to the editor dated September 21, 2006, in which there was a reference to a line, 'An OPG X-Ray offers €20,000 - €25,000 profit to the practice per annum' in my article headed Selling a Dental Practice.

The correspondent is, of course, quite right that it is extremely important that all patients are exposed to the minimum radiation dosage consistent with the need to diagnose. However, while I agree wholeheartedly with this sentiment, your correspondent has taken my comments out of context. The comments referred to was under the heading "The Banks Questions" - sub-section "Equipment." Since a digitalised OPG machine is one of the largest expenditure items on a proposed equipment list it is always one of the boxes that the banks require information on.

If the article was based on Best Practice Guidelines for running a Dental Practice, I could relate to the comment and it would have been remiss of me not to have included the sentiments as expressed by your correspondent. My article was based on the financial perspective of buying and selling a Dental Practice and what both groups involved need to consider.

Yours sincerely,

Dr. Niall J Jennings

Fun run money goes to Crumlin

Ms Ciara Murphy, Chief Executive Officer, IDA with Dr Paddy Fleming of Our Lady's Hospital, Crumlin, and Drs Gerry Cleary and Ed O'Reilly of the ASC Committee.

The IDA Colgate Fun Run at the ASC in Dublin this year raised €5,000 for the treatment of childhood cancers at Our Lady's Hospital for Children in Crumlin. It was received by the Haematology/Oncology Department.

The risk for an individual child in Ireland of being diagnosed with childhood cancer before the age of 15 is about one in 500. The incidence within the first five years of life is twice as high as that from six to fifteen years of age.

Acute leukaemia is the commonest form of childhood cancer, accounting for approximately one-third of all cases. The survival probability has considerably changed over the past thirty years and this has been made possible by clinical research by co-operating groups of paediatric oncology/haematology centres around the world. Survival rates have progressively increased the long term survival rates from less then 20% before 1975 to greater than 70% by 2000. Childhood leukaemia has led the way in relation to the success with approximately 85% of all children with acute lymphoblastic leukaemia being cured. Acute myeloblastic leukaemia, the second most common cause of leukaemia in children, has also had significant increases in cure rates going from less than 15% in 1975 to around 65% in 2000.

Captain's Prize Winner

The Captain's (Paddy Crotty) Prize of the Irish Dental Association Golf Society was competed for at Carlow Golf Club in September. Winner John O'Mahony is pictured receiving the prize from Paddy Crotty, watched by Jonathan Savage of sponsors, Optident Ltd.

Appointment at IDA

Shirley Coulter has been appointed Employment Relations Officer of the Irish Dental Association. A native of Co. Dublin, Shirley joins the Association from DSA, a business advisory body working between Government and enterprise. She has strong experience in human resources, policy research and public affairs, and completed an internship in the European Parliament, Brussels. Shirley holds an honours BA in international politics and French from UCD and an honours MA in globalisation from DCU.

Congrats Pat!

Many thanks to everyone who sent their response to the survey in the last edition of the Journal. We appreciated your views and the winner chosen is:

Dr Patrick J Costello, 5 Knocknacarra Park, Salthill, Galway

He wins the €250 voucher for House of Ireland.

Retirement seminar

The IDA recently staged a seminar on retirement. It advised members – both those already retired and those approaching retirement decisions - on how to cope with the financial, health, psychological and social implications of retirement.

Additionally, there was advice on how to dispose of dental assets. The event was a success and a small committee has been formed with a view to organising an annual event, with a strong social aspect, for retired dentists.

The seminar also provided an excellent opportunity for members to see the facilities in the new IDA headquarters.

ABOVE: Dr Denis Reen, Chairman for the Seminar, addresses the attendance. BELOW LEFT: Drs Theo Hanley, Angus Roche and Tom Molloy. BELOW RIGHT: Dr Art McGann and Dr Seamus Flood.

Seminar Success

The Public Dental Surgeons (PDS) Seminar in Adare in October was attended by over 200 dentists and hygienists. Such was the demand for places that extra places had to be found in the room for those wishing to be seated. A series of presentations spread over three days (Wednesday to Friday) were augmented with social events, including the Seminar dinner on the Thursday evening. At the event, the office of President of the PDS section of the Irish Dental Association passed from Dr Dr Anne Crotty to Dr Patrick Quinn.

Dr Dr Anne Crotty presents the chain of office to Dr Patrick Quinn.

At the dinner were (from left): Dr Bernice Fitzgibbon; Dr Patrick Quinn; and Dr Dan Counihan, with Minister of State at the Department of Health and Children, Mr Tim O'Malley, TD.

Mrs Anne Houlihan and Dr Martin Houlihan, President of the Dental Council.

Ms Ciara Murphy, Chief Executive Officer and Ms Shirley Coulter, Employment Relations Officer, IDA, with Mr Chris Fitzgerald, Department of Health & Children.

At the Seminar were (from left): Dr Anne O'Neill, Dr Catherine Wynne, and Dr Sarah McMinigal.

Innovative research

'Winning Smiles' an innovative schools-based oral health promotion research programme is the first of its kind to embrace an all-island perspective. The report of the programme was launched in September by An Taoiseach, Bertie Ahern.

The programme set out:

- to encourage toothpaste use;
- to improve child oral health-related quality of life and self-esteem; and,
- to increase children's oral health-related knowledge and attitudes;
- assess changes in reported oral health behaviours among children living in relative poverty.

Those children that embarked on the programme were shown to have increased their toothpaste use from the beginning of the study as well as increasing their oral health-related quality of life, self-esteem and knowledge and attitudes relating to their oral health.

At the launch of the 'Winning Smiles' report were children (from left) Aksnan Frayne (8); Brian Óg Crowder (11); Dáithí Byrne (8); and, Aoife Howell (8). Behind them are (from left): Ms Patty Speedy, Eastern Health and Social Services Board; An Taoiseach Mr Bertie Ahern; Mr Christopher Fitzgerald, Department of Health and Children; and, Ms Deirdre Sadlier, Executive Director, Dental Health Foundation, Ireland.

Controlled trial

The programme was introduced and evaluated in randomly selected schools identified as being in areas of high social deprivation and disadvantage in Dublin and Belfast.

Consisting of a controlled trial and several qualitative studies, the Winning Smiles Research Programme has been shown to have a positive impact on the oral health of children involved in the study, with all children increasing their use of fluoride toothpaste from the beginning of the trial.

This quantitative aspect of the report was led by Dr. Helen Whelton, Principal Investigator and Director of the Oral Health Services Research Centre, University College Cork. According to Dr. Whelton: "The controlled trial evaluated the use of a new objective measure, the equilibrium salivary fluoride level, which essentially functions like a lie detector test for toothbrushing – allowing researchers to see if children who reported brushing their teeth regularly, actually did!"

Additionally, children attending participating schools experienced improvements in their oral health-related quality of life, oral health awareness and oral and social self-image.

Perspectives

The programme also investigated the children's own perspectives and feelings on toothbrushing habits and rules, and provides a valuable insight into children's beliefs regarding oral health. This novel approach highlighted the excitement experienced by the children who participated in the programme. This qualitative aspect of the report was led by Dr. Ruth Freeman and her team from Dental Public Health and Behavioural Sciences, Queen's University Belfast. Professor Freeman states: "The children's excitement with the programme was evident from the start. These are very encouraging findings with increases in children's oral health-related quality of life, as well as increases in their oral health status awareness and oral and social self-image. This is pertinent for children residing in areas of high social deprivation as they may experience low self-esteem and may feel disempowered with regard to preventing oral diseases."

Oral health promoters and school personnel also found the Research Programme to be a positive experience and one that is feasible to implement in partnership between oral health promoters and schools. A detailed resource pack was produced for the programme, and the Oral Health Promoters who delivered the programme provided feedback on the pack as part of the trial.

A partnership approach, put in place by the leadership of the Dental Health Foundation, Ireland, was used to the develop and test the programme in conjunction with the Oral Health Services Research Centre, University College Cork; Dental Public Health and Behavioural Sciences, Queen's University Belfast; Population Health Directorate, HSE; Dental Services, HSE Dublin North East and the Dental Services of the Eastern Health and Social Services Board, Northern Ireland.

A formal introduction of the programme will now be recommended in both jurisdictions. Further information and a full copy of the report can be received by contacting the Dental Health Foundation.

Award for DDSH

Following rigorous examination by a peer review panel of international and national experts, the Irish Health Services Accreditation Board (IHSAB) has singled out the Dublin Dental School and Hospital for praise in a number of areas.

In particular, they describe the Dublin Dental School and Hospital as a centre of excellence which uses a multi-disciplinary team approach to the delivery of care in a 'no-blame' culture where continuous quality improvement is promoted and encouraged.

Other issues singled out in the Irish Health Services Accreditation Board's citation include:

- the strong sense of pride among Dublin Dental School and Hospital staff as they go about their daily activities;
- the effective way in which the Dublin Dental School and Hospital intertwines its aims of timely care for patients with training the next generation of dental professionals;
- the innovative use of technologies which streamline treatments for patients; and,
- the Dublin Dental School and Hospital's clear commitment to research, as well as its commitment to leading Europe in the field dental research.

At the presentation were (from left): Mr Denis Murphy, Accreditation Co-Ordinator, DDSH; Professor Bill Watts, Chairman, Dublin Dental Hospital Board; Ms. Roisin Boland, CEO, Irish Health Service Accreditation Board; Mr. Dan Byrne, Chairman, Irish Health Service Accreditation Board; Professor Noel Claffey, Dean; Mr Brian Murray, Chief Executive and Ms Cathy Doyle, Corporate Service Manager, DDSH.

The international and national peer review process examined patient and staff safety as well as quality initiatives, leadership, human resource management, governance, facilities management, risk management and information management.

Galvin wins 3i outing

Dr Michael Galvin being presented with the trophy by Dr Spencer Woolfe and Olivia Kirwan, Sales Manager, 3i, Ireland and Northern Ireland.

At the 3i golf day were (from left): Dr Gerry Owens; Lili Rosendahl; Dr Kevin O'Boyle; Dr Michael Galvin; Olivia Kirwan, 3i; Dr Eddie O'Reilly; Dr Gerry Cleary; Dr Spencer Woolfe; and Bo Rosendahl, Director of 3i Europe.

The links at Portmarnock Golf Club was the setting for the annual 3i annual golf outing in September. The Director of 3i Europe, Bo Rosendahl, along with Olivia Kirwan, 3i Regional Manager Ireland, hosted the event. Dr Michael Galvin received the winner's prize and the 3i perpetual trophy, which was gallantly defended by last year's winner Dr Kevin O'Boyle. The golf was competitive in testing conditions and commendable rounds were also posted by Dr Gerry Cleary and Dr Eddie O'Reilly. After dinner, the prizes were presented by Dr Spencer Woolfe.

Nobel Biocare's World TourΩ

Delegates listen to one of the many presentations by experts at the Nobel Biocare World Tour on its stop in London in September. IDA President Gerry Cleary was one of the speakers and there were several Irish dentists in attendance.

EU NEWS

EU framework for Health Services

DR TOM FEENEY reports on developments affecting the dental profession in Europe.

The European Commission recently launched a public consultation on an EU Framework for Health Services. This follows on from the European Parliament decision in February 2006 to exclude all health services from the scope of the Services Directive.

The consultation, which will run until January 31, 2007, will seek the views of stakeholders – including the dental profession – on how best to deal with cross-border health services, including patient mobility and healthcare professional mobility. The Commission's plans for the health sector will also cover ways of encouraging co-operation between different national health systems: sharing best practice and creating networks of centres of reference.

Forum

In the context of the launch of public consultation, the recent European Health Forum which took place on October 4-7 in Austria was a key meeting, and was attended by members of the Council of European Dentists (CED) Brussels office.

The forum dealt mainly with the issue of cross-border provision of healthcare services – patient mobility and professional mobility - a subject which is extremely important for the CED at present. The CED General Meeting will discuss its own contribution on 15 November 2006.

More than 600 people from national health ministries, professional and patient organisations, research institutes and other health stakeholders took part in this very important meeting. The title of this year's event was 'Health sans frontières', and many of the some 30 discussion sessions focussed on the issue of migrating health professionals and patients.

One of the event's central discussions was on the future of healthcare in Europe, which considered the existing legal framework for patient mobility in the EU, sustainability of health systems, quality management of healthcare and the Commission's future framework for health services.

Reasons for patient mobility

The main reasons for patients moving from one country to another for treatment are: familiarity (to be treated in another country to be close to family members); availability (to avoid long waiting lists); financial costs (cheaper out-of-pocket payments in another country); perceived quality (belief that treatment in another country will be better); (bio-)ethical legislation (e.g. abortion not available in home country).

Future orientations of European policy on health services

More information is needed on patient and professional mobility. The Commission's consultation paper, published at the end of September points out that the impetus for EU action on health services has not come from the Commission, but from patients themselves. It has come through patients seeking reimbursement for healthcare costs through the courts, which resulted in the series of European Court of Justice (ECJ) judgments that confirmed patients' entitlement to reimbursement.

The main issues for the delivery and funding of healthcare are: impact of patient mobility; impact on professional mobility; legal certainty; and, data and guidelines.

Impact of patient mobility

The most publicised situations are where a patient is referred abroad or simply goes abroad on his own initiative because waiting times in the home country are too long. A more common situation, however, is where older people move abroad for, say, six months of the year, have multiple long-term illnesses and have to be treated in that other country. In terms of future planning of health systems, it is important to know how great the patient flow from one system to another might become.

Impact on professional mobility

In terms of health professional workforce, it is important to know if there might be too few professionals in the future to satisfy demand. For example, hundreds of UK patients go to Hungary for cheaper dental treatment, and at the same time hundreds of Hungarian dentists go to the UK to earn higher salaries. What effect would that have on health systems? However, a more serious challenge for health professions is migration away from the profession altogether. The World Medical Association noted, for example, that these days many health professions retire earlier than in the past, for various reasons. It also reported that in Germany some 25% of medicine graduates never actually join the medical profession in Germany, but move to another country or to another profession.

Legal certainty

There is a need for a codification (i.e., writing down in statute) of the law relating to patients' rights to have healthcare costs reimbursed when they have been treated in another EU country. Codifying the law, which is composed of a series of judgments of the ECJ since 1998, would improve the enforcement of patients' rights, because Member States are still not fulfiling their obligations to implement the court judgments.

Data and Guidelines

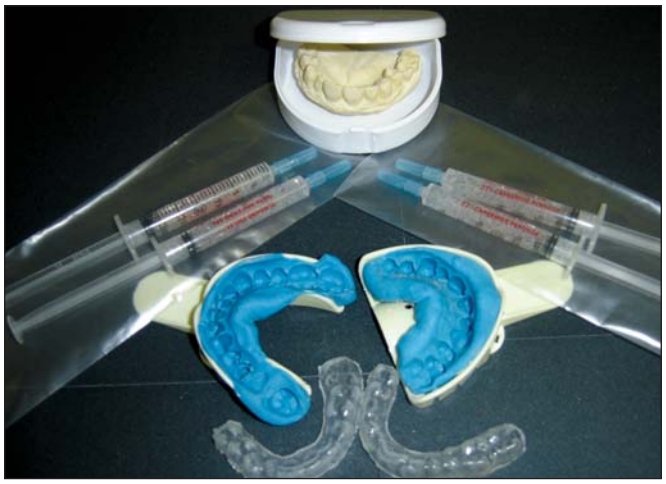
There is a need for data and transparency on the quality of health services in the EU.

If patients are to choose to be treated abroad, they need to decide on the basis of information. Not enough information of this kind exists.

The idea of a European-level body producing clinical guidelines (dubbed 'EURO-NICE' after the UK National Institute for Clinical Excellence) has been mooted.

Bleaching

The bleaching saga continues with a change in position by the CED.



The whole question of the exact legal position of bleaching products remains confused. However, an important change in position was taken by the CED Working Group in recent weeks. To put this change into context it is important to summarise events to date.

History of 6% hydrogen peroxide limit

The Cosmetics Directive (76/768/EEC) was enacted in 1976 and did not provide for tooth-whitening products (TWPs) at all. The Directive was amended in 1992 and tooth-whitening products were then included. On the recommendation of the Scientific Committee on Cosmetic Products and Non-food Products intended for Consumers (SCCNFP), the maximum permissible concentration of hydrogen peroxide (H2O2) in TWPs was 0.1%.

So it had been decided that TWPs were cosmetic products in nature, but in reality the Directive excluded virtually all TWPs because of the very low H2O2 limit. Since the Directive made no mention of TWPs with more than 0.1% H2O2, different Member States marketed such products in different ways: Spain classified them as dental devices; Germany classified them as medical devices; and the UK concluded that higher concentration TWPs were also cosmetic products and therefore illegal according to the Directive.

In light of this unacceptably ambiguous situation, which affected most of the TWP market, the European Commission (COM) sought to have the 0.1% limit raised. They asked the SCCNFP's advice and the latter delivered various opinions between 1999 and 2005 on permissible concentrations (N.B. - the SCCNFP was replaced by the Scientific Committee on Consumer Products (SCCP) in September 2004).

The opinions

February 1999: SCCNFP recommended raising the limit to 3.6% H2O2. However, TWPs with concentrations between 0.1% and 3.6% should be exclusively administered under supervision of a dentist.

September 2002: SCCNFP recommended raising the limit to 6% H2O2. However, TWPs between 0.1% and 6% should be exclusively administered under supervision of a dentist.

October 2003: COM questioned what "under supervision of a dentist" really meant. The SCCNFP made clear that TWPs above 0.1% should not be freely available to consumers.

March 2005: in the light of new evidence, COM asked the newly established SCCP if TWPs with up to 6% could be freely available to the consumer. The SCCP decided that the evidence did not support these products being freely available to the consumer.

In spite of the SCCP's opinion in March 2005 that these products should not be freely available to the consumer, the COM interpreted the opinion differently and began implementing a regime of over-the-counter selling of TWPs with concentrations of up to 6% H2O2.

Concern

In a recent meeting with Commission representatives the CED Working Group on Bleaching asked why the advice of the Scientific Committee on Consumer Products (SCCP) from March 2005 had been ignored. The Commission maintained that the SCCP's conclusions were ambiguous, but that the Commission's strategy for regulating TWPs was a genuine attempt to implement the conclusions. The CED Working Group members had actually discussed the issue with members of the SCCP involved in writing the report, who were confident that the intended meaning was that these products should not be freely available OTC.

"It is of great concern to the CED that the Commission has not followed the clear advice of the scientific committee, but has taken an approach which puts the public at risk."

It is of great concern to the CED that the Commission has not followed the clear advice of the scientific committee, but has taken an approach which puts the public at risk. The CED will now review its position in respect of its support for the Commission's strategy until such time as it (the Commission) takes proper account of the SCCP's advice.

Furthermore, if the Commission is determined to respond to pressure to make more TWPs freely and directly available to the consumer, the CED believes that the upper limit should not exceed 3.6% H2O2 – the minimum therapeutic dosage. This is to protect patients from the very real risks of higher-strength products. A 3.6% limit would mean that all products with more than 3.6% H2O2 would remain attainable only through a dentist for use in a range of accepted clinical procedures. The dentist will be best placed to decide whether home bleaching with the required dental support would be most appropriate, or whether it should best be undertaken as an in-practice procedure.

EU NEWS

Amalgam Issue

CED write to the Commission.

The European Parliament called on the European Commission, in March 2006, to come forward with a proposal to restrict the use of mercury in dental amalgam by the end of 2007. The Commission is preparing to submit questions to the Scientific Committee on Emerging and Newly-Identified Health Risks on the issue of the potential health risks relating to dental amalgam and restorative materials used as alternatives to amalgam.

The drive for restricting the use of mercury is coming from a general move to lower its use in all areas where it is consumed. The 2003 figures for consumption of mercury in Europe showed that 40% of its use was by the Chlor-alkali industry and the next biggest use was in dentistry, at just under 25%. The Chlor-alkali industry is in the process of phasing out its consumption of mercury, so that catapults dentistry into the firing line as the next biggest user.

Representative of dentists

As representatives of over 250,000 dentists from 31 dental national dental associations and chambers in the EU and EFTA, the CED Working Group on Amalgam wrote to the Commission to express its position and to provide some useful overviews of the scientific literature of independent organisations on the potential health impacts for patients of dental amalgam and alternative materials.

The letter pointed out that, as dental professionals and therefore users of these materials, members of the working group are acutely aware of their potential risks, since it is dental professionals who are most closely in contact with and therefore most at risk from them. The letter also pointed out that dentists are best placed to comment, beyond the health risks of the materials themselves, on the clinical advantages and disadvantages of various restorative materials.

The letter also went on to say that the issue of the safety of dental materials has been debated for many years, and that as dentists, our priority and duty is to deliver high-quality, effective and safe health care, and that the profession leads responsible debate and research. Often public discussions are emotionally charged, particularly when it comes to amalgam, which has been the focus of much of the debate and subject of an enormous amount of scientific literature. Unfortunately, the actual scientific literature is often not adequately taken into account in the public debate. The issue of the safety of alternative materials is no less important than the issue of safety of amalgam, and both issues need to be considered together. However, these alternative materials – many of which are relatively new – have so far undergone much less investigation than amalgam.

Conclusion

In conclusion, the letter stated that dental amalgam has been used as a safe, stable and cost-effective restorative material for more than 150 years. Despite many years of scientific research, international consensus indicates that the risk-to-benefit relationship for amalgam is low to insignificant and therefore does not constitute a risk to patients. Equally serious health risks have been identified with respect to alternative materials, but there too, there is a lack of hard evidence to support a link. The CED fully supports continued research in this area.

"...the letter stated that dental amalgam has been used as a safe, stable and cost-effective restorative material for more than 150 years."

Beyond the issue of potential health risks posed by one material or another, the CED would ask that the Commission and other decision-making bodies to take into account what the dental health impacts of restrictions on the use of amalgam would be. There are certainly strong arguments for continuing to use amalgam as part of a dentist's armoury in order to best meet the needs of patients.

Professional Qualifications Directive

The Health Professionals Crossing Borders (HPCB) project seeks to ensure a common, coherent and effective approach to fulfiling the obligations resulting from the Professional Qualifications Directive. One of the key results of the project is the drafting of a new template for a certificate of current professional status (formerly known as a certificate of good standing), designed for use across Europe. Each professional registering in another country will have to produce this certificate of current professional status.

The Professional Qualifications Directive comes into force in October 2007, so the new template should be introduced by then. Some competent authorities from some health professions intend to introduce the new certificate as early as November 2006.

The information contained in the certificate of current professional status will include: Name, Nationality, Professional ID Number/ Unique Identifier, Gender, Date of Birth, Date and Description of Primary Qualification(s) of Healthcare Professionals, Qualification or Specialisation, Registered Address and Registration Status. Registration status is a key item of information. Article 56 of the Professional Qualifications Directive states that: "The competent authorities (regulators) of the host and home Member states shall exchange information regarding disciplinary action or criminal sanctions taken or any other serious, specific circumstances which are likely to have consequences for the pursuit of activities." By exchanging this type of information a large step is taken to protect the host country from unscrupulous professionals.

Medical Devices Directive

The Council of European Dentists (CED) adopted a position paper on the Commission's draft directive in May 2006, welcoming the revision of the Medical Devices Directives as it simplifies the existing legal framework whilst safeguarding protection of patients and at the same time providing them with the benefits of technological innovation.

Since then, the CED has been active so as to improve some of the provisions of the directive with the aim of reducing bureaucracy without infringing the justified interest of patients, users and third parties.

The amendments suggested by the CED have been included in the report of the European Parliament's ENVI Committee (Environment and public health) which was adopted unanimously on October 4, 2006. A CED letter had been sent to MEPs on the ENVI Committee shortly before the vote asking them to support these amendments. They concerned:

1. Ensuring medical confidentiality for patients using custom-made devices (amendment 31): According to the vote of the ENVI Committee the patient can also be identified by acronym or numeric code on the statement of conformity accompanying a custom-made device, and does not need to be explicitly named as suggested in the Commission proposal.
2. Avoiding excessive data collection on medical software (amendment 64): The obligation to validate medical software has been deleted. Also, amendment 64 clarifies that the concept of validation should always be based on the relevant risk classification of the medical device concerned.
3. Simplifying post-market control of custom-made devices (amendment 73): According to the rapporteur a general obligation for manufacturers of custom-made devices to immediately notify the competent authorities of problems with custom-made devices, and to undertake necessary corrective action is sufficient to guarantee patient safety. The ENVI Committee has rejected the Commission's proposal to introduce a complex systematic procedure according to ISO standards.

The Medical Devices Working Group is currently exploring ways of introducing another amendment to the draft report of the European Parliament in time before the first reading with the aim of ensuring that the declaration of conformity accompanying custom-made devices would have to be delivered to the patient only upon his own request.

NEWS FEATURE

New Medical Practitioners Bill

The Government has published the Draft Heads of a new Medical Practitioners Bill. As this Bill is likely to form the template for similar legislation to cover the dental profession, the IDA is monitoring it progress. PAUL O'GRADY reports.

Draft Heads of a new Medical Practitioners Bill were published on July 18 this year by the Minister for Health and Children, Mary Harney, TD. The draft Heads of Bill are designed to update provisions relating to the regulation of medical practitioners by the Medical Council under the Medical Practitioners Act 1978.

Speaking at the time of its publication, the Minister said: "This legislation is the centrepiece of health reform. While there have been some amendments to the 1978 Act, this is the first time in nearly 30 years we have engaged in total review and modernisation of the statutory regulation of medical practitioners."

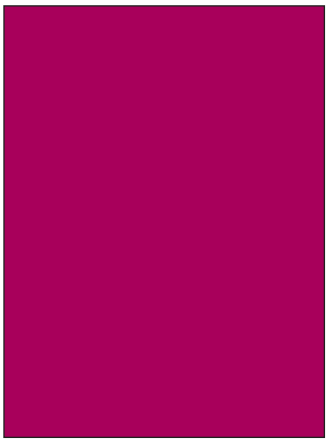
She continued by outlining the goals of the legislation: "The draft legislation is clear that the object of the Medical Council is to protect the public. The need for doctors to continually keep abreast of new developments, the rights of patients to be kept informed, and the expectations of the public have all greatly increased since the 1978 Act was passed. The balance between self-regulation and public accountability needs to be adjusted to reflect these requirements."

In essence, the new legislation is to provide for a modern, efficient, transparent and accountable system for the regulation of the medical profession, which will satisfy the public and the profession that all medical practitioners are appropriately qualified and competent to practice in a safe manner on an ongoing basis.

Broad welcome

The Draft Heads have received a broad welcome from bodies representing the medical profession. The Irish Medical Organisation (IMO) welcomed the publication of the Draft Heads, stating that it has sought reform of the 1978 Act for many years.

Dr John Hillery, President of the Medical Council said: "The Heads are to be welcomed as a major step towards the introduction of modern regulation for the medical profession in Ireland. The Draft Heads contains many improvements on the current Act and will allow for more flexible regulation which will support good medical practice and protect the public. I particularly welcome the support given in the draft for Competence Assurance Structures and the fact that the proposals, if enacted, will allow all doctors to take part in such structures in an open manner without fear of records, honestly produced, being used against them."



Dr John Hillery
President of the Medical Council

He continued: "Though there are radical changes proposed for the membership of the Medical Council, I am glad that self-regulation by the profession is still an option contrary to the reports of earlier this year."

This has been the key point of criticism by commentators, particularly in the national media. It has been perceived as a caving-in to the medical profession. In 2004, the then Minister, Micheál Martin, had proposed a Medical Council of 35 members, to include 12 non-doctor members. Minister

Summary of Bill

The principal elements of the Bill are:

- comprehensive updating of the legislation regulating medical practitioners;
- an explicit definition of the role of the Medical Council as being the competent authority to protect the public interest;
- a significantly increased lay membership of the Council. A majority of persons on the Council will not be nominated or elected by the medical profession;
- a new obligation on the Council to adhere to governance arrangements applicable to other statutory bodies in the health service;
- accelerated investigation mechanisms including the setting up of an assessment committee prior to Fitness to Practice investigations and the appointment of investigators to facilitate such preliminary investigations. A new Health Committee will be given a statutory basis for inquiries on health grounds;
- streamlined registration processes for medical practitioners generally;
- prohibition on unregistered medical practitioners engaging in the practice of medicine;
- a new statutory framework for the maintenance of professional standards of registered medical practitioners;
- an obligation on the Health Service Executive to facilitate the maintenance of professional standards and competence of medical practitioners (e.g., clinical audit, continuing medical education, peer review);
- the holding of professional misconduct inquiries in public, unless the complainant or person being investigated objects;
- streamlining of the functions of the Postgraduate Medical and Dental Board into the Health Service Executive and the Medical Council, as appropriate;
- new medical education and training provisions;
- measures to implement an EU Directive on recognition of qualifications as it relates to medical practitioners.

MEDICAL COUNCIL MEMBERSHIP

Under the proposed legislation, the new Council will have 25 members:

- 7 seven members will be elected from among medical practitioners;
- 5 five will be nominated by medical schools and training bodies;
- 7 seven members will be from the general public who are not medical practitioners;
- 4 four will be nominated by professional and other bodies;
- 2 the final two, who may or may not be medical practitioners, will be nominated by the Minister.

Harney decided to keep with the current 25 members, with seven of them being non-doctors.

Interestingly, the Professional Conduct Committee will have a lay majority. This is described in the *Irish Medical News* as "something which will alarm many doctors and will be welcomed by the public as a sign of greater accountability." However, there is a proposed Preliminary Proceedings Committee, with a majority of doctors, which will screen cases before they proceed to the Professional Conduct Committee.

The Minister was stung by some of the criticism and issued a statement the day after the publication of the Draft Heads of Bill in which she strongly challenged the critical commentary. She said: "This proposed legislation represents a fundamental change which appears to have been glossed over. Under it, the control of medical regulation by doctors themselves will be over. That is as plain as day. The medical profession will no longer control the Medical Council. The Medical Council will not police itself, by itself."

Submissions

Submissions from interested parties were invited by the Department of Health and Children.

In its submission, the Medical Council expressed concern about its independence. "As worded, it will allow a future Minister for Health to block Council activities which, though in the interests of patients, give discomfort to officials at a local or national level and the Health Services Executive, for example, could with the current drafting, be able to put service provision above medical professional standards," warned Dr Hillery. It is looking for the rewording of the relevant section of the Bill.

Another major issue the Council has with the draft Bill related to the future funding of life-span medical education, with the majority of funding proposed to come from the medical profession. "The vast increase in resources that will be needed…is not supportable by the profession. …the resource provision for medical regulation must be spread beyond the profession," said Dr Hillery. The Council is also of the view that for medical regulation to work for the good of patients, it must have ownership by individual doctors. "This requires a medical majority on Council," he said.

The IMO's submission highlights the medical profession's misgivings about aspects of the proposed Bill. Its submission states: "Changes in regulation should not be designed to intimidate doctors and in particular should not inhibit them from speaking out on behalf of their patients by making them feel that such disclosure may expose their clinical practice to unnecessary or inappropriate scrutiny. The vast majority of doctors provide high quality clinical care and wish to have this recognised by peer assessment in a manner which engenders confidence amongst the public at large."

The IMO also has concerns about a safe systems approach which seeks to find people to blame rather than ways of identifying risk and preventing system errors. It fears this could lead to a culture of fear and secrecy rather than one of openess.

However, its biggest concern is that of timing. "We believe that the approach being proposed represents such a quantum leap from existing provisions and the capacity of the Irish health service and the Medical Council to cope with such change as to be unmanageable in the timeframe proposed." See panel story on 'Overload dangers'.

IDA position

Given the likely subsequent introduction of similar legislation to cover the dental profession, the Irish Dental Association is closely monitoring the progress of the Medical Practitioners Bill. While the IDA has no formal position on the Bill as it covers non-dental areas, it is supportive of the positions taken and submissions made by its sister organisations representing the medical profession.

WARNING OF POTENTIAL CHAOS

The following is taken from the IMO Submission.

"The fact that we are simultaneously seeking the introduction of:

1. a new HSE complainst structure;
2. revisions in the disciplinary procedures for certain medical staff;
3. a new Trust in Care procedure to deal with the allegations of assault against patients;
4. new and advanced risk management systems;
5. a procedure (Dignity at Work) for dealing with complaints of bullying and harassment of staff;
6. new workplace advocacy (or 'whistle-blowing') procedures in the health service; and,
7. the development of new Omsbudsmand procedures;

means that a coherent mapping exercise is required to prevent serious overlap and to prevent an overload that could cause untold chaos in our health services.

PEER REVIEWED

Oral and dental aspects of Sjögren's syndrome

Precis: Dentists can play a pivotal role in the diagnosis, investigation and management of patients with Sjögren's syndrome, many of whom have significant oral health needs.

Abstract: Sjögren's syndrome is a common condition which can result in significant physical and emotional debility. Dentists can play a pivotal role in the prompt diagnosis, investigation and management of patients with Sjögren's syndrome. A sound understanding of the pathogenesis, presentation and current management of Sjögren's syndrome, will enable the general dental practitioner to make a significant contribution to the oral health and general well-being of those affected by the disease. This article aims to provide the general dental practitioner with a comprehensive and practical guide to current developments and best practise in the care of these individuals.

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Background

Sjögren's syndrome is a chronic multi-system autoimmune disorder of the exocrine glands. It is characterised chiefly by focal inflammation of the salivary and lacrimal glands, leading progressively to glandular dysfunction, which presents as dryness of the mouth (xerostomia) and eyes (keratoconjunctivitis sicca). Other exocrine glands including those of the respiratory and gastrointestinal systems, skin and vagina can be affected.

Sjögren's syndrome can occur as either primary Sjögren's syndrome (primary SS) or secondary Sjögren's syndrome (secondary SS). Primary SS is characterised by xerostomia and keratoconjunctivitis sicca without a major connective tissue disease, although there may be other extraglandular features. Secondary SS refers to patients who have salivary and lacrimal gland involvement in association with a major connective tissue disease. Rheumatoid arthritis is by far the commonest connective disease associated with secondary SS, but others include systemic lupus erythematosus, scleroderma, polymyositis, or occasionally, primary biliary cirrhosis. Patients suffering from primary SS often have more severely affected salivary and lacrimal glands.[1]

Up to a third of patients suffer systemic extraglandular manifestations as a result of infiltrates in other organ systems.[2] These extraglandular manifestations may include arthritis, Raynaud's phenomenon, pulmonary disease, thyroiditis and vasculitis. Haematological abnormalities may be detected including leukopenia, lymphopenia and thrombocytopenia.[3] Of particular concern is the increased risk of lymphoma in patients with primary SS.

In addition to the physical effects of Sjögren's syndrome, patients can suffer significant emotional and social upset resulting in diminished self-esteem, social interaction and personal comfort.[4] Patients with Sjögren's syndrome have been shown to be at increased risk from clinical depression and anxiety.[5,6]

Epidemiology

In the past, the lack of widely accepted diagnostic criteria has hindered the diagnosis of Sjögren's syndrome and consequently there has been wide variation in the reported prevalence. It has been reported to affect between 0.1% and 3% of the U.S. population. In the U.K. it has been estimated that up to 4% of the adult population are affected, numbering up to 500,000 sufferers.[7] Sjögren's syndrome is considerably more common in females than males with a male to female gender ratio of 1:9, with males suffering a more benign

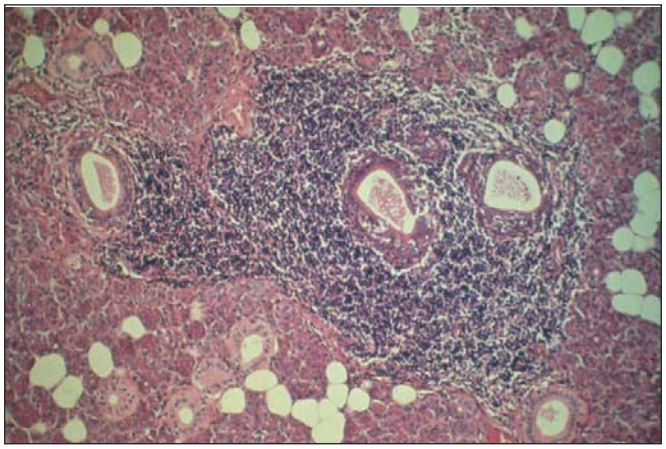

FIGURE 1: *Focal periductal lymphocytic infiltration with destruction of salivary acini and ducts in the parotid gland.*

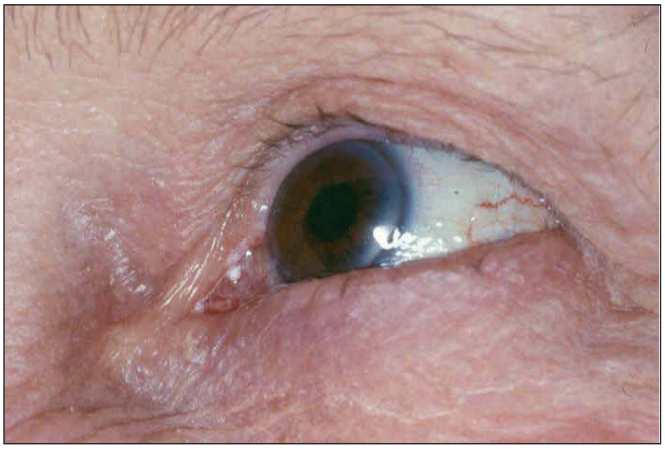

FIGURE 2: *Keratoconjunctivitis sicca in Sjögren's syndrome may produce blurred vision, conjunctivitis and corneal abrasions.*

disease with fewer serological abnormalities and extraglandular manifestations.[8] It is a disease of the middle aged and elderly with a diagnosis often made in the sixth decade. Sjögren's syndrome has been reported infrequently in children and adolescents. In these younger age groups bilateral parotid enlargement is the most common sign at presentation.[9] Consequently, Sjögren's syndrome should be considered in the differential diagnosis of pediatric and adolescent patients with recurrent salivary gland enlargement especially when associated with chronic dry mouth or chronic irritation of the eyes.[10]

Pathogenesis

Sjögren's syndrome is an autoimmune disease with a variety of immunological abnormalities. Histopathology of affected major salivary glands reveals a characteristic dense infiltrate of lymphocytes, histiocytes and plasma cells. Initially the *lymph*ocytic infiltration is focal and periductal but as the disease progresses normal salivary acini and ducts are destroyed and the infiltrate becomes more diffuse (**Figure 1**). Islands of salivary duct epithelium may survive and proliferate to form epimyoepithelial islands. The biopsy features in minor salivary glands may mirror those seen in the major salivary glands, with the exception that epimyoepithelial islands are rarely seen in the former. The vast majority of lymphocytes infiltrating the gland are $CD4^+$ T-helper cells and B cells making up roughly 20% of the infiltrate.[11]

A number of different autoantibodies may be present in both primary and secondary Sjögren's syndrome. These include rheumatoid factor and antibodies to Ro/SSA, La/SSB and salivary duct antigen. The non-organ-specific autoantibodies anti-Ro/SSA and anti-La/SSB are diagnostically the most important. The reported frequency of these antibodies in patients with Sjögren's syndrome varies and depends, in part, on the techniques used to measure them.[2] Antisalivary duct antibodies are frequently present but are likely to be an epiphenomenon induced by salivary duct damage. Most patients have a raised total serum IgG and circulating rheumatoid factor (antibodies to human IgG), although their role in the destruction of salivary and lacrimal gland tissue is unclear.[12] The detection of serum autoantibodies against muscarinic M3 receptors, which are expressed in salivary and lacrimal glands, supports a possible immune mediated neural pathogenesis for Sjögren's syndrome. These autoantibodies may have an inhibitory effect on parasympathetic neurotransmission, resulting in diminished salivary and lacrimal gland secretion.[13]

Individuals who have a family history of Sjögren's syndrome may be at increased risk of developing the condition. This possible genetic predisposition to Sjögren's syndrome is associated with specific genetic markers such as human leukocyte antigens HLA-DR3 and DRw52.[11] It has been suggested that viral infections may act as environmental triggering factors in Sjögren's syndrome. It is possible that certain agents such as Epstein-Barr virus (EBV), human immunodeficiency virus (HIV) and cytomegalovirus (CMV) may have sequence homology with the Ro/SSA and La/SSB macromolecules. Molecular mimicry following such a viral infection may promote the production of anti-Ro(SSA) and or anti-La(SSB) antibody. It has also been hypothesised that a genetically based abnormality or viral infection could trigger glandular cells to undergo premature apoptosis (programmed cell death) with the resulting expression of Ro(SSA) and La(SSB) macromolecules on the cell surface membranes acting as a trigger for the production of anti-Ro(SSA) and or anti-La(SSB) antibody.[2] Lastly, on the basis that Sjögren's syndrome has a significant predilection for females, it has been suggested that sex hormones may play a role its pathogenesis.[14]

Diversity of presentation

Patients suffering from Sjögren's syndrome may exhibit a broad range of glandular and extraglandular manifestations. While many will present with the classic symptoms of dry mouth and dry eyes (**Figure 2**), others may present with more non-specific symptoms such as fatigue, arthralgia, pancreatic insufficiency or dryness of the skin. Others may be investigated for Sjögren's syndrome on the basis that they have a previously diagnosed connective tissue disease.

As a consequence of this diversity, patients originally presenting to their general medical or dental practitioner, may be referred to a broad range of clinical specialties including, ophthalmology, oral

TABLE 1: Common intra-oral signs of salivary gland hypofunction in Sjögren's syndrome

- Reduced salivary volume or altered consistency:
  - ☐ Absence of salivary pooling in the floor of the mouth.
  - ☐ Frothy saliva along lines of mucosal contact.
  - ☐ Thickened stringy saliva.
  - ☐ Reduced clearance of food debris.
  - ☐ Lack of salivary flow following massage of major salivary glands.
- Oral mucosal changes:
  - ☐ Dry, wrinkled, parchment like mucosa.
  - ☐ Lobulated tongue (Figure 4), with erythema and depapillation.
  - ☐ Candidal infection – angular cheilitis/ denture stomatitis/thrush.
  - ☐ Periodontal disease.
- Oral hard tissue changes:
  - ☐ Dental caries – cervical/root/incisal.
  - ☐ Tooth erosion.

FIGURE 3: *Suppuration from the parotid duct in a case of acute ascending Parotitis secondary to salivary gland hypofunction in Sjögren's syndrome.*

TABLE 2: EU-USA Consensus Classification Criteria (2002) for Sjögren's syndrome

- **i) Oral symptoms**: a positive response to at least one of the following questions:
  - ☐ Have you had a daily feeling of dry mouth for more than three months?
  - ☐ Have you had recurrently or persistently swollen salivary glands as an adult?
  - ☐ Do you frequently drink liquids to aid in swallowing dry food?
- **ii) Ocular symptoms:** a positive response to at least one of the following questions:
  - ☐ Have you had daily persistent troublesome eyes for more than three months?
  - ☐ Do you have a recurrent sensation of sand or gravel in the eyes?
  - ☐ Do you use tear substitutes more that three times a day?
- **iii) Objective evidence of ocular involvement** defined by a positive result for at least one of :
  - ☐ Schirmer's 1 test without anaesthesia (≤ 5mm in 5 minutes).
  - ☐ Rose bengal score other ocular dye score (≥ 4).
- **iv) Abnormal minor salivary gland biopsy**.
- **v) Objective evidence of salivary gland involvement** defined by a positive result for at least one of :
  - ☐ Unstimulated whole salivary flow ≤ 1.5mls in15 minutes.
  - ☐ Parotid sialography showing diffuse sialectesis.
  - ☐ Salivary scintigraphy with delayed uptake, reduced concentration or delayed excretion.
- **vi) Positive Serology** with antibodies to Ro/SSA or La/SSB antigens, or both.

Exclusion criteria: past head and neck radiation treatment, use of anti-cholinergic drugs, graft-versus-host disease, sarcoidosis, pre-existing lymphoma, AIDS and Hepatitis C infection.

medicine, rheumatology or general medicine.[15] Once a diagnosis of Sjögren's syndrome has been reached a multi-disciplinary team based approach is necessary for optimal management and the specialist treatment of complications.

Oral, perioral and ocular manifestations

Although a classic feature of Sjögren's syndrome, many patients do not specifically complain of dry mouth.[16] Conversely, not all patients complaining of dry mouth have objective evidence of salivary gland hypofunction. Common oro-facial presenting complaints in Sjögren's syndrome include; oral soreness, a burning mouth sensation, difficulty in swallowing, speaking and eating dry foods, changes in taste or a bad taste in the mouth (dysguesia) and difficulties with denture control.

Recurrent or persistent swelling of the major salivary glands occurs in up to one third of adult patients. Bilateral parotid swelling is reported to be even more common in juvenile and adolescent Sjögren's syndrome, being the most common sign at presentation.[9] The swelling is usually painless unless ascending bacteria from the oral cavity, facilitated by a decreased salivary flow and altered salivary composition, give rise to ascending sialadentitis. In such cases, the affected gland(s) become tender to palpation and the patient may feel systemically unwell, with the skin overlying the affected glands becoming red and warm. Often a mucopurulent discharge can be seen intraorally at the duct orifice (**Figure 3**). Common intra-oral signs of salivary gland hypofunction in Sjögren's syndrome are summarised in **Table 1**.

The literature shows conflicting results regarding the risk of periodontal disease in Sjögren's syndrome. Although the reduced salivary flow and altered composition in Sjögren's syndrome influences bacterial clearance and plaque accumulation, resulting in an increased caries experience, the relationship between salivary flow and periodontal disease has not been clarified yet.[17] Najera *et al.*[18] reported a 2.2 times higher risk of adult periodontitis among primary SS patients but these patients had a higher plaque index than controls. Controlled studies by Schiødt *et al.*[19] and Mutlu *et al.*[20] found

TABLE 3: Twelve point plan for the management of Sjögren's syndrome

1 Treatment is symptomatic. There is no currently available cure for Sjögren's syndrome.
2 A multidisciplinary approach is required. Referral to other specialties may be appropriate.
3 Patients should be reassured that the damaging effects of the condition can be controlled and given details of support groups.
4 The patient's medication must be checked for drugs that cause or contribute to xerostomia.
5 Physiological (chewing gum) or pharmacological agents (Salagen®) may be employed to stimulate salivary flow when residual salivary gland function is present.
6 In the absence of residual salivary gland function, salivary substitutes are indicated ranging from frequent sips of water to commercially available preparations such as the Bioextra Programme®.
7 Humidifiers can provide symptomatic relief, particularly for dry and crusted lips at night.
8 For dentate patients a caries prevention programme should be implemented, incorporating:
– 3-4 monthly dental and hygienist appointments.
– Dietary analysis and advice.
– Regular application of topical fluoride using custom made trays.
– Oral hygiene instruction with fabrication of customised brush grips where required.
– Active caries should be removed and restored with fluoride releasing restorative materials where appropriate and the caries rate stabilised.
9 Before providing extensive restorative or prosthodontic treatment, give due consideration as to whether the patient will be able to maintain it.
10 Dentures should be managed symptomatically and denture hygiene emphasised. In selected cases an implant supported prosthesis may provide a viable alternative.
11 Candidal mucosal infections should be diligently managed with topical and/or systemic antifungal agents.
12 Ascending bacterial sialadenitis should be managed with antibiotics and patients should be observed for the possible development of lymphoma.

no difference between primary SS patients and controls and concluded that primary SS does not appear to be associated with an increased risk of periodontal disease.

Conjunctival injection is common and may be evidence of ocular involvement in Sjögren's syndrome. Progressive inflammatory destruction of the lacrimal glands results in dryness and repeated blinking and rubbing of the eyes may produce corneal abrasions. In addition a decrease in the aqueous component of the tears may result in mucous threads around the eyes. Blurring of vision is common and severe dryness can produce a deep aching pain around the eyes.[2]

Classification Criteria

Many different sets of diagnostic and classification criteria have been advocated and disparately employed for Sjögren's syndrome, including those from Copenhagen, Japan, Greece, California and the European Union (EU).[21] This lack of uniformity has hindered the diagnosis of Sjögren's syndrome and resulted in a wide variation in the reported prevalence of the disease. It is hoped that a broader utilisation of the EU-USA Consensus Classification Criteria (2002) will better facilitate the diagnosis of Sjögren's syndrome.[1] The EU-USA Consensus Classification Criteria are listed in **Table 2**.

There are a number of exclusion criteria since it is now accepted that certain conditions, such as chronic HCV infection, may mimic the clinical, histological or immunological features of primary SS. According to the EU-USA Consensus Classification Criteria, a diagnosis of primary SS can be made when four of the six criteria are satisfied, provided that either the histopathology serology are positive (criteria IV and VI). A diagnosis of secondary SS can be made for patients with a well defined connective tissue disease, where there are positive symptoms (criteria I or II) in the presence of any two of criteria III, IV or V.

Investigation and diagnosis

The onset of Sjögren's syndrome is usually insidious with patients finding it difficult to remember exactly when their symptoms started. In addition, delays of between three and eleven years are reported in the literature from the start of such symptoms to the establishment of a final diagnosis.[22] Although there is no cure for Sjögren's syndrome at present, early diagnosis and management are imperative in minimising the damaging physical and psychological effects of the condition.

It is important to take a thorough history particularly in relation to medication and to consider other possible causes or contributory factors for xerostomia such as irradiation of the salivary glands, sarcoidosis, diabetes mellitus, renal failure, viral infectious agents (HIV or hepatitis C virus), infiltrates (amyloidosis or haemochromatosis) and graft-versus-host-disease.

Examination by an ophthalmologist will be required to confirm lacrimal gland hypofunction. The Schirmer's test is use for quantitative measurement of tear production, and corneal ulceration and filiform defects can be visualised and graded with slit-lamp examination using rose bengal or lissamine green dye.

Serological testing using enzyme linked immunosorbent assay (ELISA) techniques has demonstrated a high frequency of anti-Ro/SSA antibodies in secondary SS. Anti-La/SSB antibodies are the marker for primary SS but can also occur in secondary SS. The high levels of anti-Ro/SSA and anti-La/SSB reactivity in Sjögren's syndrome obviates the need for a labial salivary gland biopsy in the majority of cases, when using the EU-USA Consensus Classification Criteria but a biopsy should be considered if lymphoma is suspected.

Sialometry (the measurement of salivary output) may be performed using a variety of techniques, although the unstimulated whole salivary flow rate (UWSFR) has been adopted by the EU-US Consensus

Group. Saliva is deposited in a test tube over 15 minutes with a value of less than 1.5mls suggestive of salivary gland hypofunction. The Stimulated Whole Salivary Flow Rate (SWSFR), using either a chewing gum test or a Saxon test (preweighed gauze is chewed for two minutes and then weighed again) may also be employed.

Sialography involves the injection of a radioopaque dye into Wharton or Stenson's duct followed by imaging with an extraoral radiograph. It is currently the optimal method of visualising the duct architecture, with the presence of punctate sialectasia (dilatation of the acinar system) taken to be consistent with Sjögren's syndrome. The diagnostic accuracy, however is observer dependent and requires specific expertise in diagnosing and staging Sjögren's syndrome.[23] Other imaging procedures such as computed tomography (CT) and magnetic resonance imaging (MRI) are valuable in the investigation of salivary gland enlargements and masses, while ultrasonography is of particular use in identification of cystic lesions present in HIV related salivary gland disease. Salivary scintigraphy is a functional test that may also provide useful information.

Since systemic involvement is common in Sjögren's syndrome it may also be necessary to perform a number of routine haematological and biochemical blood tests together with additional immunology beyond anti-Ro/SSA and anti-La/SSB antibody screening.

Management

Since there is no currently available cure for Sjögren's syndrome, the mainstay of treatment is symptomatic with an emphasis on minimising the adverse physical and psychological sequelae of mucosal dryness, including corneal damage, rampant caries, candidal infection and a consequential loss of quality of life.

The management of Sjögren's syndrome requires a multi-disciplinary approach and may require input from many parties including the dentist, general medical practitioner, ophthalmologist, rheumatologist and oral medicine specialist.

Patients should understand that the condition is progressive and irreversible, but that with careful management, the harmful effects can be diminished. Patient support groups such as the Irish Raynaud's and Scleroderma Society (www.irishraynauds.com) can be sources of valuable information and support.

Dry eyes can be treated symptomatically through the use of artificial tear solutions (hypromellose). In addition mucolytic agents (acetylcysteine) can be used to break down mucous threads. Punctal occlusion may help the instilled artificial tears to remain in the eye for a longer time. Treatment is aimed at improving patient comfort and preventing corneal damage and conjunctivitis.

The patient's medication regimen must be checked, particularly for drugs with anticholinergic or sympathomimetic effects. Popular anticholinergics include antihistamines, ipratroprium inhalers, phenothiazines and tricyclic antidepressants. The patient's physician may be able to prescribe alternative drug therapy with reduced anticholinergic effects. In particular, Serotonin-specific reuptake inhibitors are reported to cause xerostomia less frequently than do tricyclic antidepressants.[24]

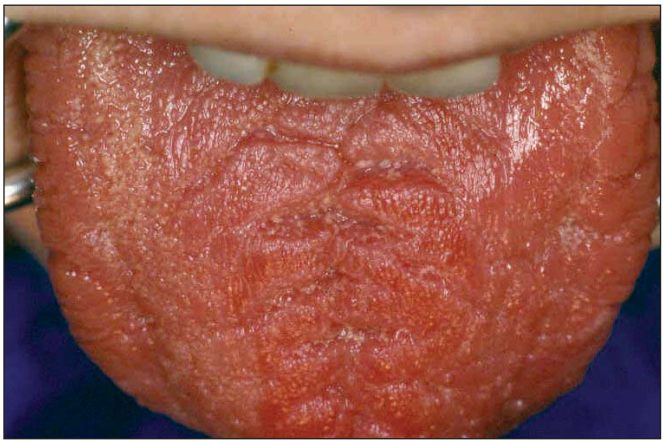

FIGURE 4: *Desiccation of the tongue with early lobulation in Sjögren's syndrome.*

Stimulation of saliva may be possible for patients with residual gland function through both physiological and pharmacological means. This may be suitable for patients in the earlier stages of Sjögren's syndrome before gland function has been significantly compromised and is preferred to the use of a saliva substitute because of the protective effects of natural saliva. Physiological stimulation can be accomplished through the use of agents such as sugar free chewing gum whilst pharmacological stimulation is achieved through the use of the cholinergic agonist drug, pilocarpine hydrochloride (Salagen®). The drug can improve salivary flow within 30 minutes of administration and has a duration of action of approximately two to three hours. The usual maintenance dose is 5mg four-times-daily. Adverse effects include sweating, increased pulmonary secretions and tachycardia and the drug is contraindicated in renal colic, gall bladder disease and narrow-angle-glaucoma. Caution should also be exercised with asthmatics or those taking beta-blockers. Cevimiline is a new cholinergic agonist drug which binds selectively to muscarinic M_3 receptors in salivary glands.[25] Cevimiline has a longer duration of action and less side effects but has not yet been licensed for use in the Republic of Ireland. While many patients, with secondary SS take NSAIDs and systemic steroids for the treatment of extraglandular complications such as arthritis, vasculitis and pulmonary involvement, these drugs appear to be of little benefit in preventing progressive lacrimal and salivary gland damage.

For patients who do not respond to salivary stimulation, salivary substitutes, often based on carmellose or mucins can be used. However, they can be expensive and messy and the benefit is often limited and of short duration. They largely fail to replace the protective role of saliva and many patients prefer to sip water regularly. For dentate patients, substitutes should ideally contain fluoride and be non-acidic and alcohol free. The Bioextra Programme® is a non prescription range of moisturising gel, alcohol-free fluoride containing mouthrinse and toothpaste which through its content of salivary peroxidase and oxidase enzymes and other agents such as lactoferrin and lysozyme, is designed to emulate the protective

functions of natural saliva. Other preparations take the form of sugar-free, acidic sialaogogues (Salivix® pastilles) for the edentulous patient. However, in severe xerostomia there may be insufficient saliva to dissolve them. Patients frequently complain of waking up in the night with dry crusted lips. The use of a room humidifier increases environmental humidity and may help in this regard.

In order to reduce the risk of dental caries it is essential that a caries prevention programme is implemented, incorporating dietary advice, fluoride treatment and oral hygiene instruction. Frequent dental visits with clinical examination and bitewing radiographs are necessary and hygienist appointments should be arranged at three monthly intervals. Patients should be left in no doubt that the use of sugary sweets throughout the day to stimulate salivary flow will result in significant dental decay. Topical fluorides are essential and daily application of either 0.2% sodium fluoride gel (Oxyfresh Dental Gel) or 0.4% stannous fluoride gel (Gelcam, Omnigel) in custom trays for five minutes will force the fluoride into the at-risk interproximal and cervical areas. Acidulated phosphate gel is not recommended for daily application as it may etch and degrade the surface of glass ionomers and composite resins.[26]

Many patients with secondary SS suffering from rheumatoid arthritis or systemic sclerosis (scleroderma) suffer the additional burden of impaired manual dexterity, making oral hygiene duties difficult to perform, even with the aid of electric toothbrushes. The fabrication of a customised toothbrush grip using silicone impression material can greatly facilitate this task.

Active caries must be removed and restored with either a temporary filling or simple permanent restoration. Fluoride-releasing glass ionomer restorations are an attractive option because of their inherent adhesion to dentine and their reported ability to prevent secondary caries. However their mechanical properties and wear resistance are inferior and they should not be over dried as studies indicate that the material becomes stressed and loses marginal integrity when dehydrated.[27,28] The repeated use of topical fluorides may result in deficient enamel etching and subsequent bonding failure with composite restorations. Until the caries rate is stabilised, fixed prosthodontics should be used sparingly as the risk of cervical caries is high. Amalgam should be used as a core material and splinting of crowns should be avoided as individual crowns are easier and less costly to replace if caries recur.[12]

Removable prostheses can be problematic both from a functional and tissue health perspective. The chances of successful denture wear will depend on many factors including the quality of the residual ridge, patient adaptability and of course, the degree of xerostomia. Many techniques including dentures fabricated with reservoirs for continuous delivery of artificial saliva have been employed with varying degrees of success.[29] However, for those patients unable to cope with conventional dentures an implant supported prosthesis if feasible, may be a viable alternative.[3] Most patients suffering from Sjögren's syndrome can be suitable candidates for implant therapy, and should not have an altered bone healing response. However, while two case reports have shown good results,[30,31] it should be noted that there is minimal long-term documentation in the literature regarding the use of osseointegrated implants in patients with Sjögren's syndrome.[32]

The diligent management of candidal infection is of paramount importance and will help in the reduction of mucosal soreness. The patient's individual propensity to candidal infection will depend on their level of salivary gland function and may be increased by other factors such as denture wear and hygiene. Other common predisposing factors for oral mucosal candidal infection, such as anaemia, diabetes or the use of a steroid inhaler should also be considered. Topical antifungal agents such as nystatin suspension (not pastilles) can be used along with an antiseptic mouth rinse such as chlorhexidine gluconate (0.2%). Miconazole gel can be applied topically to the fitting surface of a denture or to the commissures for the treatment of angular cheilitis. The periodic use of systemic antifungal agents such as fluconazole is occasionally warranted. Lastly, patients must be made aware that dentures will act as a reservoir for fungal infection and should be soaked overnight in dilute sodium hypochlorite, nystatin or chlorhexidine, if their candidal infection is to be controlled.

Ascending bacterial infection most commonly occurs in the parotid gland, and once pus has been obtained for culture and sensitivity, flucloxacillin should be administered as penicillinase producing *Staphylococcus aureus* is a common causative agent. Much less frequently, but more ominously, clinicians must be mindful that patients, especially those with primary SS, have an increased risk of developing non-Hodgkin's B-cell lymphoma.[33,34] As a consequence, unexplained or sudden salivary gland enlargement particularly in longstanding cases must be treated with due suspicion. In spite of this, primary SS is characterised in general by a comparatively mild and stable course of glandular and extraglandular manifestations and a population based cohort study on survivorship failed to demonstrate an increased mortality of patients with primary SS.[11,35]

Conclusions

Sjögren's syndrome is a common inflammatory disorder of the exocrine glands with the capacity to cause significant physical, emotional and social damage to those affected. The early diagnosis and treatment of Sjögren's syndrome is of paramount importance, in order to minimise these damaging effects. The general dental practitioner is ideally placed to play a pivotal role in the diagnosis and management of patients with Sjögren's syndrome. Once suspected cases have been identified, collaboration with other disciplines including general medicine, ophthalmology, dermatology and rheumatology may be necessary for definitive diagnosis, immediate treatment and specialist management of complications. Throughout this process, the general dental practitioner will play a central role in the practical management of these patient's significant and frequently distressing oral complaints. A sound understanding of the pathogenesis, presentation and current management of Sjögren's syndrome, will enable the general dental practitioner to make a significant contribution to the oral health and general well-being of those affected by Sjögren's syndrome.

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PEER REVIEWED

Vocational Training in Ireland: An Overview

Abstract

Vocational training in dentistry in Ireland was first established in 1999 to introduce new graduates to the practice of dentistry and to provide general dental training. The Vocational Dental Practitioner (VDP) spends two days per week in private practice, two days in the health board and one day on day-release attending lectures.

Their salary is paid by the Health Service Executive (HSE).

The VDP completes a portfolio book throughout the year to demonstrate their progress.

Vocational training is not currently mandatory in Ireland. However it does come highly recommended as an excellent start to any dental career.

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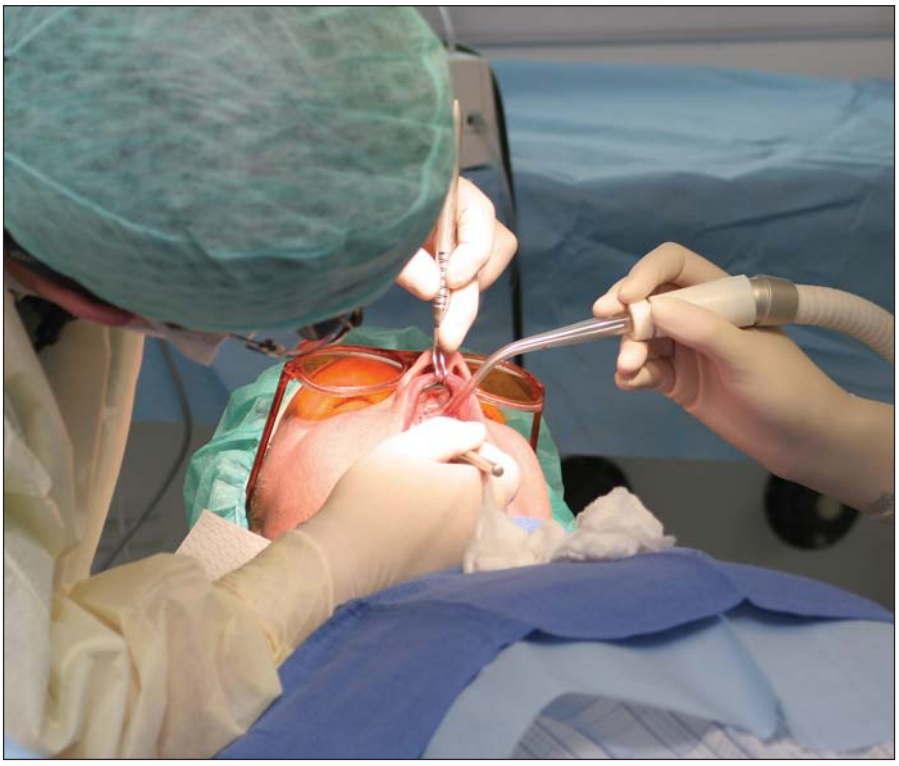

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Introduction

Vocational training in dentistry in Ireland was first introduced in 1999 and was originally set up as a pilot programme for five years. It was aimed at dental graduates from Dublin, Cork and Belfast dental schools and also Irish students graduating abroad. Its objective was to provide a gentler introduction for new graduates to the practice of dentistry and to build on their training.

In the scheme, each Vocational Dental Practitioner (VDP) is allocated to a pair of trainers; one in private practice and one in the Health Services Executive (HSE), previously known as the Health Board.

The VDP spends two days a week in private practice, two days in the HSE clinic and one day on day-release attending lectures.

Advantages for trainers

- Introduces a vibrant young dentist to the practice team and a breath of fresh air into the practice. (Practice can be a lonely place!) A VDP is a welcome colleague to many sole practitioners.
- Stimulates professional development.
- New graduate brings up-to date knowledge.
- Utilises spare surgery.
- Contributes financially to the practice: training grant and fees earned by VDP.
- Alternative to searching for an associate.
- VDP may stay on as associate afterwards.
- Opportunity to give something back to dentistry.

Advantages for VDPs

- Financial certainty for the year: allows VDP to concentrate completely on developing their clinical skills.
- Learn from experienced trainers.
- Experience dentistry in both practice and HSE settings. Helps the VDP make more informed career choices.
- Equivalent to hospital year for MFDS purposes.
- Benefit from day release lecture series.
- Gradual transition from graduation to the coal face.
- 24 days statutory holidays.

Vocational Training (VT) practices

Each VT practice is inspected to ensure that it upholds high standards. The trainer has to demonstrate his or her suitability for the position. He or she has to have at least four years experience in dentistry and must be able to demonstrate Continuing Professional Development (CPD) accreditation for the previous three years.

A suitably experienced dentist is also selected in the local HSE clinic as trainer for two days a week.

Day release

Thirty study days are held in the Postgraduate Centre in St. James' Hospital, usually on Mondays. These sessions cover topics relevant to private practice, public health, management, administration and finance. These lectures are also open to trainers to attend and have CPD accreditation.

Remuneration

The VDP is paid a salary by the HSE. VDPs can provide treatment for medical card, PRSI and private patients. Any fees earned by the VDP in practice accrue to the practice. The trainer receives a grant of ?7,350 from the Postgraduate Medical and Dental Board towards practice expenses.

The Postgraduate Medical and Dental Board also pays a grant of ?7,350 to the HSE in respect of each trainer provided by them, to help the HSE area in question to replace the service deficit resulting from the trainer's commitment to vocational training.

Requirements of the scheme

The VDP completes a portfolio book throughout the year to demonstrate their progress. A formal project must be completed and presented before certification. This can be done individually or as a group. Vocational training now enjoys the same accreditation as a Junior House Officer year for the purposes of MFDS examinations.

Trainers attend a trainer induction day at the start of the year and two trainer review meetings during the year. The aim of these is to standardise the approach and to allow feedback and discussion of issues that arise.

Discussion

Vocational training is not currently mandatory in Ireland. However it does come highly recommended as an excellent start to any dental career. To date 54 graduates have participated in the scheme. There has been a greater number of females than males which may reflect the greater number of females currently doing dentistry.

Of the 54 participants, six have gone on to specialist training, 12 have remained full time in the HSE, eight went into full time private practice and interestingly, a sizable number kept on a mix of both private practice and HSE work.

Funding

The Achilles heel of the scheme to-date has been the lack of adequate, properly structured funding. Funding is currently arranged on an ad-hoc basis each year. Each HSE region has to agree to fund the salary of VDPs in their area from what is left over in their budget. As a result many of the training places are only finalised just before the deadline. Only eight places were made available the year 2005-06.

What is needed is a proper ring-fenced budget from the Dept. of Health to fund up to 20 training places per year. It is an indictment of our Irish scheme that this year 10 graduates had to go to Scotland to obtain a vocational training place.

Conclusions

The scheme is very useful for graduates when they leave the safety net of dental school. It avoids them suffering the physical and mental shock of having to treat upwards of 20 patients per day immediately on starting their practicing careers.

It will not be possible for all dental graduates in Ireland to obtain the full benefit of a VDP year until proper funding is in place to allow the scheme to be expanded. However for the few who get a place it is a very worthwhile year.

PEER REVIEWED

Avoiding Perforations in Endodontics

Precis: While it will be impossible to eliminate all iatrogenic errors in endodontics, by focusing on key areas during the endodontic process, we can reduce the potential for problems for ourselves and our patients.

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Introduction

A perforation is a communication between the root canal system and the supporting tissues of the tooth or oral cavity.[1,2] Perforations may be iatrogenic, resorptive or carious in origin. Iatrogenic root perforations are the second most common reason for endodontic failure.[3,4] The frequency of iatrogenic root perforations has been reported to range from 3% to 10%.[3,4,5] This article will focus on iatrogenic perforations and their avoidance.

Perforations in endodontics can occur during:

- Access preparation.
- Canal location and identification.
- Root canal instrumentation.
- Post space preparation.

The aim of this article is to:

- Review the causes of perforations.
- Discuss their prevention.

Location and aetiology of root perforations

Kvinnsland *et al.*[6] found that perforations occurred in all tooth groups but were most common in the maxilla accounting for 73% of the cases reported in their study. This correlates well with the frequency of endodontic therapy and the frequency with which endodontically treated teeth received prosthodontics treatment in other studies.[7,8] Such studies show that maxillary teeth receive endodontic and prosthetic treatment more than twice as often as mandibular teeth.

In this study,[6] the maxillary canine was the most frequently perforated tooth, followed by the lateral incisor, and then with about equal frequency the central incisors, premolars and first molar teeth. It is difficult to speculate as to why specifically the maxillary canine was the most frequently perforated tooth.

Kvinnsland *et al.*[6] concluded that in the maxillary anterior teeth, all perforations occurred on the labial aspect of the roots and were due to deficiencies in access extension. In the mandibular arch Kvinnsland *et al.*[6] found that the first molar was the tooth most frequently perforated. It is probable that this tooth is also the most heavily restored tooth in the mandible.

Root perforation occurred during routine endodontic treatment in 47% of the cases while it occurred during post space preparation in 53% of the cases reported.[6] It seems reasonable to conclude that post space preparation adds a significant risk to tooth mortality.

During root canal treatment the most common reason for perforation was attempting to negotiate calcified canals (42%). Calcification occurs typically in elderly teeth, traumatised teeth, teeth with a history of extensive restorations or periodontally diseased teeth.[9,10] It is most commonly referred to as reparative dentine and so is frequently formed in response to injury and appears to be a component of the reparative process.[10] However, it can also be seen in the pulps of normal unerupted teeth.[10] The presence of reparative dentine in the pulp chamber can complicate the location and identification of canal orifices and the floor of the pulp chamber leading to perforations.

Access Cavities

A well designed access cavity is essential for a quality endodontic result.[11] A poorly executed access cavity will compromise the tooth's long term survival.[11] The objective of an access cavity is to create a smooth, straight line path to the canal system while retaining as much tooth structure as possible.[11]

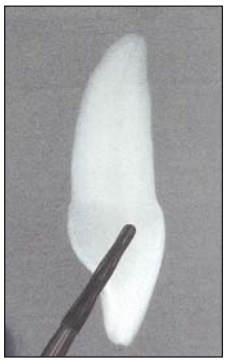

FIGURE 1: *A radiographic image of a maxillary central incisor taken in the mesio-distal plane with a tungsten carbide bur superimposed in the classical access cavity position. It is clear to see how the labial perforation can occur with this approach.*

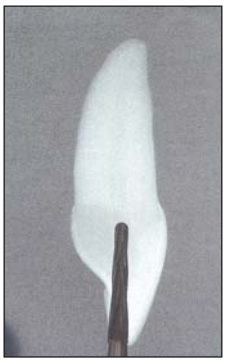

FIGURE 2: *Shows the same radiographic image and bur but using a more incisal approach to the access cavity. This approach significantly reduces the chance of a root perforation on the labial aspect. Secondly, it retains more tooth structure on the palatal aspect of the tooth.*

FIGURE 3: *The clinical presentation of a maxillary left central incisor.*

FIGURE 4: *The radiographic appearance of the maxillary left central incisor.*

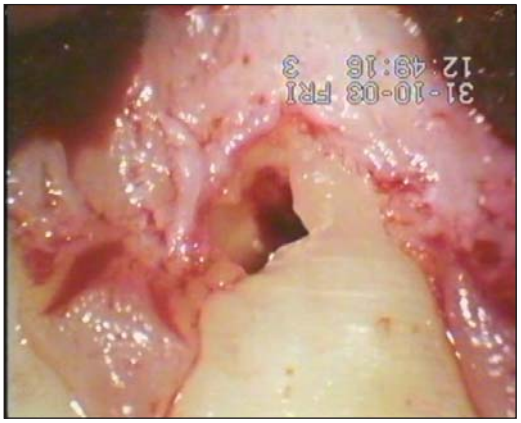

FIGURE 5: *This shows actual perforation following flap elevation using a papillary base incision. Epithelial migration and pocket formation occurs quickly with the loss of crestal bone height.*

Maxillary Anterior Teeth

Kvinnsland *et al.*[6] found that in maxillary anterior teeth, all perforations were located on the labial aspect of the root and concluded that deficiencies in access extension were contributory to the perforation. The traditional approach for access cavity preparation in the anterior tooth is made from the lingual aspect (**Figure 1**). This has not changed over the last thirty years. It is not surprising that perforations resulting from this approach, exit on the labial aspect of the root. Secondly, the perforation site is likely to be located at the buccal crestal bone level.

Straight line access is essential in endodontics as it provides unimpeded access to the critical apical third of the root.[11] However this is not possible on anterior teeth if a lingual approach is taken.[12,13,14] La Turno *et al.*[12] have shown that the traditional lingual approach allows straight line access on only 10% of maxillary central incisors.[12] It seems reasonable that our access approach in anterior teeth should be modified to reduce the potential perforation and that a more incisal approach should be taken (**Figure 2**).

Another added risk with the maxillary anterior teeth, may be the operator's underestimation of the palatal inclination of the roots in the upper jaw.[6] In order to prevent disorientation during access preparation, due consideration should be given to the anatomy of the tooth in question and its orientation intraorally. This should be supplemented with clear pre-operative radiographs. If the tooth poses special difficulties, i.e., imbrication, rotation, dilacerations, which make access preparation more difficult and beyond the limits of the dentist, referral should be considered.

The results of a labial perforation on a maxillary central incisor may be significant as the perforation will occur at or just below the crestal bone level. **Figures 3,4,5** show an upper left maxillary central incisor with an unusually angled root. The perforation which occurred during access preparation resulted from probable disorientation during access preparation.

Another reason to encourage a more incisal access approach relates to the retention of remaining tooth structure. Access cavities positioned in the cingulum area of an anterior tooth, remove a lot of tooth structure to access the pulp space (**Figure 1**). Ingle and Taintor[4] noted also that a failure to reduce the palatal shoulder in maxillary anterior teeth could lead to the excessive removal of labial root dentine and a possible root perforation when the classical cingulum access cavity is adopted. So by electing to access an anterior tooth from the cingulum area, more tooth structure is sacrificed. The incisal approach retains the cingulum area of the tooth (**Figure 2**).

FIGURE 6: *Mandibular lateral incisor which has a lateral root perforation following disorientation during access preparation. The mandibular incisors pose real problems because of their size.*

FIGURE 7: *Shows an actual access cavity position taken in a mandibular lateral incisor tooth which would largely be perceived as ideal.*

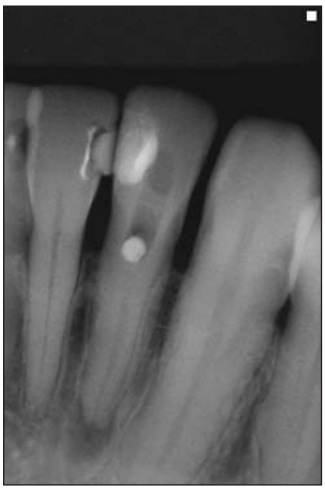

FIGURE 8: *Shows the radiographic appearance of the mandibular lateral incisor tooth at presentation shown in Figure 7.*

FIGURE 9: *Shows the labial view of the same tooth at presentation with the temporary perforation repair just visible at the free gingival margin.*

Mandibular Anterior Teeth

These are broader in the labiolingual dimension than they are mesiodistally and are the smallest teeth in the dental arch. Small errors in the orientation of the access cavity can have disastrous consequences (**Figure 6**).

Similarly, the traditional approach for accessing mandibular incisor teeth, has been to take a lingual approach rather than adopt a straight line approach[11] (**Figure 7**). Likewise perforations resulting from this lingual approach will end up on the labial aspect of the tooth (**Figures 8 and 9**).

The logic behind this lingual access cavity on anterior teeth was to cover up the short comings of the restorative materials of the time such as the silicate cements which were poor aesthetically.[11] However, there have been huge improvements in the aesthetic capabilities of modern restorative materials since the introduction of resin bonded composite materials. Composites build ups involving the incisal edge are routine dental practice and results have become predictable.

Another reason to encourage a more incisal access approach relates to the anatomy of the mandibular incisors with up to 41.4% of these teeth having two separate canals.[15] A lingual access approach may complicate the identification and preparation of the lingual canal.

Posterior Teeth

The advice given in text books is of little value in the placement of access cavities in posterior teeth as it relates the pulp chamber to the idealised occlusal anatomy. Given that the clinician works from the outside in and relating the location of the pulp chamber, this idealised occlusal anatomy is of little value. Most of the posterior teeth requiring endodontic treatment have had extensive restorative treatment and the existing occlusal anatomy may have no relevance to the position of the underlying chamber.

Clinically, it makes more sense to observe the external outline of the tooth at the level of the CEJ which is a fixed landmark rarely involved in the overlying dentistry. The pulp chamber is in the centre of the tooth at this level.[16] Secondly, the walls of the pulp chamber are always concentric to the external surface of the crown at the level of the CEJ.[16] Thirdly, the distance from the external surface of the clinical crown to the wall of the pulp chamber was the same throughout the circumference of the tooth at the level of the CEJ.[16]

Due consideration should be given to the orientation of the tooth intraorally prior to the placement of the dental dam. Mandibular molar teeth are often tilted lingually. Likewise, maxillary molar teeth may be tilted buccally.

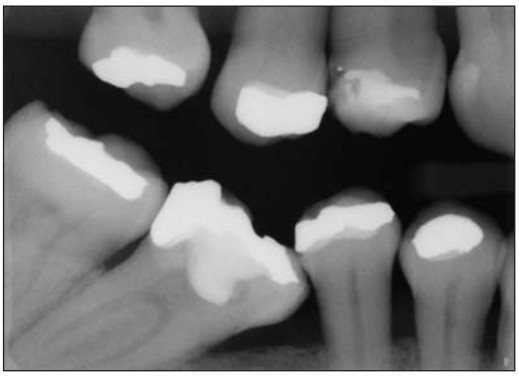

FIGURE 10: *Shows the significant mesial inclination of a tipper mandibular right second molar.*

FIGURE 11: *Shows the significant mesial inclination of a tipped mandibular left second molar following attempted access cavity preparation and the ensuing furcation perforation.*

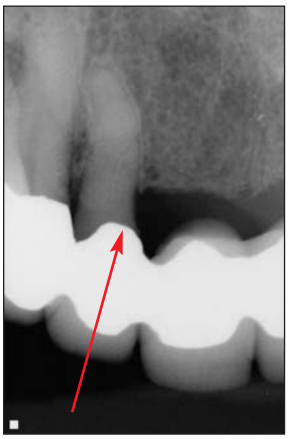

FIGURE 12: *Shows the periapical radiographic view of a maxillary lateral incisor used as an abutment in a long span anterior bridge. The black arrow indicates the long axis of the coronal restoration which is at variance to that of the root.*

FIGURE 13: *Clinical view of the anterior bridge in Figure 12.*

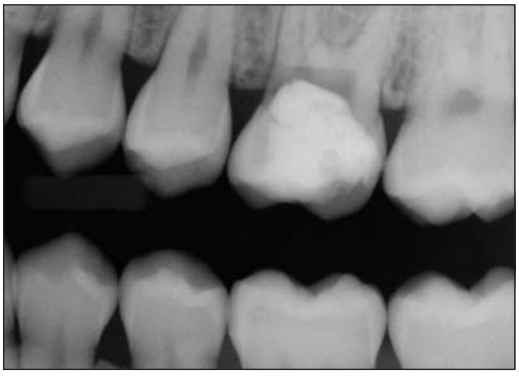

FIGURE 14: *Shows the bitewing view of a maxillary first molar with a mesial perforation following the excessive removal of tooth structure as a result of disorientation and failure to keep to a definite access outline.*

However a pre-operative bitewing view of any posterior tooth undergoing root canal treatment is worthwhile (**Figures 10 and 11**). The presence of restorations can complicate access to the root canal system greatly. Extracoronal restorations may alter the crown root angulation or coronal rotations or occlusal anatomy of the tooth, so that the position of the pulp chamber or canals may not be as expected (**Figures 12 and 13**). In addition, light penetration into the access opening made through a metal restoration is poor, even with the aid of a microscope making identification of key landmarks even more hazardous. The complete removal of the restoration is merited particularly in the presence of secondary decay or poor marginal fit where there will be isolation difficulties compounding the poor access. However, removal of the restoration may make rubber dam placement more difficult and compromise isolation. Under such circumstances, the placement of a semi -permanent restoration may be indicated. Referral should be considered where isolation poses a difficulty beyond the capabilities of the operator.

Access preparation in posterior teeth may be compounded further by mouth opening restrictions which were not anticipated and dictate an alteration in handpiece orientation.

It has been recommended in certain circumstances to carry out the access preparation without having the rubber dam in place so that the different angulations can be more readily appreciated relative to the adjacent teeth.[11] However, the author feels that if there are some concerns regarding the inclination of a particular tooth which may impact on the operator's ability to locate the pulp chamber, multiple tooth isolation with rubber dam will offer the operator the same information but will have all the advantages of the rubber dam. The orientation of the adjacent teeth relative to the tooth in question can be readily visualised.

The Furcation Perforation

The classic furcation perforation is that of the pulp chamber floor of a molar tooth. It usually occurs during access cavity preparation in cases where the normal anatomy is often severely distorted. This is usually from previous restorative dentistry which has resulted in calcifications or operator disorientation in tipped or rotated teeth (**Figure 11**).

Radiographically, the bitewing radiograph is probably the best radiographic view which can be used to assess the position of the pulp chamber, if present, or more importantly the floor of the pulp chamber. From this view, it should be possible to take a measurement of the distance from the occlusal aspect of the restoration or tooth to the level of the pulp floor. Once this distance is fixed and if the operator does not exceed it, it reduces the chances of a chamber floor perforation occurring greatly. However, it will still be possible to perforate the axial walls (**Figure 14**).

FIGURE 15: *Maxillary second premolar following decay removal showing the white axial walls and the greyish calcified pulp chamber which is darker in colour and located centrally. The pulp chamber follows the outline of the root at the cemento-enamel junction level.*

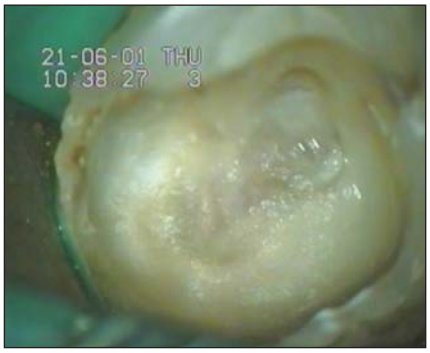

FIGURE 16: *Maxillary right first molar showing calcification of the pulp chamber. However the outline of the chamber is still visible.*

FIGURE 17: *Maxillary right first molar as seen in Figure 16 after the removal of the pulp chamber calcifications. Note the pale grey colour of the pulp floor and the white colour of the axial walls. The pulp chamber can be seen to be in the centre of the tooth.*

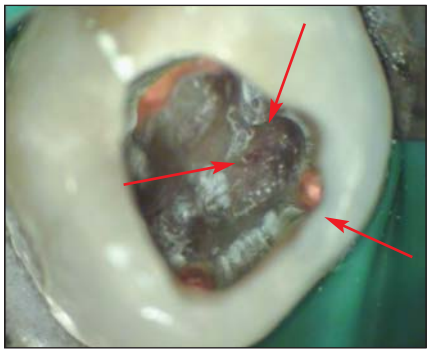

FIGURE 18: *Shows the floor of the pulp chamber of a mandibular left second molar. The area highlighted by arrows is 'blushing' indicating that this is, in all probability, a micro-perforation of the chamber floor. This was subsequently repaired by lining the pulp floor with MTA after completion of the required root canal treatment.*

FIGURE 19: *Shows the radiographic view of the completed root filling on the mandibular left second molar seen in Figure 18. A layer of MTA has been placed across the floor of the pulp chamber and into the canal orifices illustrated by the arrow.*

Illumination and magnification are very beneficial in determining the position of the chamber as it is always darker in colour (**Figure 15**). The reparative dentine or calcifications are lighter in colour than the pulp floor (**Figure 16 and 17**). This colour difference creates a distinct junction where the walls and the floor of the pulp chamber meet. The canal orifices are always located at this junction (**Figure 16 and 17**). Similarly in molar teeth, pre-existing restoration and attempts at pulp chamber location may make canal identification significantly more difficult (**Figure 18**). Sudden changes in colour when searching for a canal are indicative that a perforation is near (**Figures 18 and 19).**

Canal Identification

Kvinnsland *et al.*[6] found that attempts to negotiate calcified canals resulted in 42% of the reported perforations in their study. As discussed above, reparative dentine is frequently found in older teeth or where there is a history of extensive restorations and or previous periodontal disease.

Unfortunately, there is no easy technique for dealing with such cases. It involves knowing the anatomy of the tooth in question, reading and understanding the pre-operative radiographic views of the tooth (which preferably include a bitewing view if it is a posterior tooth) and accessing the pulp chamber using illumination and magnification to detect the colour differences between the pulp floor and the axial walls of the tooth. Once the actual access cavity outline has been prepared following the anatomic guidelines for the tooth in question, the author then switches over to the operating microscope and ultrasonic tips to remove smaller amounts of dentine, looking to differentiate the colours between axial wall dentine and secondary dentine and pulp calcifications (**Figures 15,16 and 17**).

FIGURE 20: *Periapical radiographic view of a maxillary left central incisor with a large periapical radiolucency and showed very obvious pulpal obliteration. Clinically this tooth was symptomatic*

FIGURE 21: *The radiographic view of the completed root treatment on the maxillary left central incisor seen in Figure 20.*

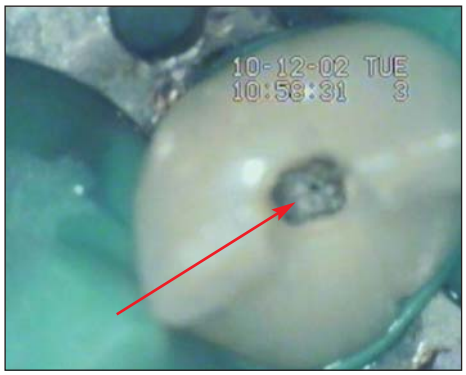

FIGURE 22: *Shows the actual access approach taken on the maxillary left central incisor seen in Figures 20 and 21. The arrow denotes the actual canal system as identified under the operating microscope.*

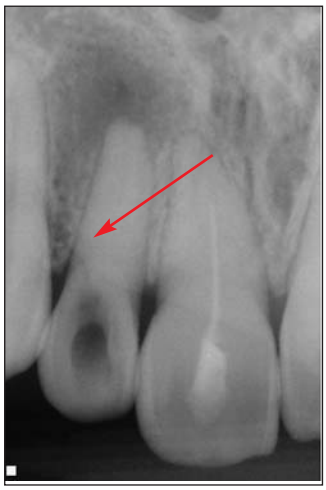

FIGURE 23: *Shows a maxillary right lateral incisor with a skewed attempt to locate the pulp chamber/ canal system with pulpal obliteration. There is widening of the periodontal ligament at the crestal bone level indicating a perforation (arrow).*

FIGURE 24: *Shows the perforation repair of the tooth shown in Figure 23.*

FIGURE 25: *Shows an upper right maxillary central incisor which has been perforated as a result of over vigorous use of a rotary instrument - probably a Gates Glidden drill - in an attempt to get to working length quickly. Note the pronounced canal straightening and again the positioning of the access cavity which is directing the instrument into the labial wall of the root.*

FIGURE 26: *Shows the recaptured canal in Figure 25 and the repair which was obturated with MTA.*

The use of the microscope and ultrasonic tips to chase hidden anatomy is invaluable. It preserves tooth structure and helps avoid perforation (**Figures 20, 21 and 22**). Coelho de Carvalho and Zuolo[17] have shown the use of the operating microscope increases the number of canal orifices located.

Without the use of the microscope and the failure to adhere rigidly to the expected outline of the pulp chamber, the temptation to chase aggressively these calcified pulp chambers or sclerosed canals with the air rotor, can result in the removal of an excessive amount of tooth structure and perforation (**Figures 23 and 24**).

Canal Instrumentation

The ideal canal shape is a continuously tapering preparation, largest coronally and narrowing apically, maintaining the original canal anatomy, and keeping the apical foramen as small as practical in its original position.[11] This canal shape is achieved with hand files,

FIGURE 27: *The radiographic view of a maxillary right lateral incisor with a root filling which is short of the radiographic apex. There is pronounced straightening of the canal system which fails to negotiate the significant apical curvature. There is a lesion centred at the termination point for this root filling. This is suggestive of a perforation created by taking excessively stiff instruments deep into the root canal system.*

FIGURE 28: *Shows the dis-assembled maxillary right lateral incisor seen in Figure 27. The original canal system has been recaptured, prepared and obturated using a warm vertical compaction technique. The repair of the perforation was carried out with sealer and gutta percha in an attempt to avoid surgical repair.*

FIGURE 29: *A periapical radiographic view of a mandibular left lateral incisor with a perforation in the apical third of the root denoted by the excess root filling material on the lateral aspect of the root. There is an associated periapical lesion. It is probable that this perforation resulted from the mis-use of a rotary instrument. It is necessary to prepare the canal system using a handfile up to an ISO #15 before introducing the rotary instrument to create what is known as the 'guide path'.*

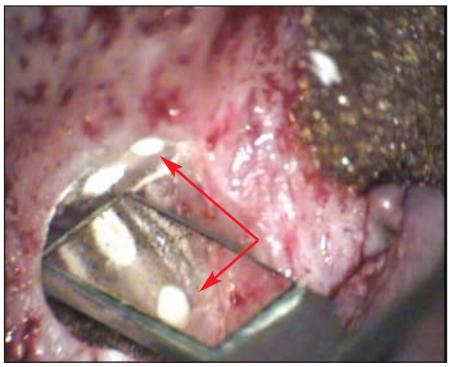

FIGURE 30: *Shows the actual surgical field during the repair of the same mandibular left lateral incisor as seen in Figure 29. The root apex has been resected above the level of the perforation. Both the anatomical and the created canal have been ultrasonically prepared and filled with MTA. The arrow indicates the created canal which is perfectly rounded.*

reamers and hedstroems in conjunction with rotary-driven devices.

A major contributor to iatrogenic problems in the canal preparation process lies in the method of use of the above instruments. Techniques of getting to working length early encourage the use of an aggressive cutting action.[11] If an aggressive approach is taken in canal preparation, particularly with a rotary driven instrument, a perforation is likely even in a single rooted tooth (**Figures 25 and 26**). Large inflexible rotary instruments should never be taken into the apical third of the root canal system even in apparently straight-rooted teeth. A poorly positioned access cavity under such circumstances will exaggerate the problem by directing the instrument into the tooth wall. For example, if in the case of a maxillary central incisor, the access cavity is positioned in the cingulum area and a Gates Glidden bur is advanced deep into the canal system. This bur will be directed into the labial wall of root dentine as it advances down the canal. The further down the canal it advances, the greater the restoring force will be, the more labial root dentine will be removed, the higher the chance of a perforation (**Figures 25 and 26**).

Until recently, all hand instruments were end cutting, with a two-degree taper over 16mm of cutting flutes, and twisted or machined from stainless steel stock. As a consequence, increasing stiffness was noted when progressing through any type of instrument series while preparing a canal. The introduction of the so called 'Step Back' technique of canal preparation was advocated to reduce the need to take excessively large stiff instruments in to the apical third of the root. With this approach, smaller more flexible files were used in the apical third, keeping the larger stiffer files for the straighter parts of the canal system in an attempt to reduce the inevitable canal straightening and/or perforation that occurred as a result of a large file being forced into the apical third of the canal (**Figures 27 and 28**). Large inflexible stainless steel hand instruments should never be taken into the apical third of any canal system. The restoring force on larger instruments as they negotiate the curvature is greater and as a consequence they are more likely to deflect the preparation of the canal system into the wall of the root, rather than follow the canal system around the curvature. If this deflected preparation is advanced it will result in a perforation (**Figures 27 and 28**). The need to use smaller more flexible instruments in curved canals is obvious. Numerous studies[19,20] have shown that rotary nickel titanium instruments can efficiently create acceptable preparation shapes, while minimising iatrogenic errors such as perforations. Even with the use of modern rotary nickel titanium instruments, the preparation of a guide or pilot hole using hand instrumentation is essential prior to the introduction of the rotary instruments. Failure to establish this guide path can result in the rotary instrument cutting its own path through the root and resulting in a perforation (**Figures 29, 30 and**

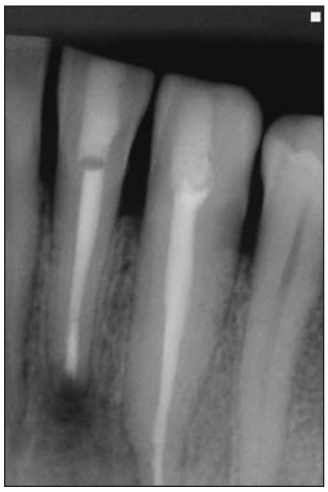

FIGURE 31: *Shows the radiographic appearance of the surgically corrected mandibular left lateral incisor as seen in Figures 29 and 30. The limitations of the surgical approach are clear to see. While the perforation has been removed and the root repaired, a large portion of the anatomical canal system remains un-obturated.*

FIGURE 32: *Shows a radiographic view of a mandibular first molar. Excessive root preparation has occurred in the mesial root on the furcation side, resulting in a near perforation or microperforation. This could have been avoided by using smaller instruments less aggressively in the first place, and directing them away from the furcation side of the root.*

FIGURE 33: *Shows the radiographic view of a maxillary central incisor with a post retained crown. The post is obviously skewed and there is an associated perforation on the distal aspect of the root. There is an associated radiolucency.*

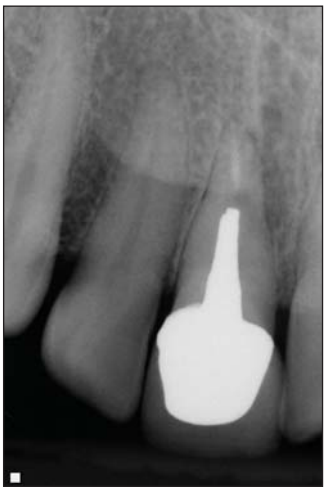

FIGURE 34: *Shows a maxillary central incisor with a post retained crown. Radiographically there appears to be a gap between the end of the post and the root filling. There is an associated lateral radiolucency at the termination point of the post suggestive of a perforation.*

31). Even using more modern instrumentation techniques and instruments, due consideration must be given to the dimensions of the canal system. Gates Glidden drills are widely used for pre-enlarging the coronal two thirds of most root canal systems.[18] However, their use should be confined to the straighter portions of the canal and their cutting action should be directed away from root concavities in furcated teeth.[21] This so-called 'anticurvature' method of canal preparation whereby the instrument is directed away from the furcation area in a multi-rooted tooth has been shown to reduce the potential for root perforation.[22] Due consideration should be given to the size of the bur relative the size of the root, as these instruments can be very aggressive (**Figure 32**). A similar philosophy should be applied when using rotary nickel titanium instruments.[18] All instruments will have a straightening effect on a curved canal.

Post Space Preparation

According to Kvinnsland *et al.*[6] post preparation accounts for 53% of all perforations. It is postulated that with the increased use and predictability of bonding in dentistry, the need to place posts into roots should be diminishing.

Goodacre and Spolnik[23] recommend a post length equal to three quarters of the root length, if possible, or at least equal to the length of the crown. They caution that at least 4 - 5mm of gutta percha should remain apically to maintain an adequate apical seal. Limiting the post size so that the post diameter is no larger than one third the mesial distal width of the root is also helpful.[24]

There are two principal ways in which a root may be perforated during post space preparation: a skewed preparation which is where the post space deviates away from the long axis of the root and perforates the lateral aspect of the root (**Figure 34**) and secondly where a parallel-sided preparation is advanced too far apically and does not take into consideration the tapering nature of the root, or the diameter of the preparation is excessive relative to the root diameter and root length (**Figures 35 and 36**).

The primary purpose of a post is to retain a core in a tooth where there has been extensive loss of tooth structure.[25] The preparation and placement of a post adds a certain degree of risk to the restorative procedure. These risks not only include that of perforation during preparation but also include an increased risk of root fracture post restoration, especially where the diameter of the post is large.[26] It is therefore important to consider the alternative options to post placement as a means of core retention.

The need for post placement varies greatly between anterior and posterior teeth.[25] Generally speaking, if an anterior root filled tooth is to receive a crown, a post is often indicated because of the amount of remaining coronal tooth structure. The pulp chambers in anterior teeth are generally too small to provide adequate retention and resistance for a tooth core without a post.[25] However by adopting a more incisal approach to access the tooth during the endodontic procedure, less tooth structure is removed reducing the need to place a post. Secondly, the placement of the post is greatly facilitated because of the straight line approach adopted for the initial root filling.

Endodontically treated molar teeth on the other hand rarely require a post, unless there is extensive loss of coronal tooth structure (**Figure 36 and 37**).[25] Rarely if ever, is more than one post required.[25]

FIGURE 35: *Shows the actual surgical correction of the tooth seen in Figure 34. It would appear that during post space preparation the rotary drill was advanced into the apical third of the root causing the perforation. The root tapers very quickly in this area. The root has been resected and prepared ultrasonically before being repaired with MTA. The arrow denotes the perforation repair.*

FIGURE 36: *Radiographic view of a lower first molar with a perforation in the distal canal on the furcation side following post space preparation. The arrow indicates the actual perforation.*

FIGURE 37: *Shows the radiographic view of the tooth in Figure 36 following the perforation repair with MTA and the placement of the definitive cast restoration. It is worth noting that and amalgam core supplemented with pin placement was sufficient to retain the crown. This suggests that the need to place the post in the first place was questionable putting the tooth at great risk.*

When it comes to post placement, there is a huge variety of post systems that can be considered. It is not the intention of the author to review the merits of the different systems in this article but direct the interested readers to a review type article by Schwartz and Robbins.[25] In order to reduce the potential for a skewed perforation during post space preparation, the preparation should follow the long axis of the root. Removal of the coronal and mid- root gutta percha with heat and hand instruments will help provide a pilot hole for the post drills to follow.[27] By inserting a heated instrument into the gutta percha, the material will be softened considerably, some of the material will adhere to the instrument on its removal creating a hole into which the pilot drill can be inserted and advanced. The surrounding gutta percha will also have been softened and will therefore provide less resistance to the pilot drill. If resistance is encountered, the softening process can be repeated until the ideal post length is achieved. Preparation of the post space with an engine driven rotary instrument can be done in a counter-clockwise direction to reduce the aggressive cutting potential of these drills.

Posterior teeth pose real problems from a post-placement perspective. Access may be restricted, directing the preparation off-centre. Great care should be taken when access is restricted and post placement is required. It may be more sensible to look at alternative roots in the case of a multirooted tooth when access is a limiting factor, or it may be preferable to look at alternative means of achieving core retention such as pins, slots and grooves which have been shown to work equally well in posterior teeth (**Figures 36 and 37**).

The root anatomy of posterior teeth is more complex. The roots will exhibit curvature and there are associated root concavities which cannot be detected either clinically or radiographically both of which complicate post-placement significantly. Nayaar *et al.*[27] have described a coronal-radicular post and core technique for endodontically treated posterior teeth whereby amalgam is condensed 2 – 4mm into each canal and into the pulp chamber and the coronal portion of the tooth. The natural divergence of the canals and the undercuts in the pulp chamber provide retention to the amalgam dowel and core. The authors reported that in 400 cases treated in this way, no failures were reported over a four-year period. Amalgam cores are highly retentive when used as described above and require more force to dislodge than cast post cores.[28] A significant disadvantage of amalgam cores is the potential for corrosion and subsequent discoloration of the remaining tooth structure and gingival. Amalgam use is declining worldwide, because of legislative, safety and environmental issues.[29] Its use is superseded by composite, but it too has significant short comings such as polymerisation shrinkage, water absorption and technique sensitivity.

Conclusions

While it will be impossible to eliminate all iatrogenic errors in endodontics, it is clear to see from the above that by focusing on key areas during the endodontic process, we can reduce the potential for problems for ourselves and our patients.

It is suggested that by taking a more incisal starting point in your access preparation on all anterior teeth, we will reduce the potential for a buccal perforation. We will retain more tooth structure, facilitate true straight line access improving the quality of our root treatment and facilitate the post space preparation if and when required.

Use a bitewing radiograph to determine the location of the pulp chamber for all posterior teeth. This should be supplemented with a clinical examination of the tooth at the cemento-enamel junction level as the pulp chamber will follow the outline of the tooth at this level.
We should remember that teeth with with pulpal calcifications or total pulpal obliteration are significantly more difficult to treat and account for 42% of the perforations that occur during root canal treatment.
By using some form of illumination and magnification (preferably an operating microscope) we should be able to differentiate between the root dentine, the floor of the pulp chamber and calcified deposits within the pulp chamber. Secondly we should be able to identify and locate more anatomy, improving the quality of our root treatment.
With regards to canal instrumentation, we should consider the root anatomy before the preparation process from our anatomical knowledge of the tooth or root in question, supplemented with multiple angled radiographic views of the tooth, where possible. We should not use excessively large instruments to prepare the coronal two thirds of the root system. We should move towards the rotary nickel titanium instruments for canal preparation.
We should assess the need to place a post on all teeth but particularly posterior teeth where alternatives such as the Nayaar core have been shown to be equally successful.[26,27]

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PEER REVIEWED

An audit of the laboratory service provided to the health service executive orthodontic department, St James Hospital, Dublin

Abstract

Purpose of the study: To evaluate the service purchased from contracted orthodontic laboratories used by HSE (SWA) regional orthodontic unit, St. James's Hospital, Dublin and identify deficiencies in the current service.

Materials and methods: A data collection questionnaire was designed and distributed to the departmental orthodontists for a period of three months (October-December 2004). Gold standards, drawn up based on the authors' ideal requirements and published guidelines, were supplied to grade the work returned.

Results: During the study period 363 items of laboratory work were requested. 20% of the laboratory work arrived late and most of the delayed work was delayed for more than 24 hours. Most laboratory delays occurred with functional appliances, retainers and study models. Prior to fit, 20% of the appliances required adjustments for more than 30 seconds. 65% of laboratory work returned to the department met all of the gold standards. 10% of appliances were considered unsatisfactory. Functional appliances were most often ill fitting accounting for almost half of the unsatisfactory laboratory work.

Conclusions: The majority of the laboratory work returned to the department met our gold standards and arrived on time. Forty six percent of the appliances required adjustments. Functional appliances required the most adjustments; one in five of all functional appliances ordered were considered unsatisfactory.

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Introduction

The aim of clinical audit is to improve patient care and can be defined as: the systematic critical analysis of the quality of medical and dental care, including the procedures used for diagnosis and treatment, the use of resources and the resulting outcome and quality of life for the patient[1].

Clinical audit can facilitate the change in culture towards evidence-based dentistry within your practice and can identify, whether or not the things that ought to happen, are indeed happening in your practice. It can tell you if your service meets the required standard and if evidence-based practices, derived from published guidelines, are being delivered.

Clinical audit is a cyclical process and includes the following basic steps:

- Observing current practice.
- Setting standards of care. 'The Gold Standards'
- Comparing current practice to gold standards and implementing change.
- Re-audit to ensure the desired change has taken place.

It has been suggested that audit is similar to research, however, research is concerned with finding answers and the way forward in areas of unknown practice and audit is concerned with doing the things we know about correctly. Furthermore, whilst research aims to influence dental practice in its totality, audit aims to influence activity on a local level.

Setting gold standards for a service can be derived from a number of sources. The Royal Colleges of Surgeons of England (www.rcseng.ac.uk) and the Cochrane Collaboration (Oral Health) (www.cochrane.org) are just two of a number of organisations that have produced a number of evidence-based clinical guidelines that are available and can be

TABLE 1: Gold Standards

Study Models

1. The static occlusion will be the same as that in the mouth of the patient
2. All the anatomical features are present (not over-trimmed) on the model.
3. A polished cast with no air blows
4. Patient name, hospital number and date of record applied

Orthodontic appliances

1. The appliance supplied meets your design prescription
2. The appliance fits without adjustment
3. The appliance is retentive and comfortable for the patient
4. The appliance was returned on time

TABLE 2: Quality of models and appliance Scoring system

Very Good	All Gold standards met
Satisfactory	Up to 3 gold standards met
Unsatisfactory	Only one standard met

TABLE 3: The amount of adjustment needed

None	No adjustment needed
Slightly	less than 30 seconds
Moderate	between 30 seconds and 3 minutes
Substantial	greater than 3 minutes

downloaded at the appropriate websites. Alternative sources of best practice information are available from general and speciality dental organisations and the published literature. Occasionally where the evidence is limited, especially so when non-clinical processes are audited, tailor-made gold standards based on desired ideals are needed to audit particular aspects of service.

Over a number of years the Health Service Executive (South Western Area) (HSE SWA) management team responsible for orthodontics has opted to purchase an orthodontic laboratory service from a number of external contractors. The quality of the purchased service has recently been questioned following a number of concerns raised by our clinicians and nursing staff.

Of particular concern was the quality of some orthodontic appliances and study models returned to the department. Poorly made appliances resulted in either significant chair side adjustment or the need to remake the appliance. Also of concern was the occasional failure to return work on the requested date and failures to make appliances to the requested prescription. This not only inconveniences the patient and parent, who often take time off school and work to attend, but wastes clinical time that could otherwise be used. These concerns prompted the current audit.

Aims of the audit

- To systematically evaluate the service purchased from contracted orthodontic laboratories used by HSE(SWA) regional orthodontic unit, St. James's Hospital, Dublin.
- Identify deficiencies in the current service by comparing with locally produced gold standard of service.
- Make recommendations for improvements to deliver a better service.
- To re-audit the process following on implantation of the recommendations.

Materials and Methods

Gold standards were drawn up based on the authors' ideal requirements and published guidelines[2] (**Table 1**).

A data collection period of three months (October-December 2004) was chosen and a data collection questionnaire was designed and distributed to the departmental orthodontists. A copy of the gold standards was also supplied to the departmental orthodontists to grade the work returned from the laboratories.

Impressions taken for appliances and study models were checked by each orthodontist to ensure they were structurally intact and were an accurate representation of the patient's anatomical morphology. For study models, a wax registration of the patient's intercuspal position was also provided. Data collection started at the time when impressions and appliance prescription were first made. The data sheet was then filed during appliance construction and then retrieved and paired up with the associated lab work when returned. The laboratory work was scored during the subsequent patient consultation.

The following information was noted on the data collection sheet.

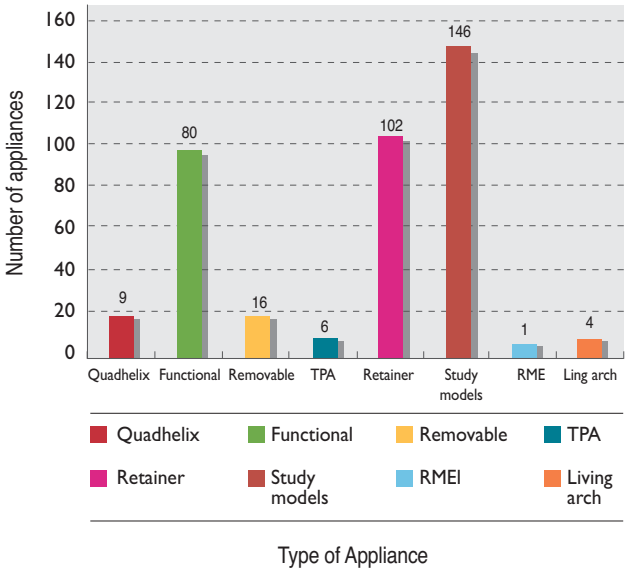
1. The type of laboratory work requested
2. Was the laboratory work returned on time?
   The date the impressions were sent out.
   Return date requested. (the appliance fitting appointment).
   If the appliance was late and by how long.
3. The quality of the laboratory work was scored and assigned as very good, satisfactory or unsatisfactory according to the gold standard scoring system outlined below (**Table 2**).
4. If the laboratory work was poorly fitting, the length of clinical time needed to make the appliance clinically acceptable was recorded (**Table 3**).
   The following gold standard criteria were used to record appliance adjustment.

Results

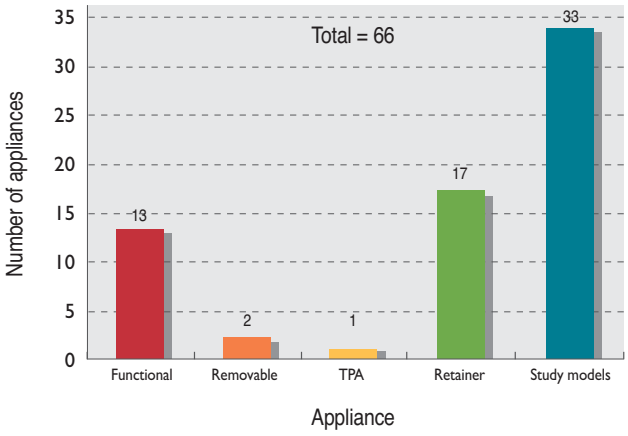
Three hundred and fifty six questionnaires were completed during the data collection period.

Question 1: The type of laboratory work requested.

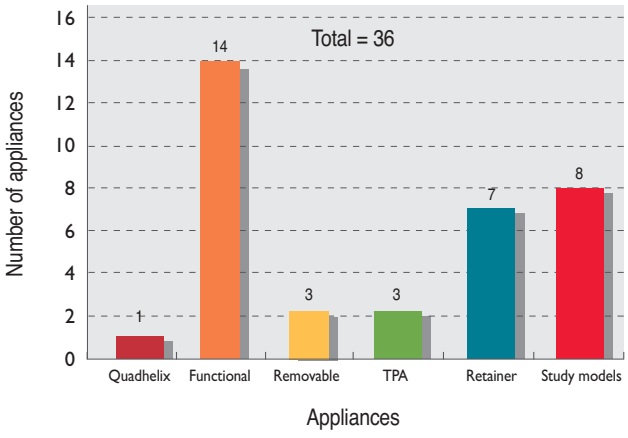
364 items of laboratory work were requested during the period of the study. Some questionnaires were used for more than one appliance and that accounts for the larger number of items ordered compared to the



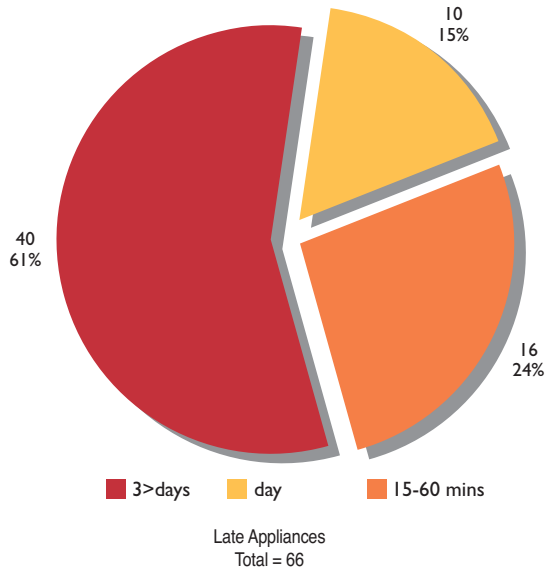
Graph 1: *Type and number of laboratory work requested.*



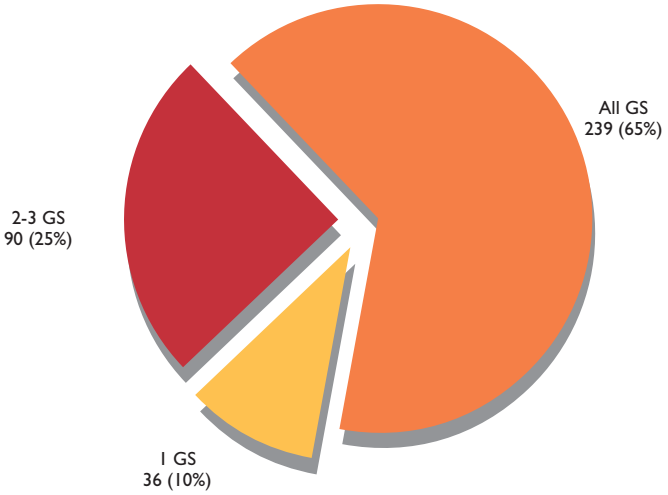
Graph 2: *Type of laboratory work delayed.*



Graph 3: *Length of delay for late laboratory work.*



Graph 4: *Percentage of appliances which met the gold standards.*



Graph 5: *Unsatisfactory Appliances.*

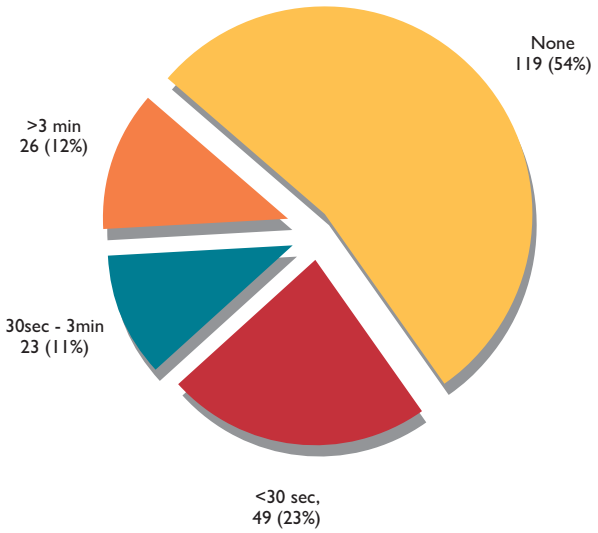
completed questionnaires. This breaks down into, 146 study models, 102 retainers, 80 functional appliances, 16 removable appliances, 9 quad-helixes, 6 trans-palatal arches, 4 lingual arches and one rapid maxillary expansion appliance being ordered in the observation period (**Graph 1**).

Question 2: Was the laboratory work returned on time and if not how late was the work returned?

82% of the work was returned on time. **Graph 2** shows that most of the 66 delayed orders were for study models, retainers and functional appliances. Seventy six percent of the work that was delayed was delayed more than 24 hours (**Graph 3**)

Question 3: The number of gold standards met by appliances (Graph 4 and 5)

65% (239) of appliances met all the gold standards while 10% (36) of the appliances were deemed unsatisfactory meeting



Graph 6: *How much adjustment time was required?*

only one of the defined gold standards. Of all the laboratory work returned, functional appliances, study models and retainers most often failed to meet our gold standards and scored an unsatisfactory rating

The breakdown of the appliances which were deemed unsatisfactory is outlined in **Graph 5**.

Question 4: The amount of adjustments required before fitting the appliance (Graph 6)

54% (119) of the appliances did not require any adjustments. However 46% (98) of the appliances did need adjustment.

Discussion

The audit was designed to evaluate the externally orthodontic laboratory service provided to the department, with an emphasis on punctuality and quality. The information gathered is relevant, not only from the clinical view, but also concerns parents and patients who utilise their time to visit our practice.

The audit was conducted over a three month period and included a period when an increased number of new patients were enrolled into treatment (due to the recruitment of two additional orthodontists). The numbers of study models and new appliances during the study period therefore reflects a slightly increased typical laboratory work load.

The majority of laboratory work was returned on time (82%) for the patient's next appointment. However, close to one patient in five was inconvenienced and had a wasted or unproductive visit because work was not returned on the requested date. Just under a quarter of study models were delayed leading to difficulties for scheduled treatment planning and consent discussions. Functional appliances caused difficulties for the laboratory because 16% of these appliances were delayed. This may reflect the more complex laboratory process to manufacture these appliances. The majority of retainers were requested to be delivered later on in the day following a morning debond appointment. Unfortunately 16% of them failed to be returned on time. This may reflect local traffic difficulties in Dublin leading to insufficient time to collect impressions, make and deliver the retainers.

The amount of appliance adjustment required at the chair-side before fitting should be negligible and as a gold standard we felt that appliances should fit without adjustment, 54% of appliances needed no adjustment at all and met our criterion. Just under a quarter (23%) of appliances were fitted after slight adjustment (less than 30 seconds) and 23% required more than thirty seconds of which 12% required more than 3 minutes to allow fitting.

From the audit view point, appliance and study model quality were considered very good if they met all the gold standards and unsatisfactory if they met only one. All gold standards were met for 65% of the laboratory work returned to the department. There were 36 items of laboratory work; representing 10% of the sample that were considered unsatisfactory, 14 of these were functional appliances, eight were study models and seven were retainers. In all, just under one in five (18%) of all functional appliances ordered were considered unsatisfactory. This is disappointing, as these appliances are difficult to wear at the best of times and good patient cooperation is imperative for success. Sub-optimal appliances can potentially contribute to cooperation exhaustion and ultimate treatment failure.

Conclusions

1. 65% of laboratory work returned to the department met our gold standards.
2. 20% of the laboratory work arrived late and most of the delayed work was delayed for more than 24 hours.
3. 20% of the appliances required adjustments for more than 30 seconds.
4. 10% of the appliances were considered unsatisfactory. Nearly half of the unsatisfactory lab work were functional appliances.

Recommendations

Inform the laboratories in advance when an increased work load is impending, to allow increased turn around time.

Discuss our appliance return time and quality concerns with our contracted laboratories and then re-audit the service to ensure standards have improved.

For retainers, patients should only be asked to come back on the same day if there is an absolute clinical need (Hypodontia cases). In these hypodontia cases, we should agree with the lab a guarantee of a same-day retainer. As for routine debond situations, fitting the retainer in the following day is appropriate.

Instrument a procedure whereby lab work is checked the day prior to the patients' appointment. In cases where the lab work is not available patients' appointment should be rescheduled.

Re-audit the laboratory service provided to the Health Service Executive Orthodontic Department.

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Timing of Orthodontic Treatment

Counihan, Dan.

Abstract

At what age should my child start orthodontic treatment? This is a question that is often asked by concerned parents. The answer can depend on a number of factors. Firstly the malocclusion. Some malocclusions are best corrected in the early mixed dentition whereas others may be best left until growth has ceased. Psychologically some children may be best left until they are more mature while others are more co-operative at an earlier age. Orthodontics is as much an art as a science and the philosophy of the individual orthodontist is also a factor. This lecture explored the above factors so that the dentist may have a better understanding of the timing issues.

IDA Public Dental Surgeons Seminar,
Adare, Co Limerick.

October 18-20, 2006.

Do fillings in primary teeth work?

Chadwick, Barbara.

Abstract

Recently there has been heated debate over the optimum management of caries in the primary dentition. Retrospective research in general dental practice in the UK questions the orthodox approach to restoring dental caries in primary teeth. The flurry of correspondence following these publications suggests that this is an area of concern to all dentists treating children. Some respondents highlighted the need for early diagnosis, rigorous prevention and appropriate restorative care including local anaesthesia, pulpotomy and preformed metal crowns. Others found these traditional techniques to be difficult in children and unproven. The results from retrospective studies, suggesting that restorative care in children is doomed to failure, are in stark contrast to clinical trials of primary molar restorations which show good long-term results. The recent debate in the literature has not adequately explained why these differences exist. This paper has two main aims. To explore possible explanations for these differences and to identify how the findings from the evidence base might improve the restoration primary teeth in general dental practice and hence oral care for children.

IDA Public Dental Surgeons Seminar,
Adare, Co Limerick.

October 18-20, 2006.

Crash course in accounts

STEVEN LYNCH, ACA, a partner of MedAccount Services, explains what critical financial information is necessary for the successful operation of a dental practice.

Being an accountant, I am amazed to learn that dental students graduate from dental school without having to sit a basic business module as part of their training. Indeed, dental graduates have the capacity to earn far in excess of the vast majority of business graduates and it is therefore essential that they educate themselves on how to understand basic financial statements or at the very least know what the critical figures are in the successful operation of their businesses. Set out below is a crash course in the basics!

Fee income

This is the actual gross revenue generated by the dental practice. It should include all private, social insurance, medical card, insurance company and Health Board emoluments received and due to the practice for the relevant basis period or financial year.

Fees can be recorded in a number of different methods but a simple means is having a basic daily cash sheet for each dentist recording which patient/organisation has paid and by what means, i.e., whether cheque, cash, credit card or laser was used.

These daily sheets should then be summarised into a weekly sheet and reconciled to bank lodgements and any payments made thereof. The maintenance and upkeep of this schedule is a simple daily task which should be completed by a trustworthy and competent member of staff. Weekly reconciliations should be performed by you to ensure that all monies received are correctly accounted for and lodged to the practice bank account.

Expenses

These can generally be categorised into three broad categories: (1) direct costs, (2) wages and salaries; and, (3) other overheads

Direct costs

These are costs directly associated with the provision of dental treatment. In this category one can include payments to associates, hygienists as well as laboratory and dental materials.

Proper recording of laboratory fees is essential particularly if associates are present in the practice. Ensure that your dental laboratory has clearly identified on their invoices which dentist the fee is for so as payments to associates can quickly be calculated. On average, dental practices incur laboratory fees of 8% of gross income but this will vary on the level of dentistry conducted in the practice. All other dental material invoices should be stored in a suitable manner and allow easy audit trail for future reference.

Wages and salaries

Typically wages and salaries account for approximately 20% of gross fee income. Ensure that you are maintaining proper payroll records and submitting the relevant PAYE and PRSI contributions to the Collector General. It is a good idea to outsource your payroll function as this is normally inexpensive and enables you to spend your time more efficiently either attending to patients or at home with your family. Also it keeps confidential information out of staff's reach and can help avoid unwanted staff confrontations.

You should also be aware of your legal obligations as an employer, particularly in relation to providing and maintaining employment contracts, payslips, and P60s, in addition to offering a PRSA scheme. If you have not previously provided these, contact your financial advisor.

Other overheads

Included in other overheads are expenses such as rent and rates, training, canteen supplies, periodicals, light and heat, telephone, repairs and renewals etc.

I am often asked as to what expenses are allowable. One must remember that only expenses that are wholly and exclusively for business purposes are allowable as deductions against income.

Other points

Any qualifying capital expenditure incurred entitles you to capital allowances which can be written against taxable income over a period of eight years, i.e., 12.5% per annum.

Net profits

Your practice net profit is the taxable income for which you will be assessed. If you are lucky enough to be paying tax then you should consider availing of some measures to reduce your liability - and still sleep easy!

There are still certain allowances and reliefs available such as BES or film investments, donations to qualifying third level institutions, charities, and specified property investments. The most common and easiest way to reduce your tax bill is through pension contributions. For example a payment of €20k into your pension scheme can reduce your tax bill by circa €8k.

Stay on top

My best advice is to keep on top of your accounts by reviewing your profit and loss account on a monthly or quarterly basis. Remember that prompt review can help to solve underlying problems in your business which otherwise would go unnoticed until the following year whilst leaving everything until the last week in October also offers you little opportunity for effective tax planning.

Sharing the burden

Expense sharing relationships in dentistry are becoming increasingly popular in Ireland. Although easily arranged and administered they are not without pitfalls. However if they are organised correctly, they can be very beneficial to the principals, writes LIAM TUOHY.

Traditionally, in dentistry in Ireland, private practice consisted of professionals practising single-handedly in isolation from other dentists and other dental practices. Competition between practices often led to very little contact between dentists and their peers in the locality. If a practice was busy enough to expand, the traditional route was to have an associate who often left after a while to pursue their own ownership aspirations, thus requiring recruitment of a new associate and all the attendant hassle. Expense sharing arrangements have evolved where practice owners would prefer to keep a good associate and avoid the revolving door of associates or where practices join together for their mutual benefit.

What are the advantages?

Financial

a) The ability to share certain common overheads leads to immediate ongoing financial benefits.
b) The sale of part of the goodwill of the practice for somebody under the age of 55 attracts CGT tax rates rather income tax rates as associate income does.
   This is particularly advantageous as it allows part of the value of the practice to be unlocked and used for investment in, for example, property.
c) Increased financial muscle makes the purchase of expensive items such as OPG, digital radiography, etc., more viable.
d) The presence of an expense sharing arrangement can often make a practice more attractive to potential purchasers.

Practice development

a) The presence of two or more dentists makes the employment of a part/time fulltime hygienist a more viable option. This has benefits for the practice in terms of attracting new patients as well as boosting the practice income.
b) The increased ability to cover holidays/on call or do weekends or late evenings, etc., allows the practice to attract in more new patients.
c) Dentistry in general practice covers many different areas, e.g., endodontics, orthodontics, restorative, etc.
   The presence of extra expertise in the practice can mean less referral out to specialists.
d) In the case of illness or death, the practice remains open and viable unlike in the scenario where there is no dentist available and patients drift to other practices.

Holistic benefits

One of the big disadvantages of the traditional single-handed practice is the difficulty of isolation - and the disadvantages in terms of stress that come with that. Dentists who practice on their own can sometime feel inadequate in terms of their own abilities. The presence of a colleague who endures the same level of difficult patients/fractured endodontic files/loose full lower dentures can be quite reassuring.

The ability to get a second opinion on a clinical problem is also beneficial to both the practitioner and the patient.

How to set-up an expense sharing arrangement

Find the right colleague

This is obviously easier said than done. The principals must have an ability to get on with each other. They don`t have to be similar personalities, but they must be compatible. Their relationship must be able to withstand the normal stresses of practice and they must be able to resolve difficulties without resentment.

The ideal situation is usually an existing associate buying-in to a practice, or colleagues from nearby areas joining together in one building. It is always worthwhile for both parties to get an independent valuation or assessment for the purposes of agreeing a price.

Draw up a legal agreement

Once the agreement is made in principle, and a price is agreed, it is vital that all details be discussed and agreed. When agreed, a legal agreement is drawn up. This is for the protection of both parties. It needs to be comprehensive to cover all eventualities and scenarios, but ideally will never be called on during the life of the agreement. It is very important that the agreement states explicitly that the dentists are not setting up in partnership, as this can have legal implications in terms of liabilities. The dentists involved need to decide on the following issues.

Decide what expenses are to be shared

- These can include wages of joint staff, light and heat, rent, telephone/fax, waste disposal etc. What equipment is to be shared? What equipment is to be owned separately? Who pays for maintenance/repair of that equipment?
- It usually makes sense for each dentist to individually own and maintain their own chair/cabinetry/handpieces/hand instruments and to jointly own any shared equipment such as compressors/ OPG/sterilisers/office equipment. Some practices will share materials and some keep separate stock.

Premises

If the premises is not jointly owned, the initial rent needs to be agreed and a mechanism for deciding any rent review put in place. It is vital that a proper lease or sub-lease be put in place.

Staff
Some dentists employ their nurses on an individual basis and any reception staff jointly. Often a dentist joining an existing practice may have to assume a share of any employment obligations and duties to some existing staff. This needs to be agreed beforehand.

Administration
The dentists need to decide on how to administer the agreement and how to sanction joint expenditure.

Patient allocation
The agreement should reflect any agreement between the dentists as regards to how new patients are assigned or existing ones transferred.

It is best to arrange a monthly meeting to go through all the expenses and any other issues together. A joint account should be set up into which both dentists put in an agreed amount monthly. Usually both parties can sanction expenditure individually up to an agreed amount, e.g. €500, but anything above that has to be agreed jointly.

Exit mechanisms and termination

One of the important aspects of any relationship is its termination. It is important that each dentist retains the right to sell their practice whenever they wish. The legal agreement must reflect this. It can also, for example, give the remaining dentist the option to purchase at a price calculated according to an agreed formula.
It is of great benefit if key-man insurance is put in place in case of death or illness causing someone to have to cease work. This payout then allows the remaining party to purchase the practice of the other colleague.

Dispute resolution

If the dentists are unable to resolve a disagreement, the legal agreement must make provision for appointment of an independent dental negotiator whose decision would be binding.

Summary

Expense sharing arrangements are extremely beneficial to dentists and not just in a financial sense. They can be easy to organise and administer, but must be based on a proper written legal agreement.

Dr Liam Tuohy is a UCC graduate from 1992 and is the Managing Partner of a six-dentist practice in Co Tipperary. This article is the full version of an abstract which we published recently and which readers requested.

DIARY OF EVENTS

DECEMBER 2006

5th Triennial Meeting of Commonwealth Dental Association. Hosted by the Sri Lanka Dental Association

Date: December 1 to 3, 2006

Venue: Colombo, Sri Lanka

For further information contact slda@slt.lk or hillarycooray@slt.net.lk.

Irish Dental Association, Annual General Meeting

Date: December 2, 2006

Venue: Hilton Hotel, Charlemont Place, Dublin 2

Metropolitan Branch, IDA – Christmas Party

Date: December 2, 2006

Venue: Minerva Suite, RDS, Ballsbridge, Dublin 4

Dinner, drinks and dancing to "Hurricane and the Jets". 7.30pm for 8.00pm until late.

JANUARY 2007

North Munster Branch, Irish Dental Association – Scientific Meeting

Date: January 9, 2007

Venue: Jurys Inn, Limerick

Commencing at 8pm sharp, the topic will be "Aesthetics" and the speakers are Drs Kevin O'Boyle and Paul O'Reilly. For further information contact Dr John Hennessy, Tel: 061 315352

Metropolitan Branch, IDA – "Non Accidental Injury"

Date: January 18, 2007

Venue: Hilton Hotel, Charlemont Place, Dublin 2

Speaker is Dr Sabine Maguire, Paediatrician from the UK. Further information will follow when available.

Metropolitan Branch, IDA – "Incisor Trauma – An update on best practice"

Date: January 18, 2007

Venue: Hilton Hotel, Charlemont Place, Dublin 2

Traumatised incisors in adults/older children. Case review/decision making. Speaker is Dr Anne O'Connell.

FEBRUARY 2007

North Munster Branch, Irish Dental Association – Scientific Meeting

Date: February 13, 2007

Venue: Jurys Inn, Limerick

Commencing at 8pm sharp, the topic will be "Health and Safety" and the speaker is Rory Clancy. For further information contact Dr John Hennessy, Tel: 061 315352.

Metropolitan Branch, IDA – Non Dental Evening and Award Ceremony – "Telling my story: team motivation"

Date: February 15, 2007

Venue: Hilton Hotel, Charlemont Place, Dublin 2

Speaker is Dr Caroline Casey. Further information will follow when available.

Metropolitan Branch, IDA – Annual Scientific Meeting – "Drink from the fountain of knowledge"

Date: February 16, 2007

Venue: O'Reilly Hall, UCD

Further information will follow when available.

MARCH 2007

North Munster Branch, Irish Dental Association – Scientific Meeting

Date: March 13, 2007

Venue: Jurys Inn, Limerick

Commencing at 8pm sharp, the topic will be "Implants" and the speaker is Professor Duncan Sleeman. For further information contact Dr John Hennessy, tel: 061 315352.

Metropolitan Branch, IDA – "Restorative Dentistry in 2007"

Date: March 15, 2007

Venue: Hilton Hotel, Charlemont Place, Dublin 2

Speaker is Dr Billy Davis. Further information will follow when available.

Metropolitan Branch, IDA – Annual General Meeting

Date: March 15, 2007

Venue: Hilton Hotel, Charlemont Place, Dublin 2

Further information will follow when available.

APRIL 2007

IDA Annual Scientific Conference – Cork 2007 Learning LeisureLEE

Date: April 18 to 21 April 2007

Venue: Rochestown Park Hotel, Cork

More details available on www.dentist.ie

MAY 2007

3rd Asia Pacific Congress on Craniofacial Surgery and Distraction Osteogenesis

Date: May 1-4, 2007

Venue: Republic of Maldives

There will be four life surgical demonstrations and four-hands-on workshops using state of the art distractors and other Craniomaxillofacial surgical equipment. A good number of eminent Surgeons have consented to participate as faculty and around two hundred surgeons have expressed interest in participating in the congress. The faculty list can be viewed online and further information is available at www.distraction2007.com.

Classified advert procedure

Please read these instructions prior to sending an advertisement. On right are the charges for placing an advertisement for both members and non-members. Advertisements will only be accepted in writing via fax, letter or e-mail (fionnuala@irishdentalassoc.ie). Non-members must pre-pay for advertisements, which must arrive no later than October 4, by cheque made payable to the Irish Dental Association. If a box number is required, please indicate this at the end of the ad (replies to box number X). Classified ads placed in the Journal are also published on our website www.dentist.ie within 48 hours, for 12 weeks.

Advert size	Members	Non-members
up to 25 words	€75	€95
26 to 40 words	€90	€110

Non-members must send in a cheque in advance with their advert. The maximum number of words for classified ads in 40.

Only if the advert is in excess of 40 words, then please contact:
Think Media
The Malthouse, 537 North Circular Road, Dublin 1.
Tel:01-856 1166 Fax:01-856 1169 E-mail: paul@thinkmedia.ie

Positions Required

Irish locum dentist available. Mondays and Tuesdays in the Kilkenny, Tipperary area from mid October. Contact after 5pm at 085 7152936.

Dentist from Germany, Dental Council registered, seeks full-time position in the Dublin area. Email: maria_beck_moreno @web.de Tel: 00 49 221626439. Mob: 00 49 160 91191221.

Experienced Cork graduate looking for associate/locum position in Cork area. Available to start in November. CV available on request. Please contact via email aisling_feeney @hotmail.com

Experienced Trinity graduate looking for associate or locum position in Dublin. Email nicgearailt@gmail.com

Experienced Trinity graduate looking for locum position in the Dublin area. Available Tuesday and Wednesday from mid November. Tel: 087 2463415.

Positions Vacant

Associate required to replace departing colleague. Limerick City. Contact: 087-8537313.

Hygienist required for full time position. Limerick City. Contact: 087-8537313.

Locum dentist required to cover maternity leave in mid-west area. Position available late November 2006. Tel: 061-921123 Day. 086-2871468 Evening.

Associate to replace departing colleague. Dublin practice. Excellent opportunity for skilled practitioner. Modern, ethical surgery. Three days initially. Excellent prospects. Hygienist, full staffing. Phone: 086-1686056.

Locum required to cover maternity leave in two dentist practice. Minimum six months, full book. Busy modern family practice in Wexford town. Full or part-time hours available. Start January 2007. Tel: 00 353 (0) 87 6888606 after 6pm or 053 9121733 office hours.

Associate dentist required for Cork city centre practice. Lovely working conditions. Contact Seema at: 021-4274706.

Associate wanted to replace departing colleague in busy friendly dental practice in Cavan town. Newly equipped multi-surgery. OPG/hygienist/orthodontist/ implants. Contact: 049 4331360/086 8276569.

Dental associate required to replace departing colleague. Co Louth practice. OPG, hygienist etc. One hour from Dublin. Please telephone: 041 6853235/086 3954048.

Dental associate required part/full time to replace departing colleague. Wicklow/Carlow border. Two surgeries, excellent Staff and equipment. OPG. Busy General Practice. Start September/ October 2006. Phone: 087 6851568.

Dental associate – part-time Wicklow. Busy general mixed practice. Excellent equipment. Start September/October 2006. Phone: 087 6851568.

Full time associate wanted for multiple practice in Southeast starting November 2006. Fully qualified friendly staff, hygienist, fully computerised, digital x-ray, OPG. High standards and long term view expected. Please telephone: 087-2666524 and leave a message.

Associate required part-time, modern city practice D2. Computerised surgery with digital x-ray, hygienist and excellent support staff. Please contact:087-9035461.

Associate required part-time initially. Going full-time. Dublin 30 miles. Ring: 046-9433189 7-8pm.

Kildare South. Associate with a view. Modern surgery. OPG, camera, room for expansion. Rapidly developing town. Tel: 087 6598181.

Dental hygienist required for Limerick city practice, Friday afternoon 1.30 p.m. to 5.30 p.m. Tel: 061 335226.

Part-time associate required in busy two surgery practice in South Tipperary. Two to three days per week plus Saturdays also available. For details please call 087 3141301. Email jpdh@eircom.net

Dental nurse with experience required. Full-time/part-time position available. Foxrock area, Dublin. Contact admin@cdpractice. com

Experienced dentist wanted as associate with view to purchase, in long established dental practice in Co Louth. Computerised, OPG, good mix private, PRSI and medical card patients. Thriving town. Huge growth potential. Tel: 086 2326212 or email casta@indigo.ie

Associate required three days a week to fill existing position in Co Kerry. Apply to Box No. J406.001.

Associate required to join our international team in multiple busy practice in East Co Galway. Full chair side assistants, modern equipment, Healozone, OPG, etc. Full or part-time considered. Email rothwellauct@eircom.net

Dental associate required for busy south west Dublin, three surgery practice to replace departing associate. Full support staff/OPG. Full or part-time position available. Tel: 087 6889394 for interview.

South Tipperary. Locum dentist required for maternity leave. To start January 2007. Phone Yvonne on 087 6950686 or 087 7451745.

Associate position, immediate start to replace departing colleague. Proximity to Dublin airport www.hughesdental.net. Digital, computerised, orthodontist, oral surgeon, hygienists, dental technician. Three surgeries. Tel: 086 2510036.

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Part-time dental nurse required for five or six sessions per week in Donnybrook, Dublin 4. Tel: 01 2691010. Email: setonmenton @eircom.net

Associate wanted – Waterford city centre – to replace recently retired colleague. Very busy, friendly, family practice. Very good terms. Move to newly developed premises imminent. Tel: 051 876546 (d) or 087 7718078 (e).

Locum required immediately to cover for colleague unable to work due to accident, Thurles, Co Tipperary. Tel: 087 8556092.

Enthusiastic and experienced general practitioner wanted to join our practice in Galway as an associate with a view. With digital radiography, OPG and I-Cat scanner, Cerec 3D, intraoral cameras. Full staff support and hygienist. Phone 091 550944 (after 8) or email drpmoore@eircom.net

Full and part-time qualified dental nurses required to work within the HSE Community Dental Services in Dublin Central and Dublin West. For further information contact Colleen O'Neill, Principal Dental Surgeon. Tel: 01 6455421 or email colleen.oneill@mailm.hse.ie

Limerick city, experienced associate dentist required, part-time, to replace departing colleague. Busy, modern, computerised practice with hygienist, OPG and digital x-ray. Tel: 087 9977763 or 061 335226.

Locum with a view to partnership required for a busy practice in Westport, Co Mayo from November 1, 2006. Tel: 087 7550673 after 6pm.

Dental nurse/receptionist required for modern specialist dental practice in Dublin 4. Experience desireable, basic computer skills necessary. Email declan@corcoranperio.com

Associate required three days a week for busy two-dentist practice, Foxrock, Dublin 18. Contact: 086 6006508. Email CV to admin@cdpractice.com

Maternity leave locum required in southeast from January 2007. Contact Brid on 086 8204247 evenings after 7 pm.

Periodontist wanted on a sessional basis for a specialist practice in Smithfield, Dublin 7. Flexible arrangements. Tel: 01 8780044 or email info@smithfieldclinic.ie

Full/part-time dental associate required for busy city centre practice in Dublin 1 to replace departing colleague, from the end of November. Full book/OPG and Hygienist. Tel: Clair 00 353 86 8200616.

Part-time associate wanted for busy, modern dental practice. 40 mins from M50 in midlands. All facilities. Contact 087 6874234 or 087 8518489.

Dental associate required for busy dental practice in Co Monaghan, one hour from Dublin/Belfast. Fully computerised, visiting orthodontist, hygienist and OPG, three surgery practice, accommodation available. Tel: 086 8237145.

South Dublin. Associate required in a busy modern practice, fully computerised, digital radiography, OPG, intra-oral, hygienists. Good private/PRSI mix. Send CV to dubdent@eircom.net

Dental associate/locum required for three months, 20 minutes Cork City, start mid-February 2007. Apply to Box No. J406.002

Full time locum dental surgeon required January – June 2007 to work in the Community Dental Services of the Health Service Executive in Dublin West. Email: colleen.oneill@mailm.hse.ie

Full/part-time dental associate required to replace departing colleague for modern Limerick city centre practice starting January 2007. Computerised digital radiography and OPG, Zoom II Cerec 3D. Excellent support staff. Please contact Eamonn Noonan on 087 9895381 or eamonnnoonan@hotmail.com

Part-time associate required to replace departing colleague in Tralee, Co Kerry, three days a week with a view to full-time work. Busy mixed practice. Full support staff, hygienist, intra-oral cameras etc. Tel: 087 2213923 evenings.

Kilkenny City. Departing colleague leaves an opportunity for holistic-minded dentist, starting January 2007, full or part-time. Newly equipped, RVG, 1/O cameras, ozone. Great staff. Contact Bill at billymccollam@yahoo.co.uk

Practices for Sale/To Let

Limerick: dental suite to let in newly converted practice in highly prestigious area. Fully computerised with integrated digital radiographs. OPG and lateral cephalometry. Would suit specialist hoping to build own list. All ancillary support provided. Please phone: 061-315228.

For sale. Cork city. Long established. Good location. Top-class equipment. Two surgeries. OPG/hygienist. Great staff. Expansion possible. Excellent figures. Realistic price. Principal career change. Tel: 087 2327557.

For sale – Galway. Single handed. Excellent equipment/staff. OPG, hygienist. Two surgeries. Long established. Half hour from city. Superb location. Flexible options. Freehold/leasehold. Superb figures. Tel: 086 8198887.

For sale – Co Limerick. One man, two surgeries. Great equipment/facilities. Total revamp. Loyal staff. Excellent figures. High profit margin. Flexible options. Freehold/leasehold. Tel: 086 8075273.

For sale – Carlow. Very busy, two surgeries. Excellent equipment, OPG. City centre. Leasehold/freehold options. High profits. Ripe for expansion. Principal retiring. Give-away price. Tel: 086 8075273.

For sale – Dublin. City centre three miles. Excellent location. Two surgeries. OPG. Very busy. High new patient numbers. Great figures. Realistic price. Leasehold. Reasonable rent. Tel: 086 8198887.

For sale – Limerick city. Great location. Single handed. Huge room to expand. Long established. No medical card. Dentist retiring. Realistic price for practice/ goodwill negotiable. Tel: 087 2327557.

For sale – Dublin South. Superb location – Dart. Single-handed, OPG, hygienist. Two surgeries. Modern equipment. Leasehold – low rent. Very busy. Great figures. Expansion possible. Competitively priced. Tel: 086 8075273.

For sale – Mayo. Superb opportunity. Modern computerised. Single-handed. Huge potential for expansion. Great equipment. Leasehold. Very busy. Excellent figures. Realistic price. Immediate sale. Tel: 086 8075273.

Practice for sale. For sale, Dublin city centre. Leasehold, two surgeries, reasonable rent. Commenced in 1964. Dentist retiring. Realistic price. Tel : 01 8389685.

To let. Dublin 24. Commercial unit 102 sq. m. provides excellent opportunity to establish new business in high-profile, densely populated area. Contact HWBC 01 7750531.

Dental surgery to let in rapidly expanding Kilkenny town. Excellent location. Tel: 087 2933759.

Equipment for Sale

For sale. Intra-oral x-ray developer. Durr Periomat plus 1307/1308. Two to three years old. Tel: 01 2608574.

For sale. Five index filing cabinets. Hold three rows of index cards, nine drawers in each cabinet (as new). Call Niall at 087 2531401 or email niall@sunglasses.ie

QUIZ

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