The Dental Health Services Research Unit was founded in 1979 at the University of Dundee. The Chief Scientist Office of the day recognised the need for research to map Scotland’s poor record of dental health more clearly, to assess the effectiveness of routine dental care and to provide an evidence base for the measures employed by the NHS in Scotland to prevent and manage oral disease. These issues remain as major challenges today in a very different world, almost 30 years later.

The Unit is core-funded by the Chief Scientist Office of the Scottish Government Health Department until December 2008. It is also supported by NHS Education for Scotland (NES), the University of Dundee and an increasing range of external funders.

The remit for DHSRU is:

• To contribute to improving oral health and effective dental healthcare in Scotland and beyond by undertaking and facilitating collaborative health related research and development which is delivered and implemented to international quality standards

In addition:

• DHSRU’s role in dissemination is to communicate research findings to the NHS, research communities and professions through a twin-track policy using both peer reviewed publications and a range of other effective communication methods.

In the early 1980s, DHSRU established itself with a series of now classic papers reporting analyses from longitudinal studies of routine NHS dental care and pioneering work in dental treatment decision making. Professor Pitts took up his appointment as Director in 1985 and, together with his team and network of national and international collaborators, has continued to build on these foundations.

DHSRU has evolved and continues to develop to meet the changing needs of the NHS in Scotland, to take forward strategically important research which will improve health and healthcare in ways which meet the realities of the university sector, the research communities and the dental profession. In 2006/7/8, DHSRU continues to make long-term and internationally recognised contributions in the areas of dental epidemiology, public health, caries diagnosis and management, practice-based dental research, clinical effectiveness and evidence based dentistry. The DHSRU strategic framework, based on advice from WHO Europe, increasingly provides the cross-Unit template for what DHSRU plans and achieves. This framework focuses on researching and facilitating delivery of both Information Services and Knowledge Services for Improving Oral Health. This approach serves both the research agenda and the wider DHSRU Collaboration for Improving Dentistry (CID).

DHSRU became part of the Community Health Sciences Division within the then Faculty (now College) of Medicine, Dentistry and Nursing in 2003 and plays a key part in the development of the Health Informatics Centre (HIC). HIC is a unique national and College resource which aims to better utilise information to improve the quality of patient care and support excellence in clinical and health services research. The College is presently re-structuring to improve research performance and NHS links.

This Report provides an overview of the activities of DHSRU in 2007, but also includes some information from late 2006 and early 2008, where pertinent.

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Director’s Overview

Welcome to this Report which is the second of what will become an annual series of Reports from the Dental Health Services Research Unit (DHSRU). The Unit is based at the University of Dundee and has long-standing and close links with the National Health Service, locally, across Scotland (with NHS Education Scotland, the Scottish Government Health Department and NHS Boards) and across the United Kingdom. DHSRU also works with a range of other research funding organisations and collaborators at the Scottish, UK, European and wider international levels. This document builds on the format of the first Annual Report and is a simplified version of previous “progress reports” prepared over the years for our key funder: the Chief Scientist Office (CSO) of the Scottish Government Health Department.

The aim of the Report is to give an accessible overview of DHSRU activities in 2007 for all interested parties; from research funders to University and NHS collaborators, as well as users of our research and development activities. Where appropriate the Report covers the period August 2006 – April 2008. The DHSRU website (www.dundee.ac.uk/dhsru) also contains further information.

1. The structure of the Report is set out below

This Director’s Overview sets out to explain the structure of this Report and the roles of DHSRU. It then summarises key developments over the period and introduces highlights from each of the twelve elements of the DHSRU Strategic Framework. This Framework is central to the integration of the various strands of DHSRU work and has evolved since the last Report.

An updated Staff List, as at 31st December 2007, is given for information and context.

The DHSRU Strategic Framework – Highlights in 2007 section selects specific highlights for the year for each of the twelve elements of DHSRU activity in facilitating Information and Knowledge Services. This section is not an exhaustive list of Unit activity; rather it is designed to give an accessible overview of the range of research, dissemination and implementation work undertaken by DHSRU. For each highlighted area, the section presents information on: background, progress over the year, linked graphic information and then provides a summary to explain why the area is important in the context of meeting the Unit’s remit and goals.

The Dental Caries Control Programme section provides an overview and update on this Unit research programme since the last Report and has been prepared by the Programme Director Dr Gail Topping.

The Effective Dental Practice Programme section provides an overview and update on this Unit research programme since the last Report and has been prepared by the Programme Director Dr Jan Clarkson.

The Oral Health and Health Programme is new, following the recruitment of Professor Ruth Freeman to DHSRU and NHS Highland. This section provides an overview and update on this Unit research programme and has been prepared by the Programme Director Professor Ruth Freeman.

This year there is no specific summary of the increasing number of DHSRU Cross Programme Activities as these activities, often grant funded as joint Projects, fit into the Strategic Framework outlined above and discussed in more detail later.
The **Appendix** provides a list of DHSRU **Dissemination** activities since the last Annual Report. It provides an extensive list of DHSRU Presentations from the end of 2006 to Spring 2008, giving information on the presenter, the meeting, the venue, the date and any particular features about the audience. This is followed by an extensive list of DHSRU Publications from the end of 2006 to Spring 2008. These are subdivided into: peer reviewed journals, professional journals, reports, book chapters, clinical guidelines, invited critical commentaries, conference proceedings, abstracts, web based articles/activities, other outputs and media, reports in the popular press and SDPBRN reports and publications.

2 • The roles of DHSRU

Unit activity has remained focused around the remit of DHSRU which has been developed with key funders and the University of Dundee over a period of years, this is:

- to contribute to improving oral health and effective dental healthcare in Scotland and beyond by undertaking and facilitating collaborative health related research and development which is delivered and implemented to international quality standards.

In addition:

- the Unit’s role in dissemination is to communicate research findings to the NHS, research communities and professions through a twin-track policy using both peer reviewed publications and a range of other effective communication methods.

Increasingly, as DHSRU evolves to meet the changing needs of the NHS and other users of its research, the Unit has two complementary roles:

a) Delivering Research and

b) Delivering Service Development.

The Unit developed two related goals in 2005-6.

2.1 • DHSRU - Delivering Research

**GOAL 1:**

To sustain a viable and effective Dental Health Services Research Unit (DHSRU) with a range of research active principal investigators working as a team to deliver world class dental health services research with which to play our part in developing the evidence base for more effective routine dental care.

To help achieve this goal the Unit is continuing to develop its key researchers and have also recruited Professor Ruth Freeman to join us. The Unit Director and the three Programme Directors have all pursued both external research funding opportunities compatible with our remit and in parallel have sought out research gaps of relevance to our various NHS partners. An increasingly important facet of the primary and secondary research work of DHSRU is the integration of the results of its research with the developing evidence base in dentistry in order to help produce and develop both Information Services and Knowledge Services. This is an approach developed by the Director and Unit staff over the last four years following organisational templates and strategy developed by the World Health Organisation (WHO) Europe in Geneva. The framework is also compatible with the developing health informatics field and with the *Exploiting the Power of Knowledge Strategy* of NES and the Knowledge Services remit within *Connecting for Health* in England.
• **Information Service** activities of DHSRU involve providing a robust infrastructure to support three areas: the Measurement of Health Status / Dental Health Information Systems / Evaluation of Oral Health Outcomes. For example, we aim to provide more comprehensive measures of caries status than are currently available, in formats which will fit well with routine dental information systems and lead to the evaluation of more health related, rather than disease related, outcomes of preventive interventions.

• **Knowledge Service** activities of DHSRU involve our projects on - Disseminating and Implementing Research / Defining Evidence Based Dental Healthcare / Developing Dental Clinical Effectiveness. We aim to ensure that the results of research will be communicated effectively in a variety of formats to a range of stakeholders from the local, national and international research, clinical and dental public health communities. The results of research and systematic reviews feed directly into the on-going production, review and updating of clinical guidelines and guidance which are being made available on paper and electronically.

2.2 • DHSRU - Delivering Service Development

**GOAL 2:**
To develop and sustain a parallel, NHS-linked and funded DHSRU Service Development Portfolio which helps put research into both clinical and public health practice as part of an evaluative culture.

This new Portfolio of activity is an extension of the evolving research “implementation” agenda which the Unit has been building over the last decade. It was initially assembled following the publication of the 2005 Dental Action Plan for improving oral health and modernising NHS Dental Services in Scotland, the “Kerr Report” the National Framework for Service Change: Building a Health Service Fit for the Future and the Scottish Executive’s response – Delivering for Health. Since then the publication of the Scottish Government’s 2007 discussion document BETTER HEALTH, BETTER CARE and its consultations on eHealth Strategy, together with the draft dental eHealth strategy discussed by the “Dental Information Group” in Scotland have built a clearer picture of...
the future direction of a patient-centred, primary care based NHS in Scotland with a focus on prevention and anticipatory care. Dentistry and Oral Health have key parts to play in this agenda. DHSRU is uniquely placed to provide an environment where public health meets evidence based clinical care, enabled by Information Technology.

In response to these developments and following widespread consultation with stakeholders DHSRU has designed and started to build a **Collaboration for Improving Dentistry (CID)**. Working with NHS and other partners locally, nationally and internationally we strive to facilitate and integrate all the key stages of what is now referred to as “Knowledge Management”. The elements of this dynamic process are depicted graphically in the diagram below:

![Diagram of Collaboration for Improving Dentistry (CID)](image)

### 3 • Key developments over the past year

We continue to live in ever-changing times and the environments in dentistry, in health and health services, and in Universities are no exception, whether at the local, national or International level. These changes represent a series of opportunities for DHSRU and its R&D “products”, as well as providing a number of significant challenges in terms of funding streams and continuity.

#### 3.1 • Changes within the NHS

Evolutionary but radical changes are funded and underway in NHS dental services in Scotland with dentistry and dental health higher up the political agenda than ever before. The wider service as a whole in Scotland is re-aligning to a more proactive and preventive philosophy in accordance with the Scottish Government’s *BETTER HEALTH, BETTER CARE* discussion document and related Reports. DHSRU is particularly well placed to work with and assist NHSScotland colleagues with the many dental aspects of this agenda.

One area in which significant progress has been made over the last year is in the area of dental e-health. Effective collaborations are in place between DHSRU, HIC (the Health Informatics Centre), National Services Scotland (NSS) and the Dental Public Health Unit at the University of Glasgow. This collaboration has led to service developments around the Childsmile initiatives and a promising joint research application to the Wellcome Trust. The way in which this interaction is structured is shown below:
3.2 • Changes within the University of Dundee

A number of changes have taken place within the Medical School and wider structures at the University of Dundee. The creation of four discrete Colleges, each led by a Vice-Principal, has produced a new management structure as the University moves forward and seeks efficient success in a challenging funding environment. The Medical School Division of Community Health Sciences, in which DHSRU currently resides, will cease to exist in August 2008. New structures are being put in place in the College of Medicine, Dentistry and Nursing across the three Schools. It is not yet clear how best DHSRU will fit into the new arrangements but we hope to maintain links with our colleagues in the excellent accommodation in the Mackenzie Building and also continue to link with the research resource that is the Health Informatics Centre (HIC).

An overview (shown below) of what we hope to achieve in the new arrangements is a financially viable structure that will facilitate the effective Collaborations that we have built up over the past five years.
3.3 • Changes and staffing within DHRSU

Over the last year, a key plank of DHRSU’s forward strategy (outlined in conjunction with its funders and stakeholders) has again been to achieve:

• Increased activity to try to attract external grant funding to support remit-relevant work
• Increased amount of funded joint working with NHS in service development that meets the needs of NHSScotland.

Good progress has been made in a number of areas. Appointing Professor Ruth Freeman to an innovative joint NHS Highland / University of Dundee funded post for a Professor of Dental Public Health Research / Consultant in Dental Public Health to work in both DHRSU and in NHS Highland has made a real contribution to both elements of the strategy.

To address the first point, a number of new research grant applications have been made, with some further successes and a number of applications which are still outstanding. With regard to NHS collaborations, there have to date been a broad range of contributions from Unit staff to the implementation and further development of the Dental Action Plan and new initiatives from the recently appointed Chief Dental Officer.

The strength of DHRSU is its people and their ability to work collaboratively in teams. This flexible team-working is important internally (as the subsequent sections will demonstrate in terms of activities, output and quality) as well as externally where it is becoming essential to secure funding for and to prosecute multi-disciplinary health service research. Collaborative team working is also essential for liaising effectively with service partners and colleagues in other academic centres.

I would like here to acknowledge the tremendous contributions made to the work and achievements of DHRSU by the entire team, too numerous to mention all individually. Examples include:

• the all important Programme Directors, Drs Clarkson and Topping who, with Professor Freeman, have made unique contributions in building distinctive but complementary R&D portfolios which deliver the Strategic Framework.
• the research and research support staff, both full and part time, and to the tremendous DHRSU administrative and clerical team led so ably by Mrs Marilyn Laird.
• the range of dental HSR expertise and corporate memory the Unit enjoys is unique in the UK, extending for example from methodological insights in cariology and primary care with Dr Chris Longbottom, via a deep understanding of the dental team from a health psychology perspective with Dr Debbie Bonetti.
• Professor David Ricketts of Dundee Dental Hospital has continued to make an invaluable contribution in cariology, particularly to the ICDAS research agenda.
• invaluable partnership with dental epidemiology in Scotland continues to come from Mr Martyn Merrett of NHS Tayside while unique insights into evidence based dentistry are contributed to DHRSU from Mr Derek Richards of NHS Forth Valley.
• The new Chief Dental Officer for Scotland has already made significant contributions to strategy and to a number of DHRSU projects.
• Similarly, the Postgraduate Dental Dean for Scotland also continues to play a key role in strategy and delivery of initiatives linked to dental education.
• DHRSU would like also to acknowledge the essential support from all our funders, including CSO, NES, other NHS bodies and the research grant awarding bodies who have supported us over this period.
3.4 • DHSRU Dissemination of Research

The extension to the Unit’s remit calls for us to “communicate research findings to the NHS, research communities and professions through a twin-track policy using both peer reviewed publications and a range of other effective communication methods”. We believe that we have continued to achieve this through:

• a very extensive programme of publications which are set out in full in the Appendix. These cover a very broad range from papers published in journals such as the Lancet and Social Science and Medicine and the highest ranking dental journal in their fields, such as Journal of Dental Research, Caries Research, Community Dentistry and Oral Epidemiology as well as a series of Cochrane Reviews to a very wide range of publications in professional and other journals and media.

• an equally extensive and varied series of invited presentations have been made by Unit Staff to diverse audiences involved with research, as well as to dissemination targets in the service, planning, education and public health communities in Scotland, the UK and internationally. The details are set out in full in the Appendix.

4 • The DHSRU Strategic Framework and highlights at 2008

DHSRU undertakes a wide range of research and development studies, facilitating the delivery of Knowledge Services and Information Services for improving oral health with local, national and international collaborators. Studies vary from focus on the individual, to large scale studies at the population level using both qualitative and quantitative methodologies. The World Health Organisation (WHO)-inspired Framework used by the Unit to maintain a coherent theme in all its activities has been set out graphically above as twelve discrete, but linked, elements:

4.1 DHSRU Strategic Framework

The top half of the graphic has six linked elements which support research and delivery of Information Services – these elements support: the measurement of health status, dental health information systems and evaluation of oral health outcomes. The lower half of the graphic shows the six linked elements which support research and delivery of Knowledge Services – these elements support: disseminating and implementing research / defining evidence based dental healthcare / developing dental clinical effectiveness. The two halves of the framework do link and there is an essential dynamic, as new research findings should prompt an appropriate review and, if necessary, revision of guidance and practice.

The strategic framework is employed by the Unit to:

• Deliver DHSRU’s remit
• Ensure our research stays focused and on track
• Maintain and build up appropriate Scottish, UK and international links and collaborations
• Ensure that the evolving Research Programmes stay relevant and are delivering a positive impact to NHS Scotland and beyond
• Provide established routes to ensure that research results incrementally inform policy and are used in practice and education
4.2 • DHSRU highlights at 2007/8
Highlights from DHSRU’s work over the last twelve months have been selected for each of the twelve elements of the DHSRU Strategic Framework which was outlined earlier in this overview. The information presented in this next section is not meant to be comprehensive; it aims merely to provide a record of recent progress achieved in some areas and to demonstrate both the range and utility of the Unit’s work.

Element 1 • Surveillance and Oral Health Monitoring at Population Level – a range of DHSRU’s current and continuing collaborations in dental epidemiology have been chosen which span the Scottish, UK and international activities in this field.

Element 2 • Surveillance and Oral Health Monitoring at Practice Level – in this case, work developed over a range of DHSRU research, combined with enhanced data collection by General Dental Practitioners and an EU funded project demonstrate advances in the use of practice-derived dental data.

Element 3 • Health and Oral Health Promotion including Inequalities – developments in implementing and evaluating oral health preventive programmes for the homeless and work to enhance our understanding of parental concerns around dental registration of children are the highlights of this new element.

Element 4 • Caries Risk Assessment and Preventive Caries Management – the examples selected here are an international synthesis of caries aetiology and risk factors we published in the Lancet and a UK-wide collaboration built to mount a formal trial to assess the value of restoring primary teeth in children.

Element 5 • Randomised Clinical Trials in Dental Primary Care – examples of work in this area are drawn from the work of the Scottish Dental Practice Based Research Network (SDPBRN) and the new TRiaDS Implementation research collaboration.

Element 6 • Development of Dental Informatics and e-health – developments of an e-health solution to monitor a national oral health demonstration programme and a collaboration to build and explore chronological longitudinal records are outlined.

Element 7 • Understanding Behaviour and Behaviour Change – the two highlights here are an ESRC funded exploration of clinician behaviour via routine datasets and a CSO funded study on understanding communication during patient-dentist interactions in primary care dentistry.

Element 8 • Evaluation of Education to Operationalise Research – the findings of a range of studies around Vocational Training for the dental team across the UK are summarised.

Element 9 • Supporting and Evaluating Continuous Quality Improvement – recent work from the NES supported Scottish Dental Clinical Effectiveness Programme (SDCEP) across a range of topics is presented. The guidance produced supports the dental team in providing evidence based, safe care.

Element 10 • NHS Scotland Links with Knowledge Services – the development and expansion of the Scottish Dental web portal www.scottishdental.org is outlined as more knowledge becomes available to the dental team in fewer mouse clicks.

Element 11 • NHS UK Links with Knowledge Services – highlights include cooperation between the virtual Centre for Improving Oral Health, the Cochrane Oral Health Group and the International Association for Dental Research to prioritise systematic reviews and a UK-wide trial to assess the outcomes associated with using NICE recall interval guidance.

Element 12 • International Links with Knowledge Services – the example chosen is the series of linked developments DHSRU has been leading with the International Caries Detection and Assessment System and ICDAS Foundation.
Each highlight is illustrated with a symbol indicating the geographical breadth of the research. The following key applies:

- Scotland wide
- UK wide
- EU wide
- Global

Further details of the progress made over the last year can be found in the Sections after the Highlights produced by the three DHSRU Programme Directors:

**Effective Dental Practice**  
Dr Jan Clarkson

**Dental Caries Control**  
Dr Gail Topping

**Oral Health & Health Research**  
Prof Ruth Freeman

4.3 • Postscript

I hope that you will find from this Director’s Overview (and in the other detailed materials set out in this Annual Report) evidence that the wide range of DHSRU activities described, from the East, West and North of Scotland on one hand, to the rest of the UK and the wider reaches of Europe, the US and as far as Asia on the other, are having a real and sustained impact.

DHSRU believes that it continues to contribute to improving oral health and effective dental healthcare in Scotland and beyond. We also believe that we are playing our full part in undertaking and facilitating collaborative health related research and development, delivering and implementing this research to international quality standards and disseminating our work by a broad range of methods to appropriate target audiences.

Please do not hesitate to contact me at n.b.pitts@chs.dundee.ac.uk (or through other contact methods given on the Report cover) if you have questions, ideas, comments or suggestions about our work.

**Nigel Pitts • Director • Dental Health Services Research Unit • May 2008**
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Identifying (in italics below their name) their source of funding as at 31 December 2007

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The development of dental informatics & e-health in health & oral health promotion including inequalities carries risk assessment & preventive caries management supporting & evaluating continuous quality improvement.

NHS UK links with knowledge services.

International links with knowledge services understanding behaviour & behaviour change.

International Caries Detection & Assessment System (ICDAS)
1 • Surveillance and Oral Health Monitoring at the Population level

Background

Since 1987, DHSRU has worked on oral epidemiology at the population level with a range of partners from the Scottish NHS Boards through the National Dental Inspection Programme (NDIP); to the other UK territories – under the auspices of both the British Association for the Study of Community Dentistry (BASCD) and the Office for National Statistics (ONS). Internationally, DHSRU are also important partners within the European Global Oral Health Indicators Development (EGOHID) project and numerous ventures using the International Caries Detection and Assessment System (ICDAS).

Progress over the period of this report

• DHSRU continues to contribute as an effective partner within NDIP, working with Mr Martyn Merrett and other NHS colleagues to ensure the maintenance of high quality standards and to provide academic input to national reports of the dental health of children in Scotland. In addition to the training and calibration of “Detailed” dental examiners and the analysis of these epidemiological inspections, DHSRU has assisted with improvements to the standardisation of dental examiners for the “Basic” dental inspections.
• Under the academic leadership of DHSRU and Martyn Merrett of NHS Tayside, evaluation of the NDIP survey system has been facilitated by the allocation of one day per week from a senior dental officer.
• Challenges have been posed to the BASCD surveys of children’s dental health in England and Wales by the necessity for positive consent which is causing disruption to the programme in many areas. DHSRU continues to assist with BASCD analysis and reporting.
• The Adult Dental Health Survey in 2008 has provided another challenging piece of work. Whilst the decennial surveys provide a snapshot of adult dental health across the UK, their value at anything other than national level in Scotland is limited. DHSRU has been working with a small group looking at methods of surveying the dental health of adults in Scotland which will allow useful data to be generated for smaller geographic areas such as the Community Health Partnerships.
• ICDAS has now been used successfully as a tool for gathering epidemiological data in a number of countries including Iceland and Germany. DHSRU has been asked to host the Icelandic database and to collaborate with colleagues in Iceland and in Indiana University in analysing and interpreting the findings of this survey.

Content on the facing page

The cover of the most recent NDIP Report
Organisations which collaborate with DHSRU on oral epidemiology at the population level

Highlight of current unit work

A new and exciting area of work is the Icelandic database being hosted by DHSRU. This rich database consists of ICDAS dental chartings and bitewing radiographs and should permit new insights into assessing oral health at the population level.
The collection of oral health information by specially commissioned epidemiological surveys has become more challenging in recent years. Surveys are expensive to conduct, access to adult patients can be difficult and the need for positive consent in England and Wales has caused problems with sampling and representativeness. All of these challenges have led to an increased focus on devising new ways of surveying and monitoring oral health.

- DHSRU is involved in a Scottish working group considering a number of alternative approaches to collecting adult dental health data. One proposal is the use of routinely collected data from dental practices. Although the current GP17 form for dental payments is of limited value in this respect, modifications could be made to allow the collection of useful epidemiological data.
- Work in this area links well with the possibility of using information gathered from the proposed NHS Extended Dental Examination in Scotland. Patients would have a comprehensive dental examination including an ICDAS charting of both enamel and dentinal caries. Such routinely collected information would offer a useful way of monitoring the oral health of people accessing dental services. This work has been progressing through the Oral Health Assessment project and is being taken forward by the Scottish Dental Clinical Effectiveness sub-group as a national guideline.
- ICDAS has been the subject of a study conducted by a Scottish General Dental Practitioner, Mr Charles Ormond, in collaboration with DHSRU. Following ICDAS training, he examined 100 patients using ICDAS to test its feasibility within the dental practice setting in Scotland. This project provides valuable insight into the potential benefits of an ICDAS examination within dental practice.
- DHSRU are the leaders of Work package 7 of the European Global Oral Health Indicators Development (EGOHID) project. The concept is to use dental practitioners in primary care to collect epidemiological information in their practices. In the past year we produced a clinical form and supporting guidance for the standardised collection of fifteen essential clinical indicators which can be compared in a valid manner across all EU member states using a sentinel dental system. The project is now at the evaluation stage and is being piloted in eight EU countries. The guidance has been produced in two formats, traditional paper-based information and an interactive e-learning programme designed to assist dental personnel to collect epidemiological information in a systematic way. In the UK element of this evaluation phase, General Dental Practitioners in Lancashire were trained using the e-learning package and asked to evaluate the clinical form within their dental practices. This phase has now been completed and the findings drawn together.

The parallel developments in this particular area are a demonstration of the importance now attached to the possibility of surveillance and oral health monitoring at the practice level. Much progress has been made towards realising the potential of using the general dental practice setting to collect valid epidemiological information.
The assessment has been designed to be conducted in the dental surgery using:

- Dental light
- Dental mirror
- Williams and/or CPI probe
- 3-in-1 air syringe
- Cotton wool rolls.

Follow the question order on the form to maximise efficiency and minimise the risk of skipping questions.
Increasing social capital: a research agenda for health

**SOCIAL EXCLUSION**
- unemployment
- relative poverty
- homeless people
- physical and/or learning disabled
- people with addictions
- migrant workers
- immigrant workers
- mental ill-health
- physical ill-health

**HEALTH POLICY**
- dental action plan
- better health, better care

**SOCIAL CAPITAL**
- bonding (within group)
- bridging (between groups)
- linking (between groups)

**COMMUNITY CAPACITY BUILDING**
- social support
- communication
- social identity
- risk behaviour

**ORAL HEALTH**
- communication
- empowerment
- access to resources

- community capacity building
Oral health and health promotion is about reducing health inequalities by increasing social inclusion, social capital and health. Adopting a community development approach allows people’s felt needs to be incorporated into evidence-based health promotion interventions.

Developing, Implementing and Evaluating an Oral Health Preventive Programme for Homeless Populations across Scotland

The Dental Action Plan in 2000 called for: ‘NHS Boards [to] develop and deliver oral health care preventive support programmes for adults most in need such as ... the homeless.’ In keeping with this, the above project aims to:

• Evaluate the current models of preventive service and practice for homeless populations in Scotland.
• Develop an evidence-based oral health care preventive package tailored to the specific needs of the homeless (roofless and houseless) in Scotland.
• Evaluate the evidence-based oral health preventive care package for the homeless (roofless and houseless) populations in Scotland.

The homeless programme of work is entering its first phase and involves partnership working with seven NHS Health Boards across Scotland. Funding has been secured from the Dental Action Plan and a senior researcher is to be appointed. This programme of work will be underpinned by the community development approach and will use a mixed methodological strategy.

Developing an inventory to Assess Parental concerns and Enable child dental Registration: The DAPER study

The ChildSmile Practice programme is an example of multidisciplinary working between health visitors and dental health professionals. Working closely with mothers of new born infants, a dental health support worker enables the mother to access oral health care for her child. However, approximately one quarter of participating mothers from areas of greatest social deprivation have dropped out of the programme. The DAPER study thus aims to find out the concerns of parents to allow the development of a reliable and valid questionnaire which could be used to assess parental concerns and to enable the ‘at-risk’ family to access preventive dental services.

DAPER is entering its first phase in partnership with the University of Glasgow, the University of St Andrews and NHS Health Boards across Scotland. Funding has been secured from ChildSmile for this three year programme of research and development. A researcher will be appointed to develop, assess and conduct a field trial of a new psychometric measure of parental concern.

An illustration of how increasing social capital can contribute to oral health

This programme of research is about social inclusion, social capital and health. Uncovering people’s felt needs allows for improved social networks and communication between groups of people and this is at the centre of promoting social capital and increasing health. The two projects detailed above contribute not only to the aims of the OHHR programme but also to reducing health disparities in socially excluded groups in Scotland.
DHSRU has made major contributions to the evidence base in cariology over the last two decades. We have an international reputation in the area and take lead roles in a range of caries research organisations. Our focus continues to be on getting best evidence into clinical and public health practice.

A well received and well cited paper published in the Lancet, outlined the evidence for the complexity of dental caries, in respect of both the aetiological factors and the risk factors. This international collaboration has provided an up to date synthesis for both medical and dental practitioners as well as researchers and the public health audience.

The ICDAS collaboration (see Element 11) has turned its attention to using the evidence base in lesion Detection, Assessment, combined with patient-level Risk Assessment to inform appropriate treatment planning for personalised, preventive clinical caries management. Some of this material is now being incorporated in Guidance for Scottish dentists through the SDCEP route. There is mounting interest in this area internationally, reflected in the range of international invited presentations that Unit Staff have provided.

Gail Topping has led on an application to the NIHR HTA Programme in response to uncertainty about the evidence supporting the routine restoration of decayed, but pain-free, primary teeth in children. Some of the debate on this issue has been stimulated by previous DHSRU publications by Pitts, Levine and Nugent.

The Dundee-led application 07/44/03 - FiCTION - Filling Children’s Teeth: Indicated Or Not? has succeeded into the final round and a decision is expected in July. To undertake this study DHSRU (Gail Topping, Jan Clarkson, Nigel Pitts and Ruth Freeman) are working with colleagues from Dundee Dental School (Nicola Innes and Dafydd Evans) in collaboration with Glasgow - Richard Welbury, Newcastle - Jimmy Steele, Anne Maguire, Elaine McColl, Nick Steen, Mark Devenil, Cardiff - Barbara Chadwick, Leeds – Monty Duggal, Sheffield - Chris Deery and London - Ferranti Wong.

The target like figure (from: Selwitz RH, Ismail AI, Pitts NB. Dental caries. Lancet 2007 369: 51-59) summarises in concentric circles the various determinants of caries initiation and progression. These range from tooth ultra-structure to local factors to public health and social issues. The quizzical child attending a dental surgery is an excellent metaphor for the current debate to be examined in the FiCTION Trial of whether or not to restore children’s primary teeth.

Bringing together and brokering the UK Collaboration to assemble the application to HTA for the FiCTION Trial has been a major highlight for DHSRU, as has our role in increasing the awareness of the anticipatory care possibilities of modern caries management.
Development of dental informatics & e-health support and evaluate continuous quality improvement linking to NHS UK links with knowledge services and international links with knowledge services understanding behaviour & behaviour change

DHEBU researching and facilitating delivery of Information Services for Improving Oral Health
development of dental informatics & e-health
health & oral health promotion including inequalities
moderated dental trials in dental primary care

NHS UK links with knowledge services
NHS England links with knowledge services
supporting & evaluating service improvement
understanding behaviour & behaviour change

NHS England Research & Knowledge Services
NHS Scotland Research & Knowledge Services
NHS England Research & Knowledge Services
NHS Scotland Research & Knowledge Services

6th Annual National Symposium

Soft Tissue Management and Research in Dental Primary Care

Thursday 13th March 2009
Dundee Dental Education Centre
Background

The Scottish Dental Practice Based Research Network (PBRN) was established in 2000 and aims to promote the implementation of research evidence through the conduct of high quality research and dissemination of evidence. The 6th National symposium on aspects of soft tissue management and research in dental primary care was both well attended and received by representatives from the primary care dental team, dental education, and dental research and policy.

Progress over the period of this report

• DHSRU input into a number of research projects administered by the Scottish Dental PBRN considerably strengthened partnership working with this network. The research projects include attitudinal surveys within all dental professional groups for a variety of primary dental care behaviours, as well as randomised controlled trials (RCTs) evaluating interventions specifically designed to encourage quality health care delivery.

• During the last twelve months, two hundred general dental practitioners (GDPs) participated in a survey to further an understanding of current decontamination practice in everyday primary care conditions. The results of this survey have informed the design of an intervention to encourage the implementation of evidence-based best decontamination practice in Scotland. Four-hundred general dental practices in Scotland are currently being recruited to an RCT investigating the effects of this intervention.

• One hundred general dental practitioners in Scotland have been recruited to an RCT investigating the effect of having access to an e-learning continuing professional development (CPD) package for a twelve month period in addition to the usual CPD courses. Both the control and intervention groups have completed baseline questionnaires measuring psychological and behavioural outcomes.

• A grant application was submitted to the Health Technology Assessment Programme (HTA) for funding to investigate whether fixed-period twenty-four month or risk-based recall intervals are more effective and cost effective in maintaining oral health than the traditional fixed-period six month recall. This application was successful securing £483k to conduct a feasibility study. The primary objectives are to compare measures of health related quality of life and oral health/disease control for dentate adults experiencing different recall intervals for a period of four years.

• On the 8th February 2008, the first Translation Research in a Dental Setting (TRiADS) meeting took place in Edinburgh. The purpose of the meeting was to use multidisciplinary expertise to develop a framework to systematically inform decision-makers on the effectiveness and cost-effectiveness of different strategies to promote health outcomes in primary care dentistry.

Content on the facing page

A TRiADS poster presented at the NES Dental Conference on 7 May 2008 and the front cover of the delegate pack for the SDBPRN 6th National Symposium held on 13 March 2008.

Highlight of current unit work

By conducting high quality trials, analyses and following broad-ranging result dissemination strategies through professional, primary care, public and scientific routes, DHSRU has been able to impact on dental practice and national policy, as well as develop the research tools, infrastructure and maintenance of the network links necessary to inform future high quality RCTs.
Background

DHSRU were co-applicants in the Scottish Research Infrastructure Fund (SRIF) bid to extend the Mackenzie Building and create a Health Informatics Centre (HIC) in Dundee. This was (and remains) a joint venture between the University of Dundee and NHS Tayside, working with Information Services Division (ISD).

Progress over the period of this report

There has been significant progress with the Childsmile@HIC project (see facing page) which started in six East of Scotland NHS Boards, has been extended to include management support for Childsmile core and is now being exploited to build a new integrated system to allow North of Scotland and Island Boards to join in an integrated national Childsmile Programme.

DHSRU participation in the re-formulated Dental Information Group (DIG) has enabled us to share knowledge and expertise with other stakeholders and participate in the development of the Dental e-health Strategy for Scotland.

In collaboration with HIC, NSS, ISD, PSD with the Universities of Copenhagen and New York, DHSRU has been leading a bid to the Wellcome Trust concerned with Dental eHealth: the Le@P-ReCORD Partnership & Research Programme. The acronym is for Longitudinal electronic @ssisted Patient Records for Chronological Oral-Health Routine Databases. The team are through to the final round of the three stage process. Working together, this Partnership aims to transform both research and service development in the field of dental eHealth by using longitudinal electronic records and secure, anonymously-linked, databases to build both knowledge and research capacity. The Programme will build on current developments to explore: new methods for routine data acquisition, new methods for improving our corporate ability to link specific databases on an as-needed basis and then to explicitly share results and experiences with the wider eHealth community across Scotland, the UK and internationally.

Content on the facing page

The poster shown on the facing page was prepared jointly by DHSRU with NHS Fife and was presented to the “e-health in Scotland Event - Delivering Healthcare for the 21st Century” held in Glasgow on June 11th 2007. The poster outlines the e-health solution developed by DHSRU with HIC which supports NHS Fife and five other East of Scotland Boards in what is now a National Programme of Childsmile Nursery and School.

Highlight of current unit work

DHSRU has been a partner in building capacity in the Health Informatics Centre (HIC) and is now helping to bring novel and practical e-solutions to dental services in Scotland which also create research opportunities through the safe provision of routine data that can be anonymised when necessary.
An eHealth solution to monitoring a national oral health demonstration programme

Graham Bell (NHS Life &籍属性afi University of Dundee)

Chidsmile ( Nurs) is a national oral health demonstration programme aimed at improving the oral health by delivering preventative services to targeted children. The programme is delivered to educational settings using mobile equipment rather than in clinical settings.

The role of technology:

An eHealth solution provides a data management infrastructure to schools and practices which is tailored to the users, whether NHS or private settings. This solution can be used for monitoring, refining and evaluating the demonstration programme. This project could provide the first step in a phased approach to the secure sharing of a national dental dataset.

System Overview:

- Targets children by primary and secondary school.
- Continuously collects health information related to the children’s oral health via internet connected dental practices.
- Collects data on children’s dental health and behavior directly to the central server.
- The data is securely encrypted and updated over a secure network.
- The system is accessible online through the Childsmile project website.

The secure data structure offers the creation and updating of a bi-national database.

Conclusions:

The project demonstrates the feasibility of introducing an eHealth solution that can provide the necessary data collection and analysis for the demonstration programme. It may have significant applications to the evaluation of oral health in other non-NHS settings and other dental practices.

For further information, please contact:

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nqx.gince@university.dundee.ac.uk
NHS Highland Dental Services

Did you know?...

Your dentist is involved in a PhD student project looking at dentist-patient communication. If you are over 18 years old you may be asked to take part in the study.

What is involved? Should you agree to take part in the study:

- You’ll be asked to do a questionnaire before and during your dental appointment.
- Your heart rate will be recorded before and after your dental appointment using a light sensor that fits over your finger.
- Your appointment with the dentist will be videoed. (This information will be kept strictly confidential, with all patient identity being removed).
- The researcher will telephone you 3 months later for your opinions.

What happens to the information once it has been collected?
The information will be analysed by the researcher at the University of Dundee.

What happens if I don’t want to take part? Nothing. If you don’t want to take part in the study your dental appointment will go on as normal.

Who should I contact if I would like further information? When the study starts, the researcher will be on site to answer any of your questions. If you would like further information about the study please contact:

Jenny Hally
University of Dundee
The Dental Health Services Research Unit
The Mackenzie Building
Kirsty Semple Way
Dundee DD2 4BF
Telephone: 01382 420050

Clinical Research
PhD Project

Study dentists training year treatment intensity ratio
Background

Understanding behaviour and behaviour change is fundamental to effecting improvements in the provision of dental services. One important issue is how to design dental professionals' contracts so that patient care and service delivery are optimised. For example, do financial incentives affect clinician behaviour and service delivery? Another area of interest is dentist-patient interaction where effective communication is an important element and has been shown to influence patient compliance and satisfaction relating to the care they receive. As dental treatment becomes steadily more complex and patient needs more diverse, the need to understand how to build strong patient-dentist alliances and minimise the future risk of litigation is essential.

Within DHSRU, two projects relate to these issues: the Economic and Social Research Council (ESRC) funded Public Services: Creating a Clinical, Economic & Psychological Research Resource and the CSO funded Effective Communication in Primary Care Dentistry.

Theory recognises that concerns other than profit-maximisation may be important determinants of clinician behaviour; but clinician characteristics which may offset financial incentives are typically unobservable. In the Creating a Clinical, Economic & Psychological Research Resource study, direct measures of UK dentists' characteristics (psychological attributes) were generated and record linked to the dentists' routinely collected treatment data. This enabled testing of theoretical predictions and quantification of the impact of different dental contracts on the numbers of patients treated and the treatment mix provided. One important finding was that delivery of care was associated with dentists' beliefs, including their confidence (in clinical skills, non-clinical skills, and in their continued professional development) and their attitudes (toward their work, their continued professional development and their professional profile).

Understanding Effective Communication in Primary Care Dentistry is a CSO funded project that represents collaborative working between the University of Dundee, the University of St Andrews and NHS Highland. The project, based in NHS Highland salaried dental service, aims to explore and understand the various elements of verbal and non-verbal communication used in the patient-dentist interaction within the dental surgery setting. The project uses video to capture each patient-dentist interaction and RIAS (the Roter Interaction Analysis System), to code individual utterances and non-verbal behaviour. This study is being undertaken as part of a Clinical Research Fellowship in the field of Special Care Dentistry.

Funding was secured in December 2007 for three years and the project is currently being submitted for ethical approval. Ms Jenny Hally, the Clinical Research Fellow, has completed a training course at the University of Nottingham to use Observer XT software which allows collection, management, analysis and presentation of observational data facilitating the study of verbal and non-verbal elements present in the patient-dentist interaction.

Public Services: Creating a Clinical, Economic & Psychological Research Resource graphs
Patient recruitment poster for the Understanding Effective Communication in Primary Care Dentistry project

Overall, the Creating a Clinical, Economic & Psychological Research Resource study illustrated that it is feasible to develop a national database across the UK collating service and provider-level information. Results suggest that using joint clinical, economic and psychological perspectives to further an understanding of the impact of policy changes is a valid approach.
A current focus of DHSRU work, in partnership with the Scottish Dental Practice Based Research Network (SDPBRN) and NHS Education for Scotland (NES), is evaluation and impact analysis of the training of vocational dental trainees and other educational initiatives.

The aim of the UK National Cohort Study, conducted in collaboration with the dental deaneries in Scotland, Northern Ireland and the North and North West of England is to further an understanding of the impact of different content and assessment formats on vocational dental practitioners (VDPs). Questionnaires assessing stakeholder identified outcomes have been completed twice yearly by VDPs in Scotland, Northern Ireland, Wales, and the Northern and North Western Deaneries in England over the last five years. The main results of data appear in yearly reports to participating deaneries as well as a paper published by the British Dental Journal (Bonetti et al, in press). The results suggest that UK dental vocational training is preparing its participants in accordance with stakeholder-identified aims and outcomes. The results also suggest that there may be benefits to introducing the mandatory assessment system currently only operating in Scotland, throughout the UK.

- Evaluation and impact assessment of undergraduate and other dental professional vocational training courses, including hygiene-therapist training and dental technician training, follow a similar methodology and are now an established aspect of the training year.
- The evaluation results feed into and inform curriculum development and provide a quality management tool for education providers.
- Other educational initiatives evaluated include the implementation of Practice Development Plans (PDP) in general dental practice. The overall aim of the evaluation was to investigate whether the PDP framework supported practices to identify practice learning needs as well as the required training/education to meet these needs. Data was collected by means of postal questionnaire, online questionnaire, semi-structured interview and focus group. The results suggest that the PDP framework supported the dental team in identifying practice learning needs and access training. Practice teams identified several benefits to PDP including an increase in team working and team motivation. There was support for further development of PDP with a view to its wider implementation in general practice across Scotland.

These graphics show a poster describing the VDP evaluation and impact assessment presented at the NES Dental Conference on 7 May 2008 and the front cover of the questionnaire used for the evaluation and impact assessment of vocational dental hygiene therapist training in Scotland.

Other applications of this data are currently being investigated, including whether it can be used to inform training development by identifying training areas which may particularly drive evidence-based practice and identify which behaviours are more likely to be evidence-based.
An Evaluation of Dental Hygiene-Therapist Vocational Training in Scotland

VDHT Questionnaire

BACKGROUND

Dental Vocational Training (DVT) is a key component of dental care in Scotland, aimed at improving the workforce to meet the needs of the population. The Scottish Government, through the Scottish Dental Entrepreneurial Unit (SDEU), has implemented strategies to enhance the effectiveness of DVT. This study aimed to evaluate the outcomes of the DVT programme.

WHAT WE DID

The study employed a mixed-method approach, including surveys and interviews. The questionnaire was designed to assess the perceptions of participants regarding the training programme. The results were analyzed to identify areas for improvement.

WHAT THE OUTCOMES MEAN

The outcomes of the study indicate that the DVT programme is achieving its objectives. Participants reported positive experiences and expressed satisfaction with the training. The programme has contributed to the development of a skilled workforce, which is crucial for delivering high-quality dental care.

TAKING HOME MESSAGES

The findings of this study highlight the importance of continuous professional development for dental professionals. The programme should continue to be reviewed and updated to ensure that it remains relevant and effective.

Does it Matter Where You Do Your Dental Vocational Training

Linda Young, Debbie Good; Jon Salmon, John Clarkson

Three DVT courses (03/04, 04/05, 05/06) with significant differences in scores were identified in the study.

Figure 1: At the end of DVT, VDPs in Scotland were significantly more confident in their clinical skills.

Figure 2: In Scotland, VDPs thought to be more beneficial for their future in dentistry.

Figure 3: Scotlands VDPs were significantly more satisfied with their role and work placement (P=0.01) and less stressful (P=0.07) than their colleagues in England.

Figure 4: VDPs in Scotland felt less confident and less secure at the end of DVT and it was significantly better.
The development of dental informatics & e-health enhances health & oral health promotion, including inequalities in caries risk assessment & preventive caries management. This supports & evaluates continuous quality improvement.

NHS UK links with knowledge services, alongside international links with knowledge services, are crucial. Understanding behaviour & behaviour change is essential for effective care.

- Phase 1 published March 2007
- Phase 2 focuses on sterilization

Cleaning of dental instruments draft
Sedation guidance consultation draft
Emergency care consultation draft
Emergency dental care
Conscious sedation in dentistry
Decontamination into practice introduction
Dental prescribing consultation draft
EDC practice guide 6pp
EDC practice guide
Emergency dental care

*Phase 1 published March 2007
Phase 2 focuses on sterilization*
The Scottish Dental Clinical Effectiveness Programme (SDCEP) is an initiative of the National Dental Advisory Committee in partnership with NHS Education for Scotland (NES). Its primary aim is to provide user-friendly evidence-based guidance to support dental teams’ clinical and organisational decision-making and assist dental teams in providing the best possible dental care for their patients. In setting up the guidance initiative, the National Dental Advisory Committee (NDAC) identified seven priority areas: sedation; decontamination; emergency dental care; drug prescribing; practice support manual; child caries; and oral health assessment. Groups of dental professionals have been established to review the current evidence relating to best practice and to produce guidance in each of these areas.

The guidance initiative involves participation from all sectors of dentistry in Scotland, with several members of DHSRU continuing to play key roles. Dr Jan Clarkson is Director of SDCEP. Professor Nigel Pitts is the chair of the Oral Health Assessment Guidance Development Group, sits on the SDCEP Steering Committee and is a member of the National Dental Advisory Committee. Ms Jenny Hally is a member of the Oral Health Assessment Group and Dr Gail Topping is a member of the Emergency Dental Care Group. Dr Debbie Bonetti has been advising on guidance implementation issues. Mrs Linda Young is a SDCEP Research and Development Manager.

• Three guidance documents have now been published and disseminated throughout primary dental care in Scotland. The first, ‘Conscious Sedation in Dentistry’ was published on 22 May, 2006 at the official launch of the Programme in Glasgow.
• The second, ‘Decontamination into Practice – Cleaning of Dental Instruments’ was published in March 2007. During the first month of publication this guidance document was downloaded more than 25,000 times from the Scottish Dental Portal. ‘Decontamination into Practice’ is a series of documents that provides advice on different aspects of instrument decontamination. The second part of this series, Sterilization, is currently in development and will be published in 2009.
• The third guidance document, ‘Emergency Dental Care’ was published in November 2007.
• The consultation phase for guidance relating to drug prescribing for dentistry was completed in August 2007. The peer review was completed in February 2008 and this guidance document will be published in April 2008.
• Several other guidance projects will undergo consultation in 2008 including Oral Health Assessment; Management of Dental Caries in Children; and Practice Support Manual. Further information about SDCEP is provided at www.scottishdental.org/cep from where all publications can be downloaded.
• Supported by funding from the Scottish Government, an international group of clinical and non-clinical experts has been brought together to develop an integrated portfolio of research to evaluate dissemination and implementation of SDCEP guidance.

This work, in collaboration with partners across Scotland, the rest of the UK and internationally is forging the necessary links to enable DHSRU to deliver its remit, enhancing the translation of evidence into practice in Scotland.
Background

The Scottish Dental web portal www.scottishdental.org was an initiative funded by the Scottish Executive to address the need for a premier disseminator of dentally related electronic information. The portal was developed by DHSRU to provide a single point of access to dental knowledge, previously dispersed throughout numerous websites.

The project was led by Professor Nigel Pitts and Dr Jan Clarkson in collaboration with the Scottish Dental Practice Based Research Network; Scottish Executive, Mr Derek Richards (Forth Valley NHS Board and Centre for Evidence Based Dentistry), National Dental Advisory Committee Clinical Effectiveness Programme, University of Dundee and key DHSRU members.

Progress over the period of this report

Since its launch in August 2005, it has provided dental teams and the general public with a seamless point of access to a number of online functions aimed to support and develop the modern dental team. The site is organised to specifically tailor information to the various dental team members: dentists; therapists, hygienists and nurses; dental technicians; practice managers and the general public; so encouraging a team based approach to information dissemination.

In the last year the user access has doubled with 67,500 hits in January 2008 alone, well on its way to the original aim ‘to achieve use by 60% of the dental profession in Scotland within five years’.

Content on the facing page

Scottish Dental web portal

Highlight of current unit work

Links to other key resources, in particular the latest downloadable guidance and practice manuals and clear links to the Scottish Dental Clinical Effectiveness Programme, the Scottish dental practice based network, Child-smile project website and the DHSRU homepage have improved portal use.
The development of dental informatics & e-health includes caries risk assessment & preventive caries management. Supporting & enabling evidence-based improvements, evaluation of education & training, monitoring & evaluating continuous quality improvement. NHS UK links with knowledge services, international links with knowledge services, understanding behaviour & behaviour change.

Scottish Dental
"accessible information about dentistry"

For the Public
Information about dentistry in Scotland for the public - frequently asked questions, facts, figures, fees and emergency care etc.

For the Profession
This site aims to provide links to accessible information to support and develop the modern dental team:-
- dentists
- therapists, hygienists, dental nurses
- dental technicians
- practice managers
- more resources
- Careers in Dentistry [NHS Careers website]

News & Events
- New guidance NICE guidance on Prophylaxis against infective endocarditis (March 2008)
- New guidance Emergency Dental Care (November 2007)
- New Practice manual The Hall Technique - A child-centred approach to managing the carious primary molar
- New Statement of Dental Remuneration
- New Healthcare (Clinical) Waste Awareness, Disposal of Dental Services Waste

On the horizon
Research programmes and knowledge based projects on the horizon

Please send your Feedback about this site
Maintained by: Scottish Dental


Dental recall

Recall interval between routine dental examinations

NIHR Health Technology Assessment Programme (HTA) Application 06/35/05: INTERVAL Dental Recalls Trial (Investigation of NICE Technologies for Enabling Risk-Variable-Adjusted-Length Dental Recalls Trial) – A Feasibility Study and Follow-On
DHSRU has been involved in spearheading the development of Evidence Based Dentistry at the UK level and working collaboratively with key partners in this small and still emerging area.

Highlights include cooperation between the virtual Centre for Improving Oral Health, the Cochrane Oral Health Group and the International Association for Dental Research to prioritise systematic reviews into areas where there are important gaps in the current evidence base. These efforts should ensure that the more important topics can be dealt with in a more timely manner, given the limited capacity to undertake such reviews.

Review of the NICE guidance for dental recall. DHSRU was invited to participate in an assessment of recent additions to dental evidence as part of a review to assess whether or not there was yet a need for a major review of this guidance. A decision has been made not to review for a further 2 years.

Review of the Faculty of General Dental Practice (UK) guidance for Clinical Examination and Record Keeping. Professor Pitts and Dr Clarkson have been involved in this review (as well as the original guidance) and in this case are contributing to the updating process for this document.

After a lengthy commissioning process and competition, a UK-wide team led by Professor Pitts and Dr Clarkson have been commissioned by the HTA to mount a major feasibility study and then a likely 5-year trial to assess the outcomes associated with using NICE recall interval guidance. The three arms of the study will assess the newer type of risk-based personalised recall against a 24-month recall and the more traditional model of a 6-month dental recall.

The graphic depicts the cover of the NICE Guidance on dental recall (which the Unit played a major part in developing) and the details of the successful bid to the HTA for a UK-wide clinical trial to assess the health impact of the risk-based personalised recall that NICE advocates against other models of practice.

DHSRU continues to make a major contribution to shaping Knowledge Services at the UK level by contributing methodological expertise and content expertise to guideline development as well as leading the research agenda to explore the health impact of using dental guidelines in practice.
Since 2002, the ICDAS collaboration between DHSRU and the Universities of Copenhagen, Michigan and Indiana has been synthesising the best evidence available on caries detection and assessment in order to disseminate it widely in the form of the International Caries Detection and Assessment System. The aim is to provide better quality information to inform decisions about appropriate diagnosis, prognosis and clinical management at both the individual and public health levels. The ICDAS collaboration is a widening community of science-focused (evidence-based) and experiential groups linked through: Coordination, Collaboration and Communication, using the resources available and funding as needed to carry out a research agenda with continuing dissemination and implementation activities linked to a shared vision.

- 2006 - the ICDAS Foundation was established - now a Registered Charity in Scotland in order that it can receive Educational Grants to facilitate its work of securing “Better quality information to inform decisions about appropriate diagnosis, prognosis and clinical management of caries at both the individual and public health levels”. An Educational Grant from Colgate-Palmolive has allowed production of an innovative e-learning package (see www.icdas.org). It is hoped that further Educational Grants can be obtained from the dental industry to help training and the wider use of ICDAS in clinical practice. The multitude of publications in which ICDAS has been used are now collated and listed on the Foundation’s website.

- 2007 - World Dental Federation (FDI) Dubai Science Forum – a successful Science Forum was set up by Martin Tyas which included presentations on the ICDAS System for staging dental caries and assessing activity (by Pitts and Ekstrand) as well as on the Mount-Hume system for classifying lesions requiring operative intervention (by Graham Mount). There was keen interest in the FDI taking a role in extending and updating its 2000 statement on Minimal Intervention Dentistry by adopting a system which could incorporate ICDAS and Mount-Hume.

- Amsterdam ICDAS Strategic Review February 2008 – the ICDAS Foundation reviewed progress and elected to re-double its efforts to promote the international use of this approach and specifically to “provide a framework to support and enable personalised Total Caries Clinical Management for improved long term health outcomes”.

Overview of the elements of patient-centred total caries clinical management which can be enabled by ICDAS working in collaboration with other international groups

The international links through ICDAS are varied and include: FDI – working towards Minimally Interventive Dentistry compatible with a modernised (“non-Black’s”) operative classification of restorative cavities; American Dental Association (ADA) to work on systems linked to the evidence supported by appropriate diagnostic and payment codes with a range of stakeholders. US Dental Education groups such as CAMBARA Cariology Coalition in the US Dental Schools and American Dental Education Association (ADEA); European Organization for Caries Research (ORCA); Academy of Operative Dentistry (AOD); International Association for Dental Research (IADR) – Cariology Group and EBD Network; European Association for Dental Public Health (EADPH) Caries Special Interest Group and the European Global Oral Health Indicators Development (EGOHID) Programme all use ICDAS.
ICDAS enabled
Patient-centred Total Caries Management

tooth/surface

- clinical visual lesion detection
- lesion detection aids
- lesion activity assessment

- lesion diagnosis
- lesion prognosis

synthesis

patient

- patient: caries risk assessment
- patient: dentition / lesion history
- patient: behavioural assessment

- prognosis for patient
- assessment of patient

synthesis

Integrated, Personalised Treatment Planning

RRM
Recall, Reassessment & Monitoring

NCT
No Current Treatment

PTO
Preventive Treatment Options

OTO
Operative Treatment Options

Personalised Caries Management

International Caries Detection & Assessment System
Since the last report the Dental Caries Control (DCC) Programme has continued to work towards answering key questions related to caries prevention, its diagnosis and risk assessment and ultimately its appropriate clinical management. The three key questions which this programme of research focuses upon are:

(a) What leads to improvements in deliverable caries prevention?
(b) What leads to improvements in caries diagnosis and risk assessment, which can be used meaningfully at the population, clinical research or clinical practice levels?
(c) What leads to improvements in the appropriate clinical management of dental caries?

For over twenty years DHSRU has collaborated with the Scottish NHS Boards in running a national epidemiological programme to monitor the dental health of children in Scotland. The National Dental Inspection Programme (NDIP) surveys conduct ‘Basic’ dental inspections of all Primary 1 (aged 5) and Primary 7 (aged 11) children annually as well as a ‘Detailed’ dental examination of a smaller, representative sub-sample of each age-group on alternate years. The main thrust of the NDIP work at DHSRU relates to these detailed caries inspections. We assist NHS Boards in ensuring that a random and representative sample of children is selected to allow for valid reports to be generated and, in collaboration with NHS Tayside, run two training and calibration exercises for more than forty dental teams from across Scotland.

DHSRU ensures that the data derived from the detailed inspections can be used reliably to inform on the dental health of children in Primary 1 and 7 across Scotland. In this way DHSRU plays an important role in monitoring caries prevalence annually and reporting on national trends.

The NDIP surveys continue to play a pivotal role in evaluating the effectiveness of oral health improvement projects conducted as part of the Childsmile initiatives.
In this past year we have helped drive up the quality of information from NDIP basic dental examinations by assisting the development of a national training pack. An NDIP evaluation project began in 2007 and is being jointly developed by DHSRU in collaboration with Mr Martyn Merrett of NHS Tayside and is led by Mr Chris Cunningham of NHS Lothian.

The positioning of DHSRU with other expert groupings in the Health Informatics Centre has been beneficial in terms of local collaborations to provide high quality input to Childsmile over the past year. Aside from the contribution to Childsmile through NDIP, DHSRU has led a project commissioned by Childsmile Nursery (formerly Childsmile East). The Childsmile@HIC data management project was launched last year: This project links health informatics research with public health and population research and has attracted an MRC PhD studentship awarded jointly to Professor Pitts (DHSRU) and Professor Sullivan (Tayside Centre for General Practice), both working with Professor Iain Ricketts (Department of Applied Computing). This project is building and rigorously evaluating a method of data collection and storage to support the Childsmile demonstration project and to date has been very well received by our NHS partners and resulted in further requests for collaborative working.

Staff within the DCC programme have also contributed to the Childsmile core programme of nursery toothbrushing and to Childsmile practice as well as to the Childsmile evaluation board.

There has been continued work on Oral Health Assessment by Professor Pitts and Ms Hally. The development of a detailed oral health assessment has involved the devising of comprehensive clinical forms and guidance to support their completion in clinical practice. These forms were evaluated within the primary care setting and this work is now being taken forward in the form of guidance from the Scottish Dental Clinical Effectiveness Programme.

Our PhD students Carole Anderson and George Bouliotis both submitted their theses in the past year. Dr Anderson has since graduated and Mr Bouliotis is making his final amendments from a new post at the University of Nottingham. Dr Topping is now co-supervising Miss Jenni Collins with Professor Freeman and this PhD falls within the Oral Health and Health Research Programme. Dr Topping supports the University of Dundee Master of Public Health taught course by offering supervision to students completing dissertations on dental topics and lectures dental undergraduates and hygiene students within the dental caries course at Dundee Dental School.

Internationally, Professor Pitts, Dr Longbottom, Dr Topping and Professor Ricketts of the DCC Programme have leading roles in the progress of the International Caries Detection and Assessment System (ICDAS).

- The ICDAS Foundation has been established as a not-for-profit company to assist in taking forward the concepts of the ICDAS group and continues to seek sponsorship for future ICDAS projects and facilitate progress.
- The ICDAS Foundation received its first award of an educational grant for £35,000 from Colgate to develop an e-learning software package to teach users about the ICDAS caries criteria. The project, led by Dr Topping in conjunction with a dental educational software development group, produced a ninety minute electronic, interactive teaching package launched in March 2008. This software will be retailed to provide revenue for the ICDAS Foundation.
- In July 2006 Dundee hosted the annual ICDAS meeting and workshop. Over forty worldwide experts from the fields of clinical practice, caries clinical trials and epidemiology attended including industry colleagues. Sponsorship was given by five corporate groups in the dental industry.
Prior to the European Organisation for Caries Research (ORCA) meeting in Helsignor, Denmark in July 2007 the group offered an introductory training course in the use of ICDAS which was fully subscribed with thirty-two cariologists.

The core ICDAS committee also met in February 2008 to plan for the annual meeting to be held in Groningen in June 2008. Sponsorship from Johnson and Johnson has been secured to support this meeting.

A new database of ICDAS coded dental chartings and dental radiographs which will provide a rich source of research material on enamel and dentinal caries is being developed from the Icelandic epidemiological survey.

Professor Eino Honkala’s research group from Turku in Finland are running a study on the incidence and prevalence of caries in groups of children exposed to a variety of sugar substitutes and will use ICDAS to do this.

A great deal of work has taken place within the DCC programme of research as part of phase two of the European Global Oral Health Indicators Development (EGOHID) Project. DHSRU’s main role has been in leading Work Package 7 – Clinical Indicators. A full clinical survey form and supporting guidance for the collection of fifteen clinical indicators across the entire EU has been developed and an e-learning package produced to assist in training and standardising dental personnel to collect reliable epidemiological information within primary dental care. The latest element in this project has been a pilot test of the clinical form and guidance (both paper based and electronic) across eight different countries in the EU. Volunteer GDPS from East Lancashire Primary Care Trust were enlisted to participate in this aspect of the project and trained by Dr Topping. The next stage will be to evaluate the feedback and consider the future steps of this project. DHSRU will contribute to a final report by EGOHID in 2008. DHSRU also contributed to the editing and production of Work package 5 - Oral Health Interviews and Clinical Surveys: Overviews which was published in March 2008.

Opportunities for funding dental caries research are scarce and unfortunately the NIH proposal developed in collaboration with the University of Michigan which was included in our last DHSRU report was unsuccessful. However, the NHS R&D National Coordinating Centre for Health and Technology Assessment (NCCHTA) called for proposals to investigate the appropriateness of filling children’s deciduous teeth in 2007 and DHSRU drew together a large collaboration of UK researchers and NHS colleagues to take this forward. After a successful outline bid the team, led by Dr Gail Topping and Dr Nicola Innes of Dundee Dental School, submitted a full proposal for just under 3.5 million pounds for which the funding decision will be known in August 2008.

Although not directly connected to this Programme, in the second half of 2007, Dr Topping led an invited DHSRU Needs Assessment for a range of dental specialties across the North of Scotland. This work was commissioned by the North of Scotland Planning Group.
Effective Dental Practice Programme

**Staffing**

<table>
<thead>
<tr>
<th>Name</th>
<th>Role and Funding Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr J Clarkson</td>
<td>Programme Director (NES funded/University of Dundee - 82 fte)</td>
</tr>
<tr>
<td>Professor NB Pitts</td>
<td>Unit Director (core funded, University of Dundee, 56% across all DHSRU work)</td>
</tr>
<tr>
<td>Dr D Bonetti</td>
<td>Senior Researcher (core funded)</td>
</tr>
<tr>
<td>Mr S Turner</td>
<td>Senior Researcher (NES, DHSRU, Edinburgh Dental Institute and Glasgow Dental School funded)</td>
</tr>
<tr>
<td>Dr A Baker</td>
<td>Research Assistant (NES funded)</td>
</tr>
<tr>
<td>Mrs H Cassie</td>
<td>Research Fellow (NES funded)</td>
</tr>
<tr>
<td>Mrs L Young</td>
<td>Honorary Member (SDCEP Research and Development Manager; NES funded)</td>
</tr>
<tr>
<td>Dr C Tilley</td>
<td>Honorary Lecturer (NES Educational Projects Manager; NES funded)</td>
</tr>
<tr>
<td><strong>PhD Students</strong></td>
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</tr>
<tr>
<td>Mr A Haigh</td>
<td>Part-time PhD student (NES funded)</td>
</tr>
<tr>
<td>Mrs F Stewart</td>
<td>Part-time PhD student (University of Dundee Dental School)</td>
</tr>
<tr>
<td>Mr M Fernandes</td>
<td>Completing PhD (The Wellcome Trust)</td>
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<tr>
<td><strong>MSc Students</strong></td>
<td></td>
</tr>
<tr>
<td>Mr Simon Shepherd</td>
<td>Remote and Rural Fellow (NHS Highlands, University of Dundee Dental School)</td>
</tr>
</tbody>
</table>

**Programme update**

Since the last DHSRU report the Effective Dental Practice (EDP) Programme has continued to influence and respond to major strategic developments in primary dental care services, and dental undergraduate and postgraduate education. Research priorities are to identify gaps between current practice and evidence-based, best practice and to design, implement and evaluate strategies to increase the translation of research evidence in dental practice. The EDP research programme includes high quality trials in primary care, impact analysis of dental undergraduate and postgraduate training, methodological research to inform future dental research and dental team training, and the conduct of systematic reviews relevant to the healthcare service. The three key questions upon which this programme of research focuses are:

(a) What promotes the appropriate use of research evidence in dental practice?
(b) How can systematic reviews inform evidence-based practice?
(c) How can methodological research inform future dental research?

During the past year grant applications have been submitted to the Chief Scientist Office in Scotland (CSO), the Medical Research Council (MRC), the Health Technology Assessment Programme (HTA), the Scottish Government (via the office of the Chief Dental Officer) and NHS Education for Scotland’s (NES) Educational Research Committee (ERDOG) for national randomised controlled trials in dental primary care. Successful applications have secured funding to support a feasibility study evaluating the impact of different dental recall intervals (HTA), a trial evaluating educational strategies for the implementation of the Scottish Dental Clinical Effectiveness Programme’s (CEP) decontamination guidance (Scottish Government, £300k), and a trial evaluating the impact of e-learning continued professional development (CPD) in general dental practice (ERDOG, £25k).
The success of the EDP programme in securing funding will enable the appointment of four new members of staff: two research fellows and two administrators. The programme also welcomes Mr Simon Shepherd, an MSc Remote and Rural Fellow.

The EDP programme continues to work in close and productive collaboration with NES, the Department of Economic Studies at the University of Dundee, and the CSO’s Health Services Research Unit, Health Economics Research Unit and Centre for Healthcare Randomised Trials at the University of Aberdeen. An example of this collaborative working is the EDP programme’s joint leadership with NES of the NES funded Scottish Dental Practice Based Research Network (PBRN). The core activities of this network are to promote the conduct of high quality research, to disseminate research evidence and to conduct an impact analysis of postgraduate education in primary and secondary dental care. The Scottish Dental PBRN’s 6th National Symposium was attended by over eighty delegates from all sectors of the profession and from all over the UK. Participating in the symposium were representatives of the primary care dental team, dental education, and dental research and policy, including Scotland’s Chief Dental Officer. Sessions relating to current research activity in Scotland included presentations on patient-centred services, as well as special needs and special care. Reported at the symposium were projects to which the EDP programme had contributed including an update on the results of the ERUPT study; the results of a study investigating the impact of the new dental contract in England and Wales, funded by the Economic and Social Research Council (ESRC); and the results from Scottish Dental PBRN student-supported research evaluating dentist attitudes to giving alcohol advice, and patient attitudes to hygiene-therapists. The EDP programme via the network is currently consolidating its collaborative links with the Scottish Primary Care Research Network and, through its collaboration with the National Institute of Health funded United States Dental Practice Based Research Network, is also furthering its ability to promote and inform primary care research beyond Scotland.

A number of projects have been successfully completed including the ESRC funded project investigating the impact of contract change in England and Wales and the NES commissioned project evaluating the impact of Practice Development Plans (PDP) in general dental practice. Although the projects are complete with final reports submitted and accepted, the EDP programme involvement continues. Annual presentations are made at the ESRC Public Services Conference, an invited paper has been prepared for inclusion in the Public Services special edition of the Journal of Public Administration Research and Theory, and programme members are advising on the future Scotland-wide implementation and evaluation of PDP. The EDP programme is also evaluating the impact of completed research on current dental practice. For example, the ERUPT study demonstrated that a fee for a preventive fissure sealant would increase the number of children receiving such care by 10%. The results of this trial informed and influenced the Scottish Government policy decision to introduce a fee for item of service for this treatment. Using routinely collected data the current fissure sealant placement behaviour of ERUPT study dentists is being evaluated and a grant application to enable a comparative evaluation is being prepared.

Current activity includes the development and implementation of several randomised control trials in dental primary care at the national level. These trials all have implications for future practice provision and policy. For example, one trial, funded by ERDOG, is investigating different methods of delivering CPD, including e-learning – a previously neglected methodology in primary dental care.
The aim is to examine whether providing access to e-learning CPD courses increases the number of CPD hours beyond the minimum requirements; encourages sharing knowledge with the dental team; meets learning needs and increases the implementation of course information, compared to standard methods of CPD delivery. This study is increasing awareness of the role of e-learning in providing CPD to the whole dental team and the results will inform the methodology of future CPD provision in Scotland. Another trial, funded by the Scottish Government, relates to the implementation of SDCEP decontamination guidance. In excess of 180 million instruments are re-processed in Scottish general dental practice every year. Inadequately decontaminated instruments increase the risk of transmission of bacterial, viral and fungal infections to both users and patients, including Methicillin Resistant Staphylococcus aureus, HIV, hepatitis B, hepatitis C and variant Creutzfeldt-Jakob Disease. Prompting the trial are the results of a national survey providing evidence of substantial shortcomings in the decontamination procedure, processes, equipment and training of dentists and their staff in Scotland. The trial is comparing the influence on decontamination best practice of postgraduate education alone, or with a theory-based, tailored practice support visit follow-up. The results of this trial will help improve decontamination practice in Scotland and will help inform dental decision-makers on how best to use resources to promote the translation of guidance and other evidence-based messages into practice.

The EDP programme is taking a leading role in improving the quality of research operationalisation through impacting on undergraduate and postgraduate dental education. In collaboration with NES, the EDP programme continues to conduct longitudinal research evaluating undergraduate and postgraduate dental education and training including the cohort evaluations of dental vocational training (DVT) across Scotland, North and North West of England, Wales and Northern Ireland, undergraduate training in Dundee and Glasgow dental schools, dental vocational hygiene-therapist training in Scotland and vocational dental technician training in Scotland. Annual reports inform curriculum development and provide a quality management tool for education providers. Summaries of the reports are published on the Scottish Dental web portal and a paper discussing the results of the first three years of the DVT cohort study has been accepted for publication by the British Dental Journal. Other work within this area of research has informed the development of an SVQ qualification for practice receptionists and managers, and the development of an SVQ qualification for dental nurses. As part of the dental nurse project the programme will provide support for a dental nurse to undertake a higher degree.

At the international level, the EDP programme sought and received funding from the Scottish Government to bring together national and international clinical and academic experts to develop a framework to systematically inform decision-makers on the effectiveness and cost-effectiveness of different strategies to influence behaviour change for health promotion and to translate research into dental settings (TRiaDS). The programme has recruited a collaborative, multidisciplinary team (primary and secondary care, and academic clinicians, psychologists, economists, statisticians, organisational theorists and trialists), to develop an integrated portfolio of rigorous multidisciplinary translation research centered around the SDCEP series of clinical guidance. The first meeting of the team took place in February 2008 and development of an operational framework is in progress.

Dr Jan Clarkson, the EDP Programme Director, is accountable to the Dental Postgraduate Dean of NHS Education for Scotland and the Chair of the National Dental Advisory Committee in her role as the Director of the SDCEP. In 2007 the SDCEP published two national guidance documents: Decontamination Into Practice – Cleaning of Dental Instruments and Emergency Dental Care. Dental prescribing guidance has completed the peer review process and will be published in spring 2008.
The EDP programme continues to collaborate with the Cochrane Oral Health Group to help develop and publish systematic reviews to enhance knowledge relating to previous research and current gaps in evidence relating to a number of dental treatment protocols, including the treatment of oral cancer. The updates and oral cancer review, supported by funding from NIDCR, are near completion and these reviews are among the top fifty most frequently accessed of all Cochrane reviews (3385) across the world. The UK Childhood Cancer Support Group have now published a guideline for the management of children with cancer based on the Cochrane Reviews in this area. The translation of Systematic Review evidence to guidance and the design of trials continue to be a priority for the Programme.
Oral Health and Health Research Programme

**Staffing**

- **Professor Ruth Freeman, Programme Director** (0.5 fte UoD / 0.5 fte NHS Highland)
- **Senior Research Fellow (To be appointed)** (funded by the Dental Action Plan: Scottish Government)
- **Senior Research Fellow (To be appointed)** (funded by the Action Plan: Scottish Government)
- **Research Fellow (To be appointed)** (funded by ChildSmile Practice: Scottish Government)
- **Ms Jenny Hally, Clinical Research Fellow** (funded by CSO)

**PhD students**

- Ms Jenni Collins  
  Self-funded, started Oct 2007
- Ms Jenny Hally  
  Self-funded, started Feb 2007

**MPhil student**

- Ms Kate Coyle

**Programme update**

The Oral Health and Health Research Programme (OHHR), under the directorship of Professor Ruth Freeman, is DHSRU’s third and new programme of research. The programme is focused on the three main areas: behavioural sciences, health promotion and health disparities. Developing from previous work on health inequalities and social gradients of health, the OHHR programme focuses on groups within society who may be described as social excluded. This aspect of the OHHR programme tackles issues of health disparities, inequality and exclusion through partnership working with NHS Boards, national and international collaborators.

The OHHR programme is grounded in the theoretical discipline of psychodynamic psychology which provides a firm footing to understand the difficulties encountered in behaviour change, the complexities of dental anxiety, the role of communication in the treatment alliance and the role of early childhood material and emotional deprivation upon adult health disparities and social exclusion. The dynamic quality of this programme of research allows the position of determinants of oral health and health to be examined. It is the exploration of these determinants that allows an understanding of how community capacity can assist in providing a solution to promote health in the most deprived and socially excluded. Thus the OHHR programme adopts the twin approaches of qualitative and quantitative methodologies in order to gain an understanding of the main concerns of individuals within their communities prior to the development, implementation and evaluation of community development programmes to promote and maintain health. The programme is underpinned by the concept of a common risk factor approach to promoting oral health and health and so examines links between common determinants of health. Working in this way allows for collaborations outside of the oral health arena with social scientists both within Scotland and Europe (see OHHR research themes).

This year has been successful for OHHR. New areas of research include developing, implementing and evaluating oral health promotion interventions for homeless and prison populations across Scotland (funded by the Scottish Government); developing, implementing and evaluating training and assessment qualifications for dental nurses (support by NES Scotland), developing an inventory to assess parental concerns and enable child dental registration (funded by ChildSmile Practice, Scottish Government) and understanding the role of communication as an anxiolytic in the formal assessment of dental anxiety in primary care (CSO funded Clinical Fellowship). Professor Freeman has also been invited to be part of a new research group within the Social Dimensions of Health Institute to investigate health inequality and social exclusion.

Ms Jenny Hally has been awarded a three year CSO Scottish Clinical Training Fellowship to investigate effective communication in dental primary care for the dentally anxious patient. This work will form the basis of a PhD and is being supervised jointly by Professor Ruth Freeman, and Professor Gerry Humphris of St Andrews University. Other ventures within Scotland involve a study aimed at understanding child and parent dental anxiety with the School of Nursing, University of Dundee, and the Scottish Institute of Human Relations and work on developing, implementing and evaluating training and assessment qualifications for dental nurses across Scotland with NHS Education for Scotland (NES) and the Scottish Dental Practice Based Research Network (SDPBPN). International collaborations in the behavioural sciences field include work on alexithymia and dental anxiety with Satu Lahti, University of Oulu; the development of evidence-based communication guidelines for the European Association of Paediatric Dentistry with Gunilla Klingberg, University of Gothenburg and Jaap Veerkamp, University of Amsterdam; and an audit of work-related stress with Ronald Gorter of the University of Amsterdam.

One major piece of work in Oral Health and Health Promotion was completed in August 2007. The Chinese Immigrant Mothers Health Education (ChIME) Programme is an oral health education programme which adopts a common risk factor approach. ChIME was targeted at recent Chinese immigrant mothers with newly born infants. The ChIME programme used a home visiting health education intervention and was based upon a community development approach. The intention was to empower Chinese immigrant mothers with appropriate skills to care for their infants using the vehicle of oral health. This was achieved by providing culturally sensitive social support on a one-to-one basis when the baby was eight weeks and six months of age. Of central importance was the finding that as a consequence of the ChIME programme, intervention group mothers had improved maternal-infant bonding. Intervention group mothers, at twelve month follow-up, felt less anxious, less rejecting and less aggressive towards their babies. Chinese immigrant mothers empowered with health (nutrition and weaning) and oral health knowledge were, as a consequence of ChIME, able physically and emotionally to care for their babies.

Childhood obesity, dental caries and dental erosion are key public health problems for the Scottish population. By adopting a common risk factor approach, the PrObED investigation aims to identify common Predictors of Obesity, dental Erosion and Dental caries. The importance of PrObED is linked to the dietary element of all three conditions and that identifying common predictors, including genetic determinants, will facilitate the prevention of obesity, dental erosion and dental caries. Professor Freeman and Dr Longbottom, in collaboration with the Dental School, University of Dundee, University of St Andrews, University of Turku and the Dental Health Department, Lappeenranta, PrObED will be able to examine both the common predictors of obesity, dental erosion and dental caries in a child population with high sugar and soft drink intake (Scotland) in comparison with countries (such as Finland) in which the consumption is low thus identifying the role of environment with respect to the expression of genetic determinants.
A new and exciting development is the Developing an inventory to Assess Parental concerns and Enable child dental Registration: The DAPER study. This funded programme of research will investigate non-compliance with ChildSmile Practice in mothers residing in the highest areas of social deprivation. A researcher will be appointed to develop, assess and conduct a field trial of a new psychometric measure of parental concern with the eventual aim of enabling ‘at-risk’ families to access preventive dental services.

Social Exclusion

A feature of the Dental Action Plan in 2000 was a call for NHS Boards to address the needs of the socially excluded and marginalised in society. The OHHR programme is tackling this through projects which are developing, assessing and evaluating oral health promotion for the homeless and prison populations in Scotland along with colleagues from NHS Forth Valley, Lothian, Ayrshire and Arran, Lanarkshire, Tayside and Greater Glasgow and Clyde. Funding has been received from the Scottish Government for the homeless intervention and the prison peer group intervention. In addition, Ms Jenni Collins will report on the needs assessment of the houseless and roofless for her PhD thesis within the OHHR programme. A joint project being taken forward with NHS Highland and the Eastern Health and Social Services Board in Northern Ireland is ALDA (Adolescents with Learning Disability: Access to dental care) led by Ms Kate Coyle. Operationalising the FDI’s accessibility factors, Ms Coyle is investigating the role of geography, dentists’ educational experiences, attitudes and knowledge with regard to the provision of general dental services for adolescents with learning disabilities. The Weighted Case Mix Tool has been used to characterise the case-mix of patients attending salaried dental practices in NHS Highland. This work, in collaboration with NHS Highland, was led by Ms Jenny Hally. It has shown that patients attending salaried clinics in NHS Highland can be characterised by their degree of management complexity and poorer oral health status.

In 2006-2007, the OHHR programme was part of the Dent Ed III European Project. With Professor June Nunn, Trinity College, Dublin a report was written, as part of the international collaboration, on inequality of access to health and education. This was published as a supplement to the European Journal of Dental Education.

The OHHR programme is a new and exciting venture for DHSRU opening up new avenues of research through national and international collaborations in the areas of health promotion, health disparities and social exclusion. The OHHR programme reflects the aims of ‘Better Health: Better Care’ and as such is in the vanguard of providing an understanding of health inequality and social exclusion in Scotland.
Entries alongside an asterisk * indicate audience details or the nature of presentation (by invitation or by application).

All presentations are verbal unless otherwise indicated.

2006
This list covers the interim period between publication of the last annual report and the start of 2007

1. Presenter: Freeman R
   Title: “Profile of a dentist in the oral health care team in countries with emerging economies”
   Meeting: Global Congress on Dental Education III
   Venue: Krakow
   Date: August 2006
   *Members of working group 2

   Title: “How do attitudes and incentives shape dental treatment”
   Meeting: Meeting with Treasury mandarins
   Venue: Treasury, London
   Date: 15 September 2006

3. Presenter: Turner S
   Title: “Effect of training dentists in Evidence Based Dentistry: an RCT”
   Meeting: Pan European Federation, International Association for Dental Research
   Venue: Trinity College, Dublin
   Date: 13-16 September 2006

4. Presenter: Turner S
   Title: “Cost effectiveness of implementation strategies in primary care: an RCT”
   Meeting: Pan European Federation, International Association for Dental Research
   Venue: Trinity College, Dublin
   Date: 13-16 September 2006

5. Presenter: Topping G
   Title: “Dental caries detection criteria for Primary 7 children in Scotland”
   Meeting: NDIP Training and Calibration Courses I and II
   Venue: Perth
   Date: 30 October and 2 November 2006

6. Presenter: Pitts NB
   Title: “Caries Prevention and Management – Where are we now?”
   Meeting: West of Scotland Branch, BDA
   Venue: Glasgow
   Date: 8 November 2006

7. Presenters: Freeman R, Humphris G
   Title: “Treatable and untreatable patients: the management of anxiety in the dental setting”
   Meeting: Finnish Dental Society, Annual Congress, 2006
   Venue: Finland
   Date: 15-18 November 2006
### 2006

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<tr>
<td>Pitts NB</td>
<td>“NICE Guidance and the Oral Health Assessment – how it relates to dental hygienists”</td>
<td>BDHA Oral Health Conference</td>
<td>Harrogate International Centre</td>
<td>17-18 November 2006</td>
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### 2007

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<tr>
<td>Clarkson JE</td>
<td>“Research! I’m a GDP, get me out of here”</td>
<td>Research in General Dental Practice</td>
<td>Royal College of Surgeons, Edinburgh</td>
<td>14 February 2007</td>
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<td>Bonetti D</td>
<td>“Predicting dentists’ behaviour”</td>
<td>CHS Seminar</td>
<td>Dundee</td>
<td>20 February 2007</td>
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<tr>
<td>Young L</td>
<td>“UK Cohort Study Evaluating Dental Vocational Training – Is my VDP normal?”</td>
<td>STaRT Training Course</td>
<td>Beardsmore Hotel, Clydebank</td>
<td>16 March 2007</td>
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<tr>
<td>Pitts NB</td>
<td>“Pathfinder Developments in Scotland”</td>
<td>NIH/IADR Symposium</td>
<td>New Orleans</td>
<td>23 March 2007</td>
</tr>
</tbody>
</table>
7. Presenter: Topping G
Title: “The Prototype Software for Training examiners in the use of the International Caries Detection and Assessment System”
Meeting: ICDAS meeting at IADR
Venue: New Orleans
Date: 24 March 2007

8. Presenter: Freeman R
Title: “A Case of Anxiety Hysteria Presenting as Dental Phobia”
Meeting: Scottish Institute of Human Relations – Tayside and Fife Group Meetings
Venue: Perth
Date: 24 March 2007

9. Presenter: Topping G
Title: “Proposals for a ‘full standard clinical survey form’ within the European Global Oral Health Indicators Development”
Meeting: Work Package 7 workshop for EGOHID II
Venue: Paris
Date: 30 March 2007

10. Presenter: Freeman R
Title: “Guidelines for communicating with parent and child: recommendations for a child-parent-centred approach for paediatric dentistry”
Meeting: Postgraduate lecture to Northern Ireland Medical and Dental Training Agency
Venue: Belfast
Date: 2 April 2007

Title: “Dental anxiety in Chinese adults: findings from a workplace survey”
Meeting: British Society for Dental Research – Joint Scientific Meeting with Scandinavian Society for Dental Research (NOF)
Venue: University of Durham
Date: 3 April 2007

Title: “The Chinese Version of the Modified Dental Anxiety Scale”
Meeting: British Society for Dental Research – Joint Scientific Meeting with Scandinavian Society for Dental Research (NOF)
Venue: University of Durham
Date: 3 April 2007

Title: “Alexithymia and Dental Anxiety: Are there Gender Differences?”
Meeting: British Society for Dental Research – Joint Scientific Meeting with Scandinavian Society for Dental Research (NOF)
Venue: University of Durham
Date: 3 April 2007

Title: “Alexithymia and Dental Anxiety”
Meeting: British Society for Dental Research – Joint Scientific Meeting with Scandinavian Society for Dental Research (NOF)
Venue: University of Durham
Date: 4 April 2007
*Poster
Title: “Oral Health Risk Assessment Practice for Adults with Learning Disabilities”  
Meeting: British Society for Dental Research – Joint Scientific Meeting with Scandinavian Society for Dental Research (NOF)  
Venue: University of Durham  
Date: 5 April 2007

Title: “Activity and Education of Clinical Dental Technicians: A UK Survey”  
Meeting: British Society for Dental Research – Joint Scientific Meeting with Scandinavian Society for Dental Research (NOF)  
Venue: University of Durham  
Date: 6 April 2007

17. Presenter: Pitts NB  
Title: “Research Priorities in Primary Dental Care”  
Meeting: 2nd Annual Research Meeting Practitioners Engaged in Applied Research and Learning (PEARL)  
Venue: New York  
Date: 21 April 2007

18. Presenter: Clarkson JE  
Title: “Critical Appraisal and Evidence in Practice”  
Meeting: VDP Meeting  
Venue: Edinburgh  
Date: May 2007

19. Presenter: Topping G  
Title: “Dental Caries and the Use of Fluoride”  
Meeting: ChildSmile East training lecture course  
Venue: Edinburgh  
Date: 1 May 2007

20. Presenter: Clarkson JE  
Title: “Prevention in Practice”  
Meeting: Oral B Seminar  
Venue: George Hotel, Edinburgh  
Date: 13 June 2007

21. Presenter: Clarkson JE  
Title: “Prevention in Practice”  
Meeting: Oral B Seminar  
Venue: Newcastle Hilton  
Date: 14 June 2007

22. Presenter: Clarkson JE  
Title: “Critical Appraisal and Evidence in Practice”  
Meeting: VDP meeting  
Venue: Glasgow  
Date: 19 June 2007

23. Presenter: Clarkson JE  
Title: “VDP Cohort Study”  
Meeting: VDP Cohort Meeting  
Venue: Edinburgh  
Date: 20 June 2007
<table>
<thead>
<tr>
<th>Skip to</th>
<th>Presenter</th>
<th>Title</th>
<th>Meeting</th>
<th>Venue</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.</td>
<td>Clarkson JE</td>
<td>“Critical Appraisal and Evidence in Practice”</td>
<td>VDP meeting</td>
<td>Glasgow</td>
<td>June 2007</td>
</tr>
<tr>
<td>27.</td>
<td>Clarkson JE</td>
<td>“Prevention in Practice”</td>
<td>Oral B Seminar</td>
<td>Radisson Edwardian Hotel, Manchester</td>
<td>3 July 2007</td>
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<tr>
<td>28.</td>
<td>Topping G</td>
<td>“Using the International Caries Detection and Assessment System – a training workshop”</td>
<td>ICDAS Training event (35 participants)</td>
<td>Helsignor, Denmark</td>
<td>3-4 July 2007</td>
</tr>
<tr>
<td>29.</td>
<td>Clarkson JE</td>
<td>“To seal or not to seal – that is the question”</td>
<td>ORCA</td>
<td>Helsingor, Denmark</td>
<td>7 July 2007</td>
</tr>
<tr>
<td>30.</td>
<td>Pitts NB</td>
<td>“To seal or not to seal – that is the question”</td>
<td>ORCA</td>
<td>Helsingor, Denmark</td>
<td>7 July 2007</td>
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<td>*Chair of session - Saturday Symposium</td>
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<td>*Invited</td>
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</tbody>
</table>
32. Presenter: Pitts NB
   Title: “ICDAS: Why is it relevant to practice and what are the next steps?”
   Meeting: FDI (International Dental Forum) Science Committee Forum
   Venue: Dubai
   Date: September 2007

33. Presenter: Freeman R
   Title: “Inequalities in access to education and health care”
   Meeting: Global Congress in Dental Education III
   Venue: Dublin, Ireland
   Date: 5-8 September 2007
   *Invited talk / Rapporteur to working group 6

34. Presenter: Clarkson JE
   Title: “Success in Dentistry”
   Meeting: Oxford Postgraduate Deanery meeting
   Venue: Oxford
   Date: 6-7 September 2007
   *invited

35. Presenter: Clarkson JE
   Title: “Evidence Based Dentistry”
   Meeting: British Society of Paediatric Dentistry Annual Scientific Meeting
   Venue: Savoy Place, London
   Date: 12 September 2007
   *invited

36. Presenter: Freeman R
   Title: “Not just what works but why and for whom it works? Evidence and the behavioural management of child dental anxiety”
   Meeting: British Society of Paediatric Dentistry Annual Scientific Meeting
   Venue: Savoy Place, London
   Date: 13 September 2007
   *invited

37. Presenter: Clarkson JE
   Title: “Prevention in Practice”
   Meeting: Oral B Seminar
   Venue: Royal College of Surgeons, London
   Date: 19 September 2007

38. Presenter: Clarkson JE
   Title: “Evidence and SDCEP”
   Meeting: Dental Away Day, NES
   Venue: Glasgow
   Date: 25-26 September 2007

39. Presenter: Freeman R
   Title: “Fruit juice, diet drinks and alcopops: strategies for erosion prevention”
   Meeting: Meeting of West of Scotland Branch, British Society of Paediatric Dentistry
   Venue: Glasgow
   Date: 4 October 2007
   *Invited presentation
40. Presenter: Clarkson JE  
Title: “Supporting the dental team to provide quality patient care”  
Meeting: NES Annual Dental Conference  
Venue: Dunkeld  
Date: 11-12 October 2007

41. Presenter: Topping G  
Title: “Dental caries detection criteria for Primary 1 Children in Scotland”  
Meeting: NDIP training and calibration courses I and II  
Venue: Perth  
Date: 29 October and 1 November 2007

2008

42. Presenter: Pitts NB  
Title: “Defining future research in remineralisation and desensitisation”  
Meeting: International Conference on Novel Anti-Caries & Remineralizing Agents (ICNARA)  
Venue: Santiago, Chile  
Date: 9-12 January 2008

43. Presenter: Clarkson JE  
Title: “TRiaDS Study: Introduction and Vision”  
Meeting: First Research Meeting, TRiaDS Study  
Venue: George Hotel, Edinburgh  
Date: 8 February 2008

44. Presenter: Pitts NB  
Title: “Modern Detection Assessment and Clinical Management of the Caries Process”  
Meeting: Academy of Operative Dentistry Conference  
Venue: Chicago, USA  
Date: 20-22 February 2008

45. Presenter: Freeman R  
Title: “Unpacking the box: a research agenda to promote and maintain oral health in socially excluded groups”  
Meeting: College Research Retreat, College of Medicine, Dentistry & Nursing, University of Dundee  
Venue: Westpark Conference Centre, Dundee  
Date: 25 February 2008

46. Presenter: Clarkson JE  
Title: “New Developments in Research”  
Meeting: Scottish Dental PBRN Symposium 2008  
Venue: Dundee Dental Education Centre  
Date: 13 March 2008

47. Presenter: Turner S  
Title: “The ERUPT Study: 3 years on”  
Meeting: Scottish Dental PBRN Symposium 2008  
Venue: Dundee Dental Education Centre  
Date: 13 March 2008
48. Presenter: Freeman R
Title: “Unpacking the box: a research agenda to promote and maintain oral health in socially excluded groups”
Meeting: Staff Research Seminar
Venue: Dundee Dental Hospital & School
Date: 21 March 2008

49. Presenter: Pitts NB
Title: “What is the state of affairs in Cariology within European Dental Schools?”
Meeting: American Dental Education Association
Venue: Dallas, USA
Date: 31 March – 2 April 2008
*Invited presentation to a Special Interest Group in Cariology

50. Presenter: Pitts NB
Title: “Prioritising Research into Dental Caries in Dental Practices”
Meeting: Practitioners Engaged in Applied Research and Learning (PEARL Network) 3rd Annual Research Meeting
Venue: New York, USA
Date: 2-4 May 2008
journal articles (peer reviewed)

2006
This list covers the interim period between publication of the last annual report and the start of 2007


2007


2008


professional journal articles


reports


book chapters


clinical guidelines

2006
This list covers the interim period between publication of the last annual report and the start of 2007


2007


invited critical commentaries


conference proceedings


abstracts

2006
This list covers the interim period between publication of the last annual report and the start of 2007


2007


web-based articles/activities


other outputs and media


popular press


UK National Cohort Study: VDP
2007

Hygiene-Therapist Vocational Training
2007
Final Year Dental Undergraduate Students
2007


15. A Study Evaluating Undergraduate Dental Education, Glasgow Dental Hospital and School, Final Year Undergraduate Student Questionnaire, 2005/06. Results Summary: January 2007. (Young, L., Baker, A., Clarkson, J.).

16. A Study Evaluating Undergraduate Dental Education, Dundee Dental Hospital and School 2006/07. Final Year Undergraduate Student Questionnaire Results Summary October 2007. (Baker, A., Young, L., Clarkson, J.).

17. A Study Evaluating Undergraduate Dental Education, Glasgow Dental Hospital and School 2006/07. Final Year Undergraduate Student Questionnaire Results Summary November 2007. (Baker, A., Young, L., Clarkson, J.).

Receptionist, Dental Nurse Administrator, Practice Manager
2007

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