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1. The Purpose of this Report
This 2008-9 Dental Health Services and Research Unit (DHS&RU) Annual Report has been prepared to give an accessible summary of DHS&RU activities for 2008-9. It is intended 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 from the last Report in April 2008 – October 2009. The DHS&RU website, which can be found at (www.dundee.ac.uk/dhsru/), contains further information on the Unit over a wider time horizon.

2. Key messages from DHS&RU
Generally, those working in the University / National Health Service (NHS) orbits in Scotland and in dental research in the UK and internationally, are experiencing an era of accelerating change. DHS&RU, with a heritage dating back some thirty years, continues to evolve so that it is fit for purpose and can deliver the core remit which has been reviewed incrementally with key stakeholders.

Unit Remit:
‘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 and promoting implementation 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.’

Transition to the future: at a time of great local, national and global change (in terms of the health, professional, education, economic and social domains) the Unit has been preparing carefully for a transition into new realities and opportunities of funding, collaboration and partnerships. Our frames of reference for this transition include the University-level strategy, the evolving UK Research Excellence Framework (REF) of assessment and the more specific developments at College, School and Centre levels. We are also active participants in the changing models of dentistry and oral health world-wide.

2.1 The University of Dundee Strategy and Priorities
These have been updated recently by our new Principal and Vice-Chancellor Professor Peter Downes. They are entirely compatible with the strategic development of DHS&RU over the last three years and now centre on:

Excellence
• Internationally competitive research
• Leading in key areas
• Maintaining and developing International reputations
• Recognising and contributing to the reality of globally mobile partnerships
• Building International-standard research support

Focus
• On research subjects that are important and where we have the skills to advance the field
Impact
Delivering research-led impacts has been a distinctive characteristic of DHS&RU. Examples include:
- our twin track Dissemination policy
- developing the evidence-led Collaboration for Improving Dentistry model (CID)
- taking the Dissemination and Implementation activities as well as Implementation Science research activities beyond dentistry
- linking with the Centre for Clinical Innovations for technology transfer activities. See also the sections below for further details

DHS&RU also plans to play our part in taking forward the University’s Internationalisation Agenda and be a contributing part of an Institution:
- where Excellence is commonly found
- which is dedicated to Impact
- which is Leading, not following

2.2 Taking a REF-aware approach to research and peer-review

“REF” - Research Excellence Framework

Overall Excellence

- Outputs
- Impact
- Environment

“Impact” - a key focus

REF Framework for Assessment and Research Excellence

It is clear from current documentation that the primary focus of the proposed UK Research Excellence Framework (REF) will be “to identify excellent research... and the impact arising from excellent research...” Figure 1 above outlines the three sub-areas of Excellence that REF will assess and also identifies the key areas in which research-led Impact can be demonstrated.

One key area which helps set out the REF agenda is the revised definition of research
that has emerged from the process. The documentation for the current final consultation states that for the purposes of the REF, we define research as ‘a process of investigation leading to new insights effectively shared’. We believe that this is a positive step forward and fits well with the ethos and traditions of DHS&RU as well as with our current activities and plans. We also believe that we are building from an excellent base to being able to show the key characteristics of REF defined excellence.

The next sections will outline briefly the DHS&RU position with respect to REF domains of Outputs, Impact and Environment.

Outputs – The Appendix outlining the Unit’s Publications for the 2008/9 period gives a good indication of the range and quality of our published outputs. More complete listings are available on the Unit website at: http://www.dundee.ac.uk/dhsru/publications/

In recent years, because of the need to plan through serial changes, we have had the opportunity for the quality and impact of what we do to be assessed in four complementary ways with external peer-review. These peer-review processes have been: the UK “RAE2008”, a Scottish NHS Chief Scientist Office-led Review of the work of DHS&RU 2002-8, a Strategic Review of Scotland’s Oral Health Research Needs and an External Review of Dental Research at the University of Dundee. It is very gratifying that each of these exercises has produced very positive assessments of the research that we do and the impact that results from it.

RAE 2008 – published feedback relating to DHS&RU
Research outputs: Research outputs were assessed as internationally excellent or above, some outputs were judged as world leading.

Research environment:
• Levels of research income per staff FTE, and particularly income known to require the very highest application standards and/or peer review, such as Research Council funding, were substantially above the Dentistry median.
• There was evidence of some world-leading research in respect of ....Health Services Research sub-group - also reflected in the outputs.
• The sub-panel recognised sustained funding to the DHS&RU ...and the impact of this group’s research on international health policy and practice.

Esteem indicators: Some prestigious invited keynote lectures and high impact on government policy and international development were recognised.

The Review was scheduled for the last months of 2008, covering the six-year period, 2002-8. It was a paper-based review, focusing on achievements during the period under consideration. The Panel comprised four senior Professors from England, Wales, Scotland and Ireland and four senior representatives of the NHS in Scotland. The conclusions were that:

• The Unit has been judged based on its record of outputs, as productive (with a rating between very good to excellent).
• The quality of the Unit’s work, based on assessed papers, has been judged as high.
• In terms of esteem indicators, the Unit was rated very highly (‘internationally excellent’ / ‘world-leading’).
• When asked to assess relevance to dental health services in Scotland the majority assessed the relevance as high.
• There was considerable praise for some of the Unit’s programmes of work, reviewers noted particular initiatives that had made an impact.
• In terms of value for money, the Unit was seen as having been, overall, a good investment.
Shaw & Speight - Strategic Review of Scotland’s Oral Health Research Needs
This review was carried out during November and December 2008 and included a consideration of a wide range of the published reports and a series of meetings with key stakeholders across Scotland. This was an opportunity to review the broad oral health research needs of Scotland.

- The Reviewers were impressed with the quality of work from DHS&RU and heard from stakeholders across Scotland that the Unit has an outstanding reputation. They were also aware of the Unit’s high standing internationally.
- The Reviewers noted that DHS&RU has established collaborations across Scotland with groups in Aberdeen, Edinburgh and Glasgow, as well as with colleagues in NHS boards and NES. They will have noted that these collaborations include a number of large trials and projects such as ERUPT, TRiADS and Childsmile which are multicentre and receive funding from a number of sources to create a sustained impact.
- The detail of this Report has now been used to help shape an integrated Research Strategy for Scotland in which DHS&RU will be an active, collaborating, participant.

External Review of Dental Research at the University of Dundee
The Report of the External Review of Dental Research indicates that the visitors concluded “a number of areas of real research strength exist” allied to “first class education” in Dentistry in Dundee. They “single out for particular recognition:

- The Dental Health Services & Research Unit
- Cariology Research (joint Unit, CCI and the Dental School)
- Craniofacial Anomalies Research Group (carried out by the Dental School)

and judged that “the research in these areas is distinguished and of the highest order”.

Impact
The next part of the Report: DHS&RU Strategic Framework - Highlights 2008-2009 comprises examples of the Unit’s work across the 12 Elements (outlined from page 8) which make up the Information Services and Knowledge Services activities of the Unit. At the end of each Highlight there is a specific Impact Statement outlining the particular impacts which are appropriate for stakeholders in each element.

An additional part of the Unit’s research-led impact is the very significant number of presentations that we make systematically each year to a wide range of diverse target audiences – these are detailed in the Appendix which lists DHS&RU Presentations for 2008/09.

Following recent changes within the University and the College of Medicine Dentistry & Nursing, DHS&RU is now linked administratively with CCI - the Centre for Clinical Innovations. This Centre provides a ready-made REF Impact route and case study for technology transfer of key protected intellectual property and research know-how in certain areas of long-term study.

The Centre Director is Nigel Pitts and the Associate Director is Chris Longbottom. CCI acts as a half way house between University Research & Development on the one hand and the broad transfer of knowledge via Industry applications of research on the other. This type of translational medicine and dentistry activity is not just from bench to bedside, but extends further, to also include patients in primary care and the wider population. CCI seeks to develop and transfer new knowledge in practical ways to help control disease and maintain health. The purpose of
CCI is to innovate in order to identify and move forward technologies capable of helping clinicians overcome un-met needs to improve the health of their patients. Implicit in this activity is an awareness of the commercial challenges in moving technologies from the laboratory setting to commercially available products, devices or “vehicles”.

CCI’s research aims centre on:
• Identification of novel and effective solutions to improve oral health and health care
• High quality research and development appropriate to the needs of modern health care
• Effective dissemination and exploitation of findings

CCI is also now contributing (with DHS&RU) and the Dental School to the Improving Oral and Dental Health Research Theme within the College. The Centre delivers its aims through a combination of externally funded science-based projects which may one day have the potential for clinical application and commercially supported research projects which meet the needs of Industry. CCI took forward the development and commercialisation of a patented ac impedance technology for caries detection – originally through a spin-out Company, IDMoS, which brought the University £1.47 million in income and produced a clinical device which is now certified in Europe and the US and is commercially available. CCI also works on grant and industry funded innovation projects in dental caries activity assessment, dental erosion and is developing a patented, prize-winning, novel, near infra-red dental imaging system with Photonics experts at Durham University.

Environment
DHS&RU are fortunate to have been part of the successful SRIF bid (Scottish Research Infrastructure Fund) some years ago that allowed the building of purpose-designed, high-quality, research accommodation with cognate groups in primary care and population research within the Medical School at Dundee. The physical and intellectual environments in the Mackenzie Building facility are excellent. Our close links with the Centre for Primary Care and Population Research (CPCPR), provide opportunities for synergy and collaboration in a vibrant and expanding research environment. At the same time we are building closer links with focused researchers at the Dental School – see section 2.5.

2.3 College Strategy
The Vision articulated in this Strategy is important and includes a research section stating clearly that:
“We aspire to international excellence in research in clinical and biomedical science and in its translation to both clinical and professional practice”

The first part of the College research focus indicates that we are: “cognisant of the University strategy for translational medicine to facilitate new developments in translational medicine”.

The particular focus that DHS&RU (and CPCPR) is taking these elements forward is at the primary care, community, population end of the translational spectrum, not just in terms of acute medicine or dentistry. The NHS links section indicates that all researchers should play a full role in the Scottish Academic Health Sciences Collaboration through the Tayside Academic Health Sciences Centre (TAHSC).

“The focus of research across the College, which is based on the principle of "cell to
will continue to be developed over the next 5 years in order that this position can be maintained and enhanced even further.” The College has also decided “to focus research on areas of existing strength namely, in medicine: cancer, cardiovascular disease, diabetes, neuroscience and population science; in nursing and midwifery: early years and parenting and improving care delivery; and in dentistry: improving oral and dental health.”

Other relevant aspirations which we seek to advance are: to develop a range of novel research partnerships with external funders and to respond rapidly to external funding opportunities.

2.4 CPCPR Strategy
Within the Medical School in Dundee we have a Centre for Primary Care and Population Research (CPCPR). The Centre Lead is Nigel Pitts. This grouping includes those carrying out health research at a population level, often with the need for the health informatics and statistical support that are co-located core College facilities.

The CPCPR Themes are:
- Dental Health Services & Research Unit (DHS&RU), Lead, Nigel Pitts
- Quality Safety & Informatics (QSI), Lead, Bruce Guthrie
- Disease Prevention, Lead, Annie Anderson
- Human Brain Development, Lead, Fiona Williams

The Research Leads within CPCPR are keen to focus on the key common areas of research interest within our Themes and to focus these around our distinctive interpretations of research in: “Translational Medicine,” Health informatics’ eHealth, Oral Health and Population Sciences, including Health Inequalities.

Working as a Centre we have agreed the Strategic focus for the work of CPCPR in the future:
“To provide a multi-disciplinary research environment where population sciences interact with clinical care, with a focus on the application of information and knowledge through appropriate technology”.

This strategic focus has been designed to be inclusive and to also be capable of acting as a route to collaboration with researchers across the Medical, Dental and Nursing Schools School and the wider University. The definition of “technology” is deliberately broad in scope.

CPCPR Strategy – Type II Cooksey Translational Medicine
- Getting Research findings into routine Practice: (GRIP).
- Paying particular attention to the variety of ways in which Patients, Professionals, Policy makers, Publishers and the Public impact on Practice.

2.5 DHS&RU – Dental School Interface Committee
Initial membership of the Committee comprises: Prof Peter Mossey, Prof David Ricketts and Dr Nicola Innes from the Dental School with Prof Nigel Pitts, Prof Jan Clarkson and Prof Ruth Freeman from DHS&RU.

The Committee considers and develops the future strategic direction of Research in Dentistry & Oral Health in Dundee. It seeks:
- To define and deliver sustainable, high quality, internationally competitive, externally funded research of relevance to dentistry that can be done in
Dundee / led from Dundee.

• To identify and agree the research areas in which DHS&RU/Dental School can reasonably focus to achieve both critical mass and excellence in depth
• To ensure that these areas fit into the College/University framework of priorities
• To recognise DHS&RU’s continuing need to integrate with both Dentistry and Medicine. The Unit’s physical location in the Centre for Primary Care & Population Research serves as a bridge to help link research in the Dental and Medical Schools.

A collaborative theme of Translational Clinical Research is being explored between the Unit and the School. The aim of this theme is to carry out relevant clinical research; to get research into practice and to have an impact - both locally and internationally. The title for the theme is Improving Oral and Dental Health. Other viable Dental School – DHS&RU Collaborative projects will link to the existing DHS&RU Strategic Framework, building on the successful links and shared grants already achieved.

3. Discovery and Delivery by DHS&RU
This is achieved through Strategic Framework for DHS&RU Knowledge and Information Services.

DHS&RU researching and facilitating delivery of Information Services for Improving Oral Health

DHS&RU researching and facilitating delivery of Knowledge Services for Improving Oral Health

The DHS&RU Strategic Framework and highlights at 2009

DHS&RU 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.

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. For example, we aim to provide more comprehensive measures of caries...
status than are currently available, in formats which will fit in well with routine dental information systems and lead to the evaluation of more health related, rather than disease related, outcomes of preventive interventions.

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. 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.

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 DHS&RU’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

DHS&RU Highlights at 2009
Highlights from DHS&RU’s work over the last period have been selected for each of the twelve elements of the DHS&RU Strategic Framework which were outlined above. The information presented here and in the next section is not meant to be comprehensive or exhaustive; it aims merely to provide a record of recent progress achieved in some areas and to demonstrate the range, utility and impact of the Unit’s work. 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 having an impact.

Element 1 • Surveillance and Oral Health Monitoring at Population Level – a range of DHS&RU’s current and continuing collaborations in dental epidemiology and health surveillance have been chosen which span the UK and European activities in this field.

Element 2 • Surveillance and Oral Health Monitoring at Practice Level – in this case, work developed over a range of DHS&RU research around Oral Health Assessment, combined with enhanced data collection by General Dental Practitioners and an EU funded project demonstrate advances in the use of practice-derived dental data which is now having a global impact.

Element 3 • Health and Oral Health Promotion including Inequalities – developments in implementing and evaluating oral health preventive programmes for the homeless and prisoners are outlined as examples of partnership research working with Scottish Government and its Dental Action Plan.
Element 4 • Caries Risk Assessment and Preventive Caries Management – the examples selected here have had direct and continuing impacts on the NHS (in Scotland and elsewhere) and in 3 of the ICDAS domains: research, clinical practice, education in Europe, North & South America and more globally.

Element 5 • Randomised Clinical Trials in Dental Primary Care – examples of work in this area, enabled by the previous work of the Scottish Dental Practice Based Research Network (SDPBRN), are the two major, Dundee-led, UK NIHR HTA trials won by the Unit and its collaborators. These are examining caries management in children and routine recall intervals in adults.

Element 6 • Development of Dental Informatics and e-health – developments of an e-health solution for a national oral health demonstration programme which is now being rolled out as a Scotland-wide NHS initiative and e-Learning resources to help train dentists in research and practice settings across an increasing number of countries are outlined.

Element 7 • Understanding Behaviour and Behaviour Change – the two highlights here are a CSO-funded study on understanding communication during patient-dentist interactions in primary care dentistry being taken forward with NHS Highland and the Scottish Dental Clinical Effectiveness Programme–derived studies on decontamination and prescribing.

Element 8 • Evaluation of Education to Operationalise Research – the findings of a range of continuing studies around Vocational Training for the dental team across Scotland and the UK are summarised and the impact on different research end-users outlined.

Element 9 • Supporting and Evaluating Continuous Quality Improvement – recent integrated work from the NES-supported Scottish Dental Clinical Effectiveness Programme (SDCEP) and the linked, CDO-supported TRiaDS (Translational Research in a Dental Setting) Programme are outlined. This unique platform involves a truly multi-disciplinary sharing of expertise.

Element 10 • NHS Scotland Links with Knowledge Services – the continuing development of the Scottish Dental Clinical Effectiveness Programme (SDCEP) Programme of Guidance, in collaboration with partners across Scotland, is forging the links to enable DHS&RU deliver its remit by enhancing the translation of research evidence into practice in Scotland working at the international level of rigour across both professions and disciplines.

Element 11 • NHS UK Links with Knowledge Services – highlights include cooperations to advance the capacity of Evidence Based Dentistry in the UK, including work with the Cochrane Oral Health Group, the virtual Centre for Improving Oral Health, NICE and the Faculty of General Dental Practice.

Element 12 • International Links with Knowledge Services – the examples chosen here are the continuing series of linked developments DHS&RU has been leading with the International Caries Detection and Assessment System and the ICDAS Foundation in many countries around the world with a number of international organisations supporting research and practice.
Some of the highlight areas are tagged with a symbol indicating the geographical breadth of the research. The following key applies:

- Scotland wide
- UK wide
- EU wide
- Global

4. Commentary on the 2008/9 Period
Developments 2008/9
We gratefully acknowledge the support that CSO funding has given us over a prolonged period and look forward to working with CSO and other funders in the future, as part of the new Dental Research Strategy for Scotland. There have been a number of key developments in Dundee over this period. These include the appointment of a new University Principal, who is currently undertaking a Strategic Review, and steps forward in the College structure, with a new College-wide Strategic Plan, a new Dean of Medicine and the setting up of Tayside Academic Health Sciences Collaboration (TAHSC) in which the NHS and University work much more closely on research. These changes coincide with the emerging REF assessment methodology in a way which gives researchers in the University and the College significant opportunities for the future as we focus on and support areas of excellence.

At the Unit level, key developments include a series of successes for Unit Staff. Jan Clarkson has deservedly been appointed to a Personal Chair in recognition of the quality and range of her work around clinical effectiveness, Ruth Freeman continues to build a distinctive funded portfolio of health and dental public health research working with both the Unit and NHS Highland, Chris Longbottom has further consolidated international links in cariology research with Iceland and elsewhere while Debbie Bonetti has built further and successfully (with high quality outputs) on a foundation of her dental experience with health psychology and implementation science research. Marilyn Laird has continued her work as an exceptional Unit Administrator and we have also been able to appoint Fergus Daly, an experienced primary care Clinical Trials Manager to the Unit through NIHR HTA funding.

We are delighted for Gail Douglas (formerly Topping) that she has been appointed to an established Dental Public Health Chair in Leeds. She will still be working with us and our Dental School cariology research colleagues on the NIHR-funded FiCTION Trial of caries management in children.

The Highlights Sections hopefully give a flavour of the international dimension of our activity; this period has seen a real consolidation and extension of international impact of our research through organisations such as ICDAS / ORCA / IADR and FDI. The success, global reach and impact of the Cochrane Oral Health Group has also been remarkable over this period. Grant successes are a continuing challenge in Dental Research but our UK-wide competitive success in primary care randomised clinical trials with the NIHR HTA has been described as exceptional.
Postscript and Impact Statement
We 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 DHS&RU 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.

DHS&RU 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 communicating our work, via a broad range of methods, to appropriate target audiences to achieve a range of impacts.

Please do not hesitate to contact me at n.b.pitts@cpse.dundee.ac.uk (or through the 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
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*UoD - University of Dundee
**NES - NHS Education for Scotland
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<th>NAME</th>
<th>DESIGNATION</th>
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<tr>
<td>Ms Emma Coles</td>
<td>Homeless Study funded, started Jan 2009</td>
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<tr>
<td>Ms Jenny Collins</td>
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<tr>
<td>Mr Alex Haigh</td>
<td>Part-time PhD student (NES funded)</td>
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<td>Ms Jenny Hally</td>
<td>PhD Student (CSO funded)</td>
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<tr>
<td>Mr Kenny Morrison</td>
<td>MRC PhD studentship (MRC funded) awarded jointly with Dept of Applied Computing, UoD and CPSE, Ongoing</td>
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<td>Mrs Fiona Stewart</td>
<td>Part-time PhD student (University of Dundee Dental School)</td>
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<tr>
<td>Mrs Joyce Adams</td>
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<tr>
<td>Dr Andrea Baker</td>
<td>Research Assistant</td>
<td>Moved to Clinical Skills Centre, University of Dundee</td>
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<tr>
<td>Professor Gail Douglas (formerly Topping)</td>
<td>Programme Director, Dental caries Control Programme</td>
<td>Moved to new post, Chair, University of Leeds</td>
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<td>Ms Gill Ramsay</td>
<td>Study Secretary</td>
<td>Funding ceased</td>
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<tr>
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<td>Senior Clinical Research Fellow current lead for DHS&amp;RU/Dental School Improving Oral Health Theme</td>
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<td>Ms Siyang Yuan BM (Dent) MSc PhD</td>
<td>Researcher</td>
<td>Returned home to China</td>
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Pitts adaptation of WHO “Stepwise” approach to Surveillance of Non Communicable Diseases for use with Oral Health Indicators

**Future Tech & Caries Activity Assessments**

**Biochemical Measurements**
- ICDAS + Caries Detection Aids
- ICDASFull Codes 0-6
- ICDAS Modified
  - Codes 0, nc, 3456
- + PUFA

**Physical Measurements**
- Qol
- OHIP
- Pain

**Questionnaire Data**
- + Supplements

**Core**

**Enhanced**

**Step One**

**Step Two**

**Step Three**

**The 2009 Adult Dental Health Survey**

Welcome to this training program on conducting assessments for the 2009 Adult Dental Health Survey.

The Adult Dental Health Survey:
- Carried out every ten years since 1979; this will be the fourth in the series.
- Conducted by the NID for Information Centre and the National Evaluation
- The 2009 survey includes new areas based on recent developments.
- The results from the survey will be available free of charge on the NID Information Centre and NID website respectively.

Click next to see the aims and objectives of this program.
Over the past three decades, DHS&RU has built up an international reputation for its collaborative work in dental epidemiology and health surveillance at the population level.

In 2009 the focus of the Unit’s work in this area has been: 1) the Adult Dental Health Survey for England, Wales and Northern Ireland (ADHS E,W&NI 09), 2) participating in ongoing planning for assessing Adult Dental Health in Scotland, 3) working with the NHS/British Association for the Study of Community Dentistry (BASCD) Dental Epidemiology Programme and 4) with the European Association of Dental Public Health (EADPH) and other projects using the International Caries Detection and Assessment System (ICDAS) for epidemiology.

The Survey has been commissioned by the NHS Information Centre for the Departments of Health in England, Wales and Northern Ireland at a cost of just over £3m. The ADHS 2009 Consortium, which was successful in a European-wide open competitive tendering process, comprises the Office for National Statistics, the National Centre for Social Research and the Northern Ireland Statistics and Research Agency, working with five University Dental Centres with specific research expertise in the questionnaire and clinical elements of National Surveys:

- University of Birmingham School of Dentistry
- Cardiff University School of Dentistry
- University of Dundee Dental Health Services & Research Unit/Dental School
- Newcastle University School of Dental Sciences
- University College London Dental Public Health Group

An estimated 10,000 adults are expected to take part in the Survey and fieldwork commenced in October 2009. Each person is being interviewed about attitudes to dental care, including oral health related quality of life and dental anxiety, by trained social survey interviewers and will then be invited to have a standardised 20-minute dental examination carried out in their own home by one of the 80 NHS dentists trained in the specific methodology of the 2009 ADHS. The findings from the ADHS E,W&NI 09 will be reported in a very different way from previous surveys as regional information of value to health planners will be presented around contemporary themes of relevance to the NHS and patients. In addition, modern accounts of the epidemiology of health, disease and service use will also be provided for the wider stakeholder groups.

The introductory screen and menu shown are from the eLearning package for the ADHS E,W&NI 09 by DHS&RU. This was used for pre-training at the central training courses and is available to examiners for refresher and later local use.

An illustration of the “STEPS” methodology which has been refined at EADPH congresses in Heidelberg, Germany (2008) and Tromsø, Norway (2009). This gives users a range of validated choices of methods and indicators with which to assess oral health and disease.

Through DHS&RU’s research in international survey methodology, we have now been able to bring contemporary methodological developments in the areas of measuring oral health and disease as well as psychosocial and and clinical impact into local, UK National and International surveillance of oral health.
The systematic collection and monitoring of oral health information at the practice level is becoming more important as concerns about clinical governance, evidence-based and patient-centred care meet increasingly stringent medico-legal requirements. Practices must understand and monitor the care they provide and the needs of health services and dental insurers, in order to assess whether oral health is being achieved and maintained.

DHS&RU continues to play important roles in the development of the Scottish Dental Clinical Effectiveness Programme (SDCEP) and in Oral Health Assessment. Professors Clarkson and Pitts, working with the previous Chief Dental Officer for Scotland and NES, initiated the SDCEP Programme. Professor Clarkson is Director of SDCEP, reporting to Professor J Bagg and the National Dental Advisory Committee. Professor Pitts is Chair of the SDCEP Guidance Development Group on Comprehensive Oral Health Assessment (COHA) and is a Steering Group member. The Programme is now linked to the DHS&RU-based TRiaDS initiative (Translational Research in a Dental Setting).

The SDCEP Guidance Development Group provides clinical guidance on best practice for the comprehensive assessment of individual patients. The Group defined oral health assessment (OHA) as assessment of the individual and her/his oral health status, leading to diagnosis and risk assessment, followed by personalised recall and care planning. More recent concepts include: assessing risk and protective factors associated with the development of oral disease and assigning a ‘risk level’ to each patient to facilitate the development of a personal care plan and the identification of a recall interval specific to each patient. In addition, details of the International Caries Detection and Assessment System (ICDAS), an evidence-based preventive approach to charting teeth comprehensively, is presented. Following national consultation, the Guidance will be introduced into undergraduate and continuing education in Scotland and a streamlined fast-track edition produced for General Practice supported by dental practice software.

DHS&RU contributed to the Independent Review of Dental Services in England & Wales in June 2009, which recommended a related form of Oral Health Assessment.

DHS&RU has been a key player in the EU-funded collaborative European Global Oral Health Indicators Development (EGOHID) II project, which uses sentinel primary care dentists to collect epidemiological information. Initial results were presented at an FDI Symposium in Stockholm (2008) and the British Division - IADR meeting in Glasgow (2009). This resource is being developed with the FDI for use in Africa and is included in current discussions about the FDI Global Caries Initiative.

Covers for the November 2008 National Consultation versions of the SDCEP Guidance on Comprehensive Oral Health Assessment and the related Quick Reference Guide Cover of the final EGOHID II Report distributed across the European Union

The synthesised evidence in Oral Health Assessment, built up by DHS&RU with a range of primary dental care stakeholders over the last fifteen years, is being applied locally, UK-wide and internationally in order to more effectively monitor oral health at the Practice level.
Guidance on Comprehensive Oral Health Assessment
Dental Clinical Guidance
Draft – For Consultation Only
November 2008

Key Elements of an Oral Health Assessment
Risk Assessment Process
Developing a Personal Care Plan
Summary of Recommendations
Draft – For Consultation Only
November 2008

Health Surveillance in Europe
Oral Health Interviews and Clinical Surveys: Guidelines
A comprehensive overview of oral health surveys throughout the European Union

European Global Oral Health Education Development Programme
Edited by
Davide P. Tecchio
Lauri A. Martikainen
Eero M. Heikkinen
Seppo A. Peltonen
Juha J. Lilleberg
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2008
Oral health and risk taking behaviours among homeless people

‘They’re only turning up here when they’re in agony, mostly when the teeth are just ready to come out. They get a lot of abscesses in their mouths - huge abscesses. They’ve no dental hygiene. A lot of it’s to do with their scripts, and now because they’ve got the new sugar free methadone it’s actually better, but a lot of them have been on the methadone for a long time and their teeth are a mess...and they’ll tell you they don’t like needles. [...] We give them toothbrushes and toothpaste – but giving them out and them using it is totally different. They’ve not got the time, so they tell you, their dental hygiene is the last thing on their priority list.’

Quote from J: Community Nurse
The Oral Health and Health Research (OHHR) Programme at DHS&RU works on 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.

Two projects at DHS&RU are addressing the specific priority need groups of homeless people and prisoners identified in the Scottish Government’s Dental Action Plan.

Developing, Implementing and Evaluating an Oral Health Preventive Programme for Homeless Populations across Scotland (Smile4life): This project aims to evaluate current models of preventive service and practice and develop an evidence-based oral health care preventive package tailored to the specific needs of the homeless in Scotland. To date, one OHP programme in Lanarkshire has been evaluated and an oral health needs assessment of the homeless population and in-depth interviews focusing on their main concerns completed. Early results from analysis of a cross sectional sample of around 850 people from seven NHS boards found that depression in Scottish homeless people is affected by oral health related factors (decayed, missing and filled teeth).

Developing, Implementing and Evaluating an Oral Health Preventive Programme for Prison Populations across Scotland: A Qualitative Assessment of Prisoners’ Needs (SOHIPP Interviews): This study, as part of the Scottish Oral Health Improvement in Prisons Programme, plans to conduct a series of interviews with Scottish prisoners about their main concerns relating to their oral health needs. This will inform the development, implementation and evaluation of an evidence-based oral health promotion intervention across the Scottish Prison Service. Young offenders, women, long term and short term/remand prisoners will be targeted. The study is currently awaiting ethical approval. An initial exploratory set of interviews with dentists providing care to prisoners is underway.

Enabling ‘at risk’ families to access preventive services is another goal of the Dental Action Plan that the OHHR Programme at DHS&RU works towards. Developing an inventory to Assess Parental concerns and Enable child dental Registration (The DAPER study) aims to find out the concerns of parents to allow the development of a reliable and valid questionnaire to assess parental concerns and enable ‘at-risk’ families to access preventive dental services, for example through the Childsmile Practice programme. During its first phase the DAPER study has undertaken interviews with mothers in areas of multiple deprivation, and remote areas across Scotland. Results suggest that mothers often live with a pervasive feeling that motherhood, as they experience it, is ‘not for me’. This has an effect on coping with change, post-natal depression, interacting with their children and feeling both physically, and socially, connected to health services and wider social networks. The subsequent phases of the study will develop, assess and conduct a field trial of a new psychometric measure of parental concern.

A quotation from a community nurse working with homeless people.

This programme of research is concerned with social inclusion, social capital, the promotion of health and oral health and is contributing to reducing health disparities in socially excluded groups in Scotland and Europe. This programme of work has informed national and international policy regarding the introduction of oral health promotion for people residing in areas of social deprivation.
DHS&RU has made major contributions to the evidence base in basic and clinical cariology over the last two decades. We have a well-established international reputation in the area and continue to take lead roles in caries research for a range of research organisations. Our focus here continues to be on making an impact by getting best evidence into clinical practice and policy making.

Both primary and synthesised DHS&RU research in this area has contributed to the Scottish Dental Clinical Effectiveness Programme (SDCEP - see element 10) Guidance on ‘Comprehensive Oral Health Assessment’ and ‘Prevention and Management of Dental Caries in Children’ which have been out for National consultation in 2009.

Over the seven years of development of the International Caries Detection and Assessment System (ICDAS) collaboration to date, there have been repeated requests to bring together the key information, research summaries and references in a way that supports translation of the evidence into modern preventive clinical treatment planning and practice informed by risk assessment. In 2009, this has now been possible in the form of a dedicated Monograph in the Karger Oral Science series, focussing on the Detection, Assessment, Diagnosis and Monitoring of Caries.

In this Monograph, twenty-three authors from nine countries have covered topics ranging from clinical visual caries detection; both traditional and novel lesion detection aids; lesion activity assessment; patient caries risk assessment; dentition and lesion history; and assessment of patients’ health behaviours. This information is then synthesised in order to guide personalised treatment planning, which is then considered in sections covering background level care; both traditional and novel preventive treatment options; both traditional and novel operative treatment options; followed by recall, reassessment and monitoring. Following this, challenges to the implementation of research findings to improve caries detection, assessment, diagnosis and monitoring are considered. In addition, an internationally agreed glossary of key cariology terms has been developed, which has already been re-published and distributed by the FDI World Dental Federation as an initial plank in its new Global Caries Initiative (GCI).

The upper illustration shows the cover of the June 2009 Monograph which brings together international experts in the field to set out a risk-informed, ICDAS-enabled, clinical framework for patient-centred caries management. The lower diagram illustrates the Risk Assessment Process for integrating across both caries and other oral health issues when identifying routine recall intervals, highlighting the increasing importance of risk assessment to routine practice.

In this element there have been direct and continuing impacts of earlier DHS&RU research in the three relevant ICDAS domains: research, clinical practice, education. The reach is from Scotland (NHS SDCEP), to Europe (EGOHID), North (ADA) & South America (ABO) as well as more globally (FDI).
Detection, Assessment, Diagnosis and Monitoring of Caries

Editor N. Pitts

Flow diagram for the Risk Assessment Process across caries and oral health informing recall interval selection in the SDCEP Comprehensive Oral Health Assessment
NIHR HTA INTERVAL TRIAL

Flow Chart

Patient eligible for 24 month recall interval

YES stratum 1

Patients randomised

24 month recall

6 month recall

risk based recall

NO stratum 2

Patients randomised

6 month recall

risk based recall

NIHR HTA FICTION TRIAL

THE THREE TREATMENT STRATEGIES

Conventional Management

Conventional restorative methods will be used including drilling and local anaesthetic. Caries will be removed and restored using fillings.

Biological Management

The caries environment is changed to slow or stop the process of decay. This intermediate treatment is generally carried out without dental drills or local anaesthetic.

Prevention Alone

Only preventive methods will be used (no fillings) including toothbrushing and diet advice and topical fluoride varnish.

Images courtesy of Dr Dafydd Evans, University of Dundee Dental School
Background

DHS&RU has, over decades, been conducting randomised clinical trials in dental primary care. Through this activity it has made an impact on dental practice and national policy (for example in the provision of fissure sealants) as well as developing the research tools, infrastructure and maintenance of network links necessary to inform future high quality RCTs.

The primary aim of performing high quality randomised clinical trials in dental primary care is to enhance patient and public health. DHS&RU works collaboratively with colleagues in Dundee Dental Hospital & School and throughout the UK. Currently, two NIHR HTA funded trials have been awarded and we are awaiting the outcome of an invited third submission. This track record is exceptional in the UK and international contexts.

NIHR HTA INTERVAL Trial (Investigation of NICE Technologies for Enabling Risk-Variable-Adjusted-Length Dental Recalls Trial)

This UK collaborative study will evaluate the effectiveness and cost effectiveness of three dental recall strategies by assessing their impact on maintaining oral health. Professors Pitts & Clarkson are joint Principal Investigators working with the CSO Health Services Research Unit and the Centre for Healthcare Randomised Trials at the University of Aberdeen.

The first recall strategy was advocated by NICE guidance: personalised variable intervals determined by risk information derived from comprehensive oral health assessment and review. The second strategy will be 6 month intervals between routine check ups; the third strategy 24 month intervals. The research will be carried out in UK general dental practices in both fluoridated and non-fluoridated areas. Outcomes will be assessed in terms of validated measures of quality of life; dental caries and periodontal disease.

NIHR HTA FICTION Trial (Filling Children’s Teeth: Indicated Or Not)

This UK collaborative study is intended to compare the effectiveness, in terms of clinical and patient-centred outcomes, of three treatment approaches to the management of decay in primary teeth i.e. conventional fillings, biological management and prevention alone. Joint Principal Investigators are Professor Clarkson from DHS&RU, Dr Nicola Innes from Dundee Dental Hospital and School (DDH&S) and Professor Gail Douglas, University of Leeds. For each treatment approach, the study will compare the incidence of pain and sepsis; the incidence and pattern of new decay in both primary and permanent teeth; quality of life issues and cost-effectiveness; and patient, parent and dentist preferences.

Collaborative ties with the Scottish Dental Practice Based Research Network (SDPBRN) have also been strengthened by DHS&RU input into a number of research projects including attitudinal surveys for a variety of primary care dental behaviours, as well as RCTs evaluating interventions specifically designed to encourage quality health care delivery.

A flowchart of the intervention groups in the INTERVAL Trial

An illustration of the three treatment strategies from the FICTION Trial

By conducting high quality trials, analyses and following broad-ranging result dissemination strategies through professional, primary care, public and scientific routes, DHS&RU has had direct impacts on dental practice and national policy, which should continue to proceed with the new UK-wide trials now underway.
DHS&RU has been involved with the Health Informatics Centre (HIC) in Dundee since its inception in 2003. As members of the Centre for Primary Care & Population Research (CPCPR) in the Medical School, we also collaborate with colleagues working in the Centre’s Quality, Safety & Informatics Research Group.

Since Childsmile@HIC e-Health began in 2006 there has been further significant progress. Initially, this supported six East of Scotland NHS Boards with Childsmile contacts in nurseries. It has now been extended to include management support for Childsmile core activities with toothpaste distribution and will go on to cover the Childsmile School Programme recording the delivery of fluoride varnish and fissure sealants to children in the school setting. This bespoke, secure, web-enabled IT support programme is now being rolled out to more and more NHS Boards. We are working with the Childsmile Programme under Mr Graham Ball (NHS Fife) with Professor Lorna Macpherson and Dr David Conway (University of Glasgow) and with the Information Services Division (ISD) to integrate our systems with other Childsmile data as part of a Scotland-wide integrated IT Programme.

DHS&RU participation in the NHS Scotland Dental Informatics Group (DIG) allows us to share knowledge and expertise with other stakeholders and to participate in the development of Dental e-health in Scotland.

DHS&RU has worked with Smile-on Ltd on a number of e-Learning resources over this period. During this time we have been able to develop some leading-edge tools to help implement research findings and standardise clinical methodology. This has been in fields ranging from achieving best clinical practice, communicating optimal research methods and new epidemiological protocols, as well as more general educational aids. The externally-funded projects are funded by industry donations, the EU, the NHS Information Centre and NIHR. These include ICDAS Codes Training (now also translated into Portuguese and Spanish, with German and Japanese versions on the horizon), the EGOHID oral health indicators methodology, the 2009 Adult Dental Health Survey (E, W&NI) clinical criteria and a training aid for dental practices participating in the INTERVAL Dental Recall Trial.

The web browser screens shown opposite depict two aspects of recording consent/refusal in Childsmile and fields used for recording clinical findings for Fluoride Varnish applications.

DHS&RU is using its eHealth and Informatics research knowledge and collaborations to help bring novel and practical e-solutions to dental service development in Scotland. These also then create research opportunities through the secure provision of routine data that can be anonymised when necessary.
DHS&RU researching and facilitating delivery of Information Services for Improving Oral Health

DHS&RU researching and facilitating delivery of Knowledge Services for Improving Oral Health

International links with knowledge services

NHS UK links with knowledge services

NHS Scotland links with knowledge services

Supporting & evaluating continuous quality improvement

Evaluation of education to operationalise research

Understanding behaviour & behaviour change

Surveillance & oral health monitoring at population level

Surveillance & oral health monitoring at practice level

Health & oral health promotion including inequalities

Caries risk assessment & preventive caries management

Randomised clinical trials in dental primary care

Development of dental informatics & e-health

Development of dentalinformatics & e-health
DHS&RU researching and facilitating delivery of Information Services for Improving Oral Health

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Supporting & evaluating continuous quality improvement

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Surveillance & oral health monitoring at population level

Surveillance & oral health monitoring at practice level

Health & oral health promotion including inequalities

Caries risk assessment & preventive care management

Development of dental information & e-health

Patient Information Sheet flow-chart from Understanding Effective Communication in Primary Care Dentistry study

1. Fill in a questionnaire about how you feel about dental treatment and how you feel generally.

2. Have your heart rate measured using a finger monitor.

3. Have your dental appointment videoed.

4. Once your appointment has finished you will be asked to fill in another short questionnaire.

5. Have your heart rate measured again using a finger monitor.

6. Finally, we will phone you 3 months later to ask your opinions about the study.

Results of the decontamination survey:

Identified Barriers

- Setting up a decontamination area is difficult (little space / costly)
- Purchasing/storing approved cleaning equipment is expensive (equipment is expensive and it is difficult to make the necessary changes in the practice layout)
- Validation, testing and maintenance of cleaning equipment (don’t know how, difficult to do)
- Finding time required (difficult to find the time to follow procedures / reduces time for patient appointments)
- Difficult to follow Guidance material (needs more clarification)
- Transportation of equipment from one area to another (difficult/unnecessary fuss)
- Will result in staff being unhappy / Staff will be resistant
- Will be stressful to follow procedures
- Decontamination procedures are overkill (wasting time and money on unnecessary procedures)

Identified Facilitators

- Avoid legal implications (Inspectors would not shut down the practice; reduce patients’ reasons to sue)
- May increase patient’s confidence in the practice (fulfilling standards)
- Patient safety will be enhanced
Understanding behaviour and behaviour change is fundamental to effecting improvements in the provision of dental services. Effective patient/dentist communication has been shown to influence patient compliance and satisfaction. As dental treatment becomes more complex and patient needs more diverse, understanding how to build a strong patient-dentist alliance and minimise the future risk of litigation is essential. Another important issue is identifying the barriers and facilitators of evidence-based dental practice in order to inform interventions to encourage dentists to implement desired behaviours.

Two recent areas of work at DHSR&U have furthered an understanding of behaviour and behaviour change.

Understanding Effective Communication in Primary Care Dentistry is a CSO funded collaborative project between the University of Dundee, the University of St Andrews and NHS Highland. The project aims to explore and understand verbal and non-verbal communication in the patient-dentist interaction within the dental surgery setting. Each patient-dentist interaction is video-taped and RIAS, (the Roter Interaction Analysis System) used to code individual utterances and non-verbal behaviour. The study is being undertaken as part of a Clinical Research Fellowship in the field of Special Care Dentistry by Ms Jenny Hally who has completed a certificate in Public Health and Health Services Research at the University of Aberdeen and formal training at the University of Warwick in the use of the RIAS coding system. A pilot study was undertaken prior to project roll-out. Currently the project has entered its data collection phase, with videoing of treatment dyads within NHS Highland’s salaried dental service. The project is being accompanied by a systematic review looking at links between the clinical dyad and patient anxiety.

The results of the Scottish Dental Clinical Effectiveness Programme (SDCEP) 2007 survey into decontamination practice suggested there is great variation in what dentists in Scotland believe they should change, what they feel able to change, and what they are willing to change in terms of their evidence-based decontamination behaviour. The findings were used to inform the development of an intervention which is currently being tested in a definitive RCT. The SDCEP 2008 prescribing survey identified barriers to the reduction of variation and inaccuracies in dental prescribing of antibiotics in Scotland: the lack of clear advice on when and what to prescribe for specific dental conditions, the duration and dosage; the occurrence of habitual prescribing; lack of awareness or concern about the risk of increased resistance with overuse, over long, and inaccurate prescribing of antibiotics, or of the importance and utility of using alternative treatments. Addressing these issues has the potential for reducing overuse and variation in dental prescribing of antibiotics, in Scotland and the UK.

In addition to this research furthering the understanding of behaviour and behaviour change, work on understanding the role of dental anxiety on behaviour and behaviour change continues at local, national and international levels. Work with Universities of Oulu, Finland; Malaya, Malaysia; Rockhampton, Australia and ACTA in the Netherlands is allowing the development of measures of dental anxiety and professional engagement to understand their impact upon oral health status and service delivery. This programme of research will ultimately improve patients’ care by the effective sharing of findings through the Unit’s established service and educational networks both locally, nationally and internationally.
A continuing focus of DHS&RU 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 practitioners (VDPs) and other educational initiatives.

The original 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, was to further understanding of the impact of different content and assessment formats on VDPs. Questionnaires assessing stakeholder identified outcomes have been completed twice yearly by VDPs in the above deaneries over the last six years. The main results of data appear in yearly reports to participating deaneries and in a paper published by the British Dental Journal (Bonetti et al, 2008). The results suggest that UK dental vocational training is preparing its participants in accordance with stakeholder-identified aims and outcomes and that there may be benefits to introducing the mandatory assessment system throughout the UK.

- The infrastructure is established for continued data collection on UK VDPs, allowing access to information within and across future cohorts and consultations are taking place to determine how to best take advantage of this.
- The UK National Cohort Study concentrated on the evaluation and assessment of the impact of postgraduate training. The results have now led to the adoption of a similar evaluation and impact assessment model for undergraduate and other dental professional vocational training courses.
- Evaluating training in this longitudinal manner has led to informed curriculum development and provides a quality management tool for education providers.
- The implementation of Practice Development Plans (PDP) in general dental practice was also evaluated 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 postal questionnaires, an online questionnaire, semi-structured interviews and focus groups. The results suggest that the PDP framework supported the dental team in identifying practice learning needs and to 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.
- 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.

Research findings have been shared widely and, in partnership with end-users including NES, Vocational Trainees and Trainers, have led to beneficial changes in the education and training processes.
### PATIENTS
- Recruitment
- Retention
- Prescribing patterns
- Quality
- Costs and benefits

### PROFESSIONAL
- Skills
- Confidence
- Health
- Job satisfaction
- Career choice
- CPD/postgraduate training uptake

### DELIVERY
- Patient satisfaction
- Patient perception of assessment

#### OUTCOMES

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<tr>
<th>VDPs</th>
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<td>• Recruitment</td>
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#### PATIENTS
- Skills
- Confidence
- Health
- Job satisfaction
- Career choice
- CPD/postgraduate training uptake

#### PROFESSIONAL
- Attitudes to trainer role
- Impact on own practice
- Financial implications
- Confidence
DHS&RU researching and facilitating delivery of Information Services for Improving Oral Health

DHS&RU researching and facilitating delivery of Knowledge Services for Improving Oral Health

International links with knowledge services

NHS UK links with knowledge services

NHS Scotland links with knowledge services

Supporting & evaluating continuous quality improvement

Evaluation of education to operationalise research

Understanding behaviour & behaviour change

Surveillance & oral health monitoring at population level

Surveillance & oral health monitoring at practice level

Health & oral health promotion including inequalities

Caries risk assessment & preventive care

Randomised clinical trials in dental primary care

Development of dental informatics & e-health

Surveillance & oral health monitoring at practice level

Health & oral health promotion including inequalities

Caries risk assessment & preventive care

Randomised clinical trials in dental primary care

Development of dental informatics & e-health

TRiADS - Define Professional Behaviour Outcomes

SDCEP Guidance Development Group identify and prioritise professional behaviour outcomes to assess best practice

SDCEP Guidance Development Group identify and prioritise professional behaviour outcomes to assess best practice

SDCEP Guidance - Pre-Publication Period

TRiADS - Collect Data from Steps Above and Collate With Each Guidance Experience to Synthesise What is Known About Changing Each Set of Behaviours

SDCEP Guidance - Consultation Period

TRiADS - Diagnostic Analysis

SDCEP Guidance - Publication and Dissemination Period

TRiADS - Determine the Need for and Design of Knowledge Translation Intervention

TRiADS - Evaluation

SDCEP Guidance Development Group identify and prioritise professional behaviour outcomes to assess best practice

SDCEP Guidance Development Group identify and prioritise professional behaviour outcomes to assess best practice

TRiADS - Collect Data from Steps Above and Collate With Each Guidance Experience to Synthesise What is Known About Changing Each Set of Behaviours

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TRiADS - Collect Data from Steps Above and Collate With Each Guidance Experience to Synthesise What is Known About Changing Each Set of Behaviours

Funded by NHS Education for Scotland
A consistent finding in health services research is that the transfer of research findings into practice is unpredictable. One common policy strategy to promote continuous quality improvement is the production of clinical guidance which in Scotland is the responsibility of the Scottish Dental Clinical Effectiveness Programme (SDCEP). However, it is known that the publication of guidance does not necessarily result in professional behaviour change. Other knowledge transfer interventions have shown varied effectiveness, much of this unexplained. The need for further translation research, and the development of a generalisable, theory based, knowledge transfer framework has been identified.

Over the last year, a multidisciplinary collaboration comprising clinical and academic experts, involving implementation science researchers from across the UK and Canada, have worked on developing a programme of knowledge transfer research embedded in the SDCEP guidance development process. The aim of the Translation Research in a Dental Setting (TRiADS) Programme funded by NHS Education for Scotland (NES) is to improve the quality and safety of dental health care in Scotland by establishing a practical evaluative framework to support and provide a means of continuously evaluating the impact of guidance on the quality of health care in General Dental Practice. Professor Jan Clarkson and Mr Craig Ramsay from the Health Services Research Unit, University of Aberdeen are Joint Principal Investigators.

The TRiADS programmatic evaluation employs a standardised process. A process of diagnostic analysis begins at the start of the SDCEP guidance development process. Information is gathered about current dental care activities. Key recommendations and their associated behaviours are identified and prioritised. Stakeholder questionnaires and interviews are used to identify potential barriers and enablers towards the key recommendations and behaviours. Routinely collected data is used to measure compliance with the guidance and to inform decisions about whether a knowledge translation intervention is required. Interventions are theory-based and informed by evidence gathered during the diagnostic phase and prior published evidence. They are evaluated using a range of experimental and quasi-experimental trial designs, and, where possible, data collection will continue beyond the intervention to investigate the sustainability of an intervention effect.

The first practical application of the TRiADS evaluative process is currently in progress. In May 2007, SDCEP published guidance on the cleaning of dental instruments in primary care. A recent survey examined the impact of this guidance. It found a substantial gap still existed between current practice and safe practice. The results of this survey informed the development of a knowledge translation intervention - a theory-based, individualised practice support visit. To date, 199 practices have been recruited to a definitive RCT examining the impact of this intervention on the quality of health care provision.

The TRiADS evaluative process is readily transferable across professional disciplines and a protocol for this programme of research is being prepared for publication.

The embedding of TRiADS within the SDCEP guidance development process offers an unparalleled opportunity to influence patient safety by shaping the guidance development process to promote the implementability of the guidance and also provides a unique platform to study the sustainability of getting evidence into routine clinical practice.
The Scottish Dental Clinical Effectiveness Programme (SDCEP) is an initiative of the National Dental Advisory Committee (NDAC) in partnership with NHS Education for Scotland (NES). Its primary aim is to provide user-friendly evidence-based guidance to support dental teams. NDAC identified seven priority areas: sedation; decontamination; emergency dental care; drug prescribing; practice support manual; child caries; and oral health assessment. The SDCEP Programme Development Team work with dental professionals to review current evidence relating to best practice and produce guidance.

The guidance initiative involves participation from all sectors of dentistry in Scotland. Several members of DHS&RU play key roles. Professor Jan Clarkson is Director of SDCEP and sits on the NDAC. Professor Nigel Pitts chairs the SDCEP Oral Health Assessment Guidance Development Group, is a member of the SDCEP Steering Committee and sits on the NDAC. Ms Jenny Hally was a member of the Oral Health Assessment Group until December 2008. Dr Debbie Bonetti advises on guidance implementation issues.

- In addition to ‘Conscious Sedation In Dentistry’, ‘Cleaning of Dental Instruments’ and ‘Emergency Dental Care’, the latest SDCEP guidance ‘Drug Prescribing For Dentistry’, was published in April 2008. This was distributed widely to the dental profession in Scotland. Subsequently there has been considerable demand for additional copies with around 900 copies supplied outside Scotland. A printed update was distributed in June 2009.
- Three-month consultations on ‘Guidance on Comprehensive Oral Health Assessment’ and ‘Prevention and Management of Dental Caries in Children’ ended in February and July 2009. Comments received are being considered to inform revision of these documents before peer review and publication in 2010.
- SDCEP is also contributing to the TRiADs programme, an international multidisciplinary collaboration of researchers concerned with evaluating and improving the implementation of SDCEP guidance.
- SDCEP staff contribute to several other national dental quality improvement initiatives that are related to SDCEP guidance topics to ensure consistency and share knowledge gained through SDCEP’s work.
- The SDCEP website, www.scottishdental.org/cep, was redesigned and relaunched in December 2008 and provides access to published guidance and draft guidance during consultations.

The ‘Drug Prescribing For Dentistry’ guidance document showing the problem-oriented style used to present dental prescribing advice and the new SDCEP homepage.

This programme of work in collaboration with partners across Scotland, the rest of the UK and internationally, is forging the links to enable DHS&RU to deliver its remit by enhancing the translation of research evidence into practice in Scotland working at the international level of rigour across both professions and disciplines.
Progress of Oral Health Group

Number of Publications

Cochrane Library Issue
DHS&RU has been involved in spearheading the development of Evidence-Based Dentistry at the UK level and working collaboratively with key partners in this relatively 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.

The Cochrane Oral Health Group (COHG) based in the School of Dentistry, University of Manchester is one of 50 review groups who belong to the Cochrane Collaboration, an international non-profit and independent organisation providing up-to-date information about the effects of health care. Professor Clarkson, in her role as Joint Co-ordinating Editor with Professor Helen Worthington from the University of Manchester, has been involved in eliciting, disseminating and maintaining systematic reviews of randomised controlled trials in oral health. Many of the COHG reviews have been used in UK and international guidelines for evidence-based dental practice.

Review of the NICE guidance for dental recall: DHS&RU 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: Professors Pitts and Clarkson have been involved in this review and updating process for this document as well in the development of the original guidance.

After a lengthy commissioning process and competition, a UK-wide team led by Professors Pitts and 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 graph depicts the progress made by the Cochrane Oral Health Group since 1998 in the number of Protocols, Reviews and Review updates published up to 2009.

DHS&RU continues to make a major contribution to shaping Knowledge Services at the UK level by contributing methodological and content expertise to guideline development, and leading the research agenda to explore the health impact of using dental guidelines in practice.
DHS&RU has for decades followed a twin-track dissemination policy for its research and has collaborated across disciplines and geographic boundaries in order to work with the best groups to deliver on our remit: contributing 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. This is achieved by a range of activities at the international level, including many which space precludes mention of here, but which can be identified from publication and presentation lists.

The DHS&RU Collaboration for Improving Dentistry (CID) has been developing over the last two years with an aim to provide a systematic way to translate research into clinical and public health practice. This involves pursuing an informed research agenda, building and contributing to systematic reviews (not least through the Cochrane Oral Health Group – see element 11), then effectively disseminating research findings to a range of stakeholders and education providers to help effective implementation by clinicians working with informed patients.

The July 2009 Rio Caries Conference was jointly organised by the FDI World Dental Federation and the Brazilian Dental Association (ABO) and was the launch for a long-planned Global Caries Initiative, which hopes to bring together many stakeholders in order to make an impact on dental caries and its preventable consequences worldwide. DHS&RU and its international collaborators are playing an active part in this process.

- The International Caries Detection and Assessment System, the ICDAS Foundation and ICDAS Co-Chairs have been in discussion with the FDI about this initiative for some time and supported the Rio Conference with several lecturers.
- The European Organisation for Caries Research (ORCA) is also supportive, participated in the Rio Conference and it is also drawing up a Cariology Curriculum. As ORCA President, Professor Pitts worked on these initiatives and also provided a Continuing Education Course to the Brazilian Dental Association part of the Rio meeting.
- The FDI and the American Dental Association - ADA have played significant roles in brokering key steps of this initiative. DHS&RU researchers provided speakers for Symposia and lectures at recent FDI meetings in Dubai, Stockholm, Singapore and China.
- The International Association for Dental Research (IADR) through its Cariology Group and its Evidence Based Dentistry (EBD) Network is also involved in this initiative to ensure that Global oral science participates and is properly represented. These activities also mesh with separate IADR efforts to reduce inequalities and enable research evidence to be implemented more effectively. Once again, DHS&RU researchers are active participants in the planning and delivery of these initiatives.

DHS&RU has developed, nurtured and maintained a broad range of effective international collaborations with research organisations and knowledge services which allow us to participate fully in Getting Research-findings into routine Practice (GRiP). We also continue to focus on a variety of ways in which this process impacts on the behaviour of Patients, Professionals, Policy makers, Publishers and the Public (GRiP²).
Entries alongside an asterisk * indicate audience details or the nature of presentation (by invitation or by application).

All presentations are verbal unless otherwise indicated.

2008 (from April 2008 onwards)

1. Presenter: Topping G  
   Title: “Revealing the iceberg of caries experience: an ICDAS primer”  
   Meeting: International Hygienists Conference, Amsterdam  
   Date: 24 April 2008  
   *International audience of dental hygienists / Invited

2. 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, New York, USA  
   Date: 2-4 May 2008  
   *Dental primary care clinicians and researchers

3. Presenter: Clarkson JE  
   Title: “Dissemination of Cochrane Resources beyond the library”  
   Meeting: 3rd International Evidence Based Dentistry Conference, American Dental Association, Chicago, USA  
   Date: 3-4 May 2008

4. Presenter: Topping G  
   Title: “Evaluation of WP7 clinical form and guidance”  
   Meeting: EGOHID II WP7 workshop, Dundee  
   Date: 9-10 June 2008  
   *International audience of researchers

5. Presenter: Topping G  
   Title: “Sampling for the Scottish National Dental Inspection Programme”  
   Meeting: National Co-ordinators Training Course, Edinburgh  
   Date: 10 June 2008  
   *Dental survey co-ordinators

6. Presenter: Hally JD  
   Title: “Effective Communication in Dental Primary Care”  
   Meeting: NHS Highland Dental Services, Clinical Governance and Risk Management Group, Inverness, Scotland  
   Date: 12 June 2008  
   *Invited presentation by NHS Highland regarding PhD Project / Dentists and NHS managers

7. Presenter: Pitts NB (Co-Chair and Leader)  
   Title: “Caries Detection and Assessment Driving Improved Outcomes for Oral Health”  
   Meeting: ICDAS Annual Workshop 2008, Groningen, Holland  
   Date: 22-24 June 2008  
   *International cariologists, researchers, clinicians and academics.
8. Presenter: Topping G  
Title: “ICDAS e-learning package and other activities led by Dundee University in research, epidemiology and in practice”  
Meeting: ICDAS Annual Workshop 2008, Groningen, Holland  
Date: 23 June 2008  
*International group of experts in cariology

9. Presenter: Topping G  
Title: “ICDAS in general practice”  
Meeting: ICDAS training course for practitioners, Groningen, Holland  
Date: 24 June 2008  
*General Dental Practitioners from the Netherlands

10. Presenter: Topping G  
Title: “ICDAS activities led by Dundee University in research, epidemiology and in practice”  
Meeting: ICDAS annual open meeting preceding ORCA congress, Groningen, Holland  
Date: 25 June 2008  
*International audience of cariology researchers

11. Presenter: Pitts NB  
Title: “Philosophy and Update on the International Caries Detection and Assessment System (ICDAS)”  
Meeting: European Organisation for Caries Research Meeting (ORCA), Groningen, Holland  
Date: 25 June 2008  
*International cariologists, researchers and academics.

12. Presenter: Collins J  
Title: “Developing, implementing and evaluating an oral health preventive programme for the homeless (roofless and houseless) populations in Scotland”  
Meeting: Postgraduate Research Student Symposium, Ninewells Hospital, Dundee  
Date: 27 June 2008

13. Presenter: Clarkson JE  
Title: “Evaluating Knowledge Transfer Programs”  
Meeting: International Association for Dental Research, 86th General Session, Toronto, Canada  
Date: 2-5 July 2008

14. Presenter: Pitts NB  
Title: “The Value of Early Caries Detection in Enabling Preventive Therapies in Dentistry”  
Meeting: International Association for Dental Research Meeting - Symposium for IADR Groups and the Ontario Dental Association, Toronto, Canada  
Date: 4 July 2008  
*International dental researchers, policy makers, public health staff, clinicians and academics.

15. Presenter: Pitts NB  
Title: “The Future International Classification of Dental Caries for Dental Practice and Research”  
Meeting: American Dental Association – Caries Classification Workshop, Chicago, USA  
Date: 20-22 August 2008  
*Invited lecture to US and International dental practitioners, planners and eHealth staff.
16. Presenter: Pitts NB  
Title: “Caries Epidemiology and Caries Prevention”  
Meeting: European Association for Dental Public Health (EADPH), Heidelberg, Germany  
Date: 5 September 2008  
*Invited lecture and workshop - European dental public health practitioners and academics.

17. Presenter: Topping G  
Title: “Oral epidemiology in general dental practice”  
Meeting: Pan European Federation IADR Meeting 2008, London  
Date: 10-12 September 2008  
*Poster / International audience of dentists and dental researchers

Title: “Dental Nurses as Trainers and Assessors: Past and Current Experiences”  
Meeting: Pan European Federation IADR Meeting 2008, London  
Date: 10-12 September 2008  
*Poster / International audience of dentists and dental researchers

Title: “Dental Nurses as Trainers and Assessors: Developing a Suitable Qualification”  
Meeting: Pan European Federation IADR Meeting 2008, London  
Date: 10-12 September 2008  
*Poster / International audience of dentists and dental researchers

Title: “Dental treatment anxiety, perception of costs in emergency dental patients”  
Meeting: Pan European Federation IADR Meeting 2008, London  
Date: 10-12 September 2008  
*Poster / International audience of dentists and dental researchers

Title: “Dental Nurses as Trainers and Assessors: Vocational Dental Trainers’ Attitudes”  
Meeting: Pan European Federation IADR Meeting 2008, London  
Date: 10-12 September 2008  
*International audience of dentists and dental researchers

Title: “Weighted Case Mix Tool – Characterising Patients Attending Salaried Dental Services”  
Meeting: Pan European Federation IADR Meeting 2008, London  
Date: 10-12 September 2008  
*International audience of dentists and dental researchers

23. Presenters: Yuan S, Freeman R  
Title: “Can a community-based oral health intervention promote Chinese mother/infant bonding?”  
Meeting: Pan European Federation IADR Meeting 2008, London  
Date: 10-12 September 2008  
*International audience of dentists and dental researchers

Title: “Relationship of dental anxiety with depression in a Chinese population”  
Meeting: Pan European Federation IADR Meeting 2008, London  
Date: 10-12 September 2008  
*International audience of dentists and dental researchers
   Title: “Equilibrium salivary-fluoride levels (18-ESF) as a measure of toothbrushing frequency”
   Meeting: Pan European Federation IADR Meeting 2008, London
   Date: 10-12 September 2008
   *International audience of dentists and dental researchers

26. Presenter: Shepherd S, Young L, Bonetti D, Clarkson JE and Ogden G
   Title: “Role of dentists in providing alcohol advice: preliminary interview findings”
   Meeting: Pan European Federation IADR Meeting 2008, London
   Date: 10-12 September 2008

27. Presenter: Clarkson JE
   Title: “Dissemination and Implementation: the key to effective healthcare”
   Meeting: Pan European Federation IADR Meeting 2008, London
   Date: 10-12 September 2008

28. Presenters: Clarkson JE and Worthington HV
   Title: “Early enamel lesions: treatment”
   Meeting: Pan European Federation IADR Meeting 2008, London
   Date: 10-12 September 2008

29. Presenter: Pitts NB
   Title: “Early enamel lesions: their prevalence & importance”
   Meeting: Pan European Federation IADR Meeting 2008, London
   Date: 10-12 September 2008
   *International audience of dentists and dental researchers. Symposium chair and speaker.

30. Presenter: Longbottom C
    Title: “Early enamel lesions: measurement, activity & monitoring”
    Meeting: Pan European Federation IADR Meeting 2008, London
    Date: 10-12 September 2008
    *International audience of dentists and dental researchers

31. Presenter: Pitts NB
    Title: “Update on UK-wide BASCD UK Epidemiology Programme 2008-9”
    Meeting: BASCD UK Epidemiology Programme National Training Conference, Salford, UK
    Date: 15 September 2008
    *UK benchmark examiners, trainers and co-ordinators for oral health surveillance.

32. Presenter: Hally JD
    Title: “Effective Communication in Dental Primary Care”
    Meeting: Clinical Discussion Group, Inverness, Scotland
    Date: 21 September 2008
    *Invited Presentation by NHS Highland Salaried Dental Service regarding PhD Project.

33. Presenter: Pitts NB
    Title: “Strategic Framework for Evidence Based, Preventive, Caries Management and Personalised Treatment Planning”
    Date: 24 September 2008
    *International dental clinicians, opinion leaders and policy makers.
34. Presenter: Longbottom C  
Title: “Caries Detection, Measurement and Activity Assessment”  
Meeting: FDI Annual World Dental Congress 2008, Stockholm, Sweden  
Date: 24 September 2008

35. Presenter: Pitts NB  
Title: “The Scope and Impact of Childhood Caries Worldwide – A Review of the Epidemiological Data”  
Meeting: FDI Annual World Dental Congress 2008 - FDI Joint World Dental Development & Health Promotion Committee – Public Health Section Forum: Addressing the Global Pandemic of Childhood Caries – A Step to Achieving the Millennium Development Goals, Stockholm, Sweden  
Date: 25 September 2008

*International Public Health dentists, Chief Dental Officers and academics.

36. Presenter: Hally JD  
Title: “Effective Communication in Dental Primary Care”  
Meeting: Clinical Discussion Group, Wick, Scotland  
Date: 26 September 2008

*Invited Presentation by NHS Highland Salaried Dental Service regarding PhD Project.

37. Presenter: Topping G  
Title: “E-learning material in the training of dental examiners”  
Meeting: EGOHID II Final Conference 2008, Stockholm, Sweden  
Date: 26 September 2008

*International audience of public health dentists and researchers.

38. Presenter: Pitts NB  
Title: “Standardised Clinical Examinations to collect Oral Health Indicators”  
Date: 27 September 2008, a.m.

*International dental planners, informatics staff, opinion leaders and policy makers.

39. Presenter: Pitts NB  
Title: “Technical considerations issuing from the EGOHID II Project – Impacts on Education from Work Package 7 and beyond”  
Meeting: FDI Annual World Dental Congress 2008 – Final Conference for Oral Health Surveillance in Europe on behalf of the Public Health Agency, European Commission 2, Stockholm, Sweden  
Date: 27 September 2008, p.m.

*International dental planners, informatics staff, opinion leaders and policy makers.

40. Presenter: Hally JD  
Title: “Effective Communication in Dental Primary Care”  
Meeting: Clinical Discussion Group, Alness, Scotland  
Date: 28 September 2008

*Invited Presentation by NHS Highland Salaried Dental Service regarding PhD Project.

41. Presenter: Pitts NB  
Title: “Closing the Gap Systematically: Getting Preventive Evidence into Practice”  
Meeting: 5th Preventive Dental Conference, Hungarian Dental Association, Budapest, Hungary  
Date: 14 November 2008

*Invited Presentation, Open meeting
42. Presenter: Freeman, R.
Title: Dentistry and Psychoanalysis: strange bedfellows?
Meeting: Research seminars in Dental Public Health, University Oulu, Oulu.
Date: 27 November 2008
*Invited speaker, Faculty of Dentistry, Oulu

43. Presenter: Freeman, R.
Title: Promoting Well-being in Socially Excluded Groups: A Role for Oral Health?
Meeting: DHSRU@30 Anniversary Conference, University of Dundee, Dundee
Date: 01 December 2008
*Invited speaker

44. Presenter: Topping G
Title: “Training, standardisation and certification for ICDAS examiners”
Meeting: ICDAS Workshop, Bogota, Colombia
Date: 10 December 2008
*International audience of experts in cariology

45. Presenter: Pitts NB
Title: “Education and Public Health Matters - the role of ICDAS”
Meeting: ICDAS Workshop, Bogota, Colombia
Date: 10 December 2008
*International audience of experts in cariology

46. Presenter: Pitts, N.B.
Title: Integrating Caries Detection, Assessment, and Personalised Disease Management
Meeting: University of Iceland Dental School, Reykjavik, Iceland
Date: 2008
Open meeting

47. Presenter: Chambers S
Title: Developing an Inventory to Assess Parental Concerns and Enable Child Dental Registration
Meeting: Dental Clinical Governance Group NHS Highland
Date: 11 December 2008
*Health Professionals

2009

1. Presenter: Topping, G.V.A.
Title: Caries detection in children’s teeth – half day postgraduate students’ course
Meeting: Symposium on Paediatric Dentistry, Amsterdam
Date: 2009
*Course/Postgraduates

2. Presenter: Topping, G.V.A.
Title: A new epidemiological survey tool. E-tutorial for EGOHID system – half day session
Meeting: Italian Association of Dental Public Health, Rome
Date: 2009
*Course/Postgraduates
3. Presenter: Topping, G.V.A.
Title: International Caries Detection and Assessment System (ICDAS) – current thinking on caries detection and activity assessment – half day session
Meeting: Italian Association of Dental Public Health, Rome
Date: 2009
*Course/Postgraduates

4. Presenter: Pitts, N.B.
Title: Dental Caries Epidemiology / Contemporary Caries Management
Meeting: International Association for Dental Research, Miami, USA
Date: 2009
*Open meeting

5. Presenter: Heather Cassie, Linda Young, Debbie Bonetti, Jan Clarkson, Andrew Forgie, and Ken Scoular
Title: CPD and CPD online: A survey exploring dentists’ beliefs and self reported behaviour in Scotland.
Meeting: Scottish School of Primary Care Conference
Date: 21 January 2009
*Poster and Oral Open meeting

6. Presenter: Freeman, R.
Title: Dental Public Health in NHS Highland
Meeting: Public Health Education Seminars, NHS Highland, Inverness.
Date: 19 February 2009
*Professionals

7. Presenter: Clarkson, JE
Title: Effectiveness of Vocational Training in Scotland compared to Regions of the UK
Meeting: National Trainer Meeting
Date: 19 February 2009
*Dental Vocational Trainers

8. Presenter: Freeman, R.
Title: What happened to Sophie? A psychoanalytic explanation of children’s responses to dental treatment
Meeting: NES Staff Research Seminar Series, Dundee Dental Hospital and School.
Date: 10 March 2009
*Professionals

9. Presenter: Freeman, R.
Title: Differentiating dental phobia form dental anxiety: strategies for general practice.
Meeting: NES Staff Research Seminar Series, Dundee Dental Hospital and School.
Date: 10 March 2009
*Professionals

10. Presenter: Clarkson, JE
Title: Critical Appraisal
Meeting: VT Training Day
Date: 12 March 2009
*Vocational Trainees
11. Presenter: Pitts, N.B.
   Titles: Global Oral Health Inequalities: The Challenge for IADR and FDI
           Dental Caries: Challenges and Approaches
   Meeting: Joint IADR/FDI Symposium
   Date: March 2009

12. Presenter: Freeman, R.
   Title: Improving compliance: understanding and encouraging patient motivation
   Meeting: GSK-sponsored Symposium: International Association for Dental Research, Miami, Florida.
   Date: 02 April 2009

*Invited presentation to international audience of dental researchers

13. Presenter: Pitts, N.B.
   Title: Caries Classification Systems in Dental Practice
   Meeting: PEARL Network Annual Meeting [NIH funded Practice Based Research Network]
   Date: 25 April 2009

*Open meeting

14. Presenter: Jan Clarkson/Helen Worthington/Derek Richards/Anne-Marie Glenny
   Title: Critical Appraisal
   Meeting: ISFE course
   Date: 28 April 2009

*Specialist Registrars and Trainers

15. Presenter: Freeman, R.
   Title: The progress of the millennium global oral health goals in Scotland: how are the marginalized groups affected?
   Date: 25 May 2009

*Invited speaker to Faculty of Dentistry, University of Malaya, members and representatives from the Oral Health Division of the Ministry of Health

16. Presenter: Freeman, R.
   Title: Development of the millennium oral health goals 2020: a theoretical and historical perspective.
   Date: 25 May 2009

*Invited speaker to Faculty of Dentistry, University of Malaya, members and representatives from the Oral Health Division of the Ministry of Health

17. Presenter: Clarkson JE
   Title: Why should I be an EBD Champion?
   Meeting: ADA Champions Conference Chicago
   Date: 28 May 2009

*Invited speaker
18. Presenter: Clarkson JE  
Title: Evidence for dental practice  
Meeting: British Society for Dental Research – Joint Scientific Meeting with Scandinavian Society for Dental Research  
“Hygienists Conference, Washington”  
Date: 16 June 2009

19. Presenter: Pitts NB  
Title: ICDAS Developments and the Future  
Meeting: ICDAS Budapest Lead Workshop  
Date: 29-30 June 2009

20. Presenter: Pitts NB  
Title: ICDAS Update on translation to a Clinical Practice Framework  
Meeting: 56th Congress of the European Organisation for Caries Research  
Date: 02 July 2009, Budapest

21. Presenter: Topping, G.V.A., Chan, K., Ekstrand, K., Martignon, S., Sohn, W.  
Title: ICDAS Detection Codes: General Dental Practitioners’ Ease of Use and Confidence Ratings After Introductory Training  
Meeting: 56th Congress of the European Organisation for Caries Research, Budapest  
Date: 02 July 2009

22. Presenter: Pitts NB  
Title: Global Caries Initiative  
Meeting: FDI Caries Conference, Rio de Janeiro  
Date: 13-18 July 2009  
Invited participant and discussant

23. Presenter: Pitts NB  
Title: Since we have such a wealth of evidence and know-how in cariology, why don’t we control the caries menace?”  
Meeting: Brazilian Dental Association, Continuing Education Course, Rio de Janeiro  
Date: 13-18 July 2009

24. Presenter: Pitts NB  
Title: Social Responsibility in Caries Management and Prevention for Under-served Communities - International and Domestic - The Global Caries Problem and Implications for Caries Management Strategies  
Meeting: New York University Social Responsibility Lecture  
Date: 21 July 2009

Title: Awareness of alcohol as a risk factor by University Students  
Meeting: British Society for Dental Research (BSDR) Scientific Meeting, Glasgow  
Date: 02 September 2009

Poster  
Open meeting
26. Presenter: Coles, E., Collins, J., Humphris, G., Freeman, R., Williams, B.  
   Title: Depression and oral health-related factors in homeless people in Scotland  
   Meeting: British Society for Dental Research (BSDR) Scientific Meeting, Glasgow  
   Date: 02 September 2009  
   Poster: Open

27. Presenter: Chan K, Curnow M, Longbottom C, Pitts NB, Douglas GVA  
   Title: Comparing Four Caries Detection Methods in a School Setting  
   Meeting: British Society for Dental Research (BSDR) Scientific Meeting, Glasgow  
   Date: 03 September 2009  
   Poster: Open

28. Presenter: Bonner, B.C., Pitts, N.B., Douglas, G.V., Bourgeois, D.  
   Title: Usability of the EGOMID II oral health clinical indicators survey form.  
   Meeting: British Society for Dental Research Scientific Meeting, Glasgow.  
   Date: 03 September 2009  
   Poster: Open

29. Presenter: Freeman, R.  
   Title: Can a school-based toothbrushing intervention influence child quality-of-life and self-esteem?  
   Meeting: British Society for Dental Research (BSDR) Scientific Meeting, Glasgow  
   Date: 03 September 2009  
   Poster: Open

30. Presenter: Cassie, H., Young, L., Stirling, D., Diamond, A., Clarkson, J.E.  
   Title: The translation of SDCEP Emergency Dental Care Guidance into Practice  
   Meeting: British Society for Dental Research (BSDR) Scientific Meeting, Glasgow  
   Date: 03 September 2009  
   Poster: Open

31. Presenter: Shepard, S., Young, L., Bonetti, D., Clarkson, J.E., Ogden, G.  
   Title: Alcohol advice in primary dental care.  
   Meeting: British Society for Dental Research (BSDR) Scientific Meeting, Glasgow  
   Date: 03 September 2009  
   Poster: Open

   Title: Evaluating health visitors' assessment of caries risk for Childsmile practice  
   Meeting: British Society for Dental Research (BSDR) Scientific Meeting, Glasgow  
   Date: 03 September 2009  
   Poster: Open

33. Presenter: Young L, Tilley C, Chalkley M, Bonetti D and Clarkson J  
   Title: Initial estimates of the impact of the new NHS dental contract in England & Wales  
   Meeting: SHIP Exploiting Data for Health Research Conference, St Andrews  
   Date: 18 September 2009  
   *Open
34. Presenter: Pitts NB
Title: An Update on Dental Caries Globally: Epidemiology, Cariology and Personalised Management across Stages of Disease
Meeting: Caries Symposium at FDI Singapore
Date: September 2009

35. Presenter: Pitts, N.B.
Title: Caries Management Strategies Aligned to the Continuing Global Caries Problem
Meeting: FDI Continuing Education Lecture - Tanjin, China
Date: September 2009
*Invited

36. Presenter: Pitts, N.B.
Title: Adult Dental Health Consortium with Office of National Statistics Examiner Training Courses 1 and 2, Newport Wales
Meeting: Adult Dental Health Consortium with ONS
Date: 2 meetings: 1st & 3rd weeks, September 2009

37. Presenter: Pitts, N.B.
Title: The SDCEP Comprehensive Oral Health Assessment. National and international perspectives.
Meeting: Scottish Dental Practice-Based Research Network 7th National Symposium, Stirling, UK.
Date: 22 October 2009
*Open

38. Presenter: Mackenzie, G., Cassie, H.
Title: The SDCEP Comprehensive Oral Health Assessment. Development of guidance: Consultation feedback.
Meeting: Scottish Dental Practice-Based Research Network 7th National Symposium, Stirling, UK.
Date: 22 October 2009
*Open

39. Presenter: Longbottom, C.
Title: Practical issues in assessment. Caries Assessment.
Meeting: Scottish Dental Practice-Based Research Network 7th National Symposium, Stirling, UK.
Date: 22 October 2009
*Open

40. Presenter: Chambers, S.
Title: Understanding mother's concerns in accessing childsmile practice.
Meeting: Scottish Dental Practice-Based Research Network 7th National Symposium, Stirling, UK.
Date: 22 October 2009
*Open

41. Presenter: Coles E
Title: Smile4life: Promoting oral health and well-being in homeless populations in Scotland.
Meeting: Scottish Dental Practice-Based Research Network 7th National Symposium, Stirling, UK.
Date: 22 October 2009
*Open
journal articles (peer reviewed)

2008


2009


DCC


**professional journal articles**

2008


2009


**reports**

2008


19. Hally J. and Freeman R. The BDA weighted case-mix tool. A field trial conducted in the salaried dental services NHS Highland. Dental Health Services Research Unit, Dundee. Programme: OHHR


2009


book chapters

2008


2009

books whole

2008


2009

   Pitts, N.B. Introduction pp1-14
   Topping, G.V.A. and Pitts, N.B. Clinical Visual Caries Detection pp15-41
   Ekstrand, K.R., Zero, D.T., Martignoni, S., and Pitts, N.B. Lesion Activity Assessment pp63-90
   Freeman, R. and Ismail, A. Assessing Patients’ Health Behaviours pp113-127
   Pitts, N.B. and Richards, D. Personalized Treatment Planning pp128-143
   Pitts, N.B. Background Level Care pp144-148
   Longbottom, C., Ekstrand, K. R., and Zero, D. T. Traditional Preventive Treatment Options pp149-155
   Ricketts, D.N.J. and Pitts, N.B. Traditional Operative Treatment Options pp164-173
   Ricketts, D.N.J. and Pitts, N.B. Novel Operative Treatment Options pp174-187
   Clarkson, J.E., Amaechi, B.T., Ngo, H., and Bonetti, D. Recall, Reassessment, and Monitoring. pp188-198
   Pitts, N.B. Implementation pp199-208

invited critical commentaries


abstracts

2008


2009


