

## Dental Caries Control Programme

<b>Staffing</b>	Dr G Topping	Programme Director (College of Med, Den and Nurs funded, 100%)
	Dr C Longbottom	Programme Methodologist (core funded, 5 sessions per week)
	Professor NB Pitts	Unit Director (core funded, University of Dundee, 56% across all DHSRU work)
	Dr K Chan	Statistician University of Dundee/Childsmile (0.5 fte)
	Dr Siyung Yuan	Researcher
	<i>Research Fellow</i>	
	Prof D Ricketts	Dundee Dental Hospital & School Senior Clinical Research Fellow (core funded, 3 sessions per week)
	<i>Research Students</i>	
	Dr C Anderson	PhD Part-time (NHS R&D funded) – completed 2007
	Mr G Bouliotis	PhD Full-time (MRC HSRC funded) – submitted 2007, revisions 2008
	Ms Amirtha Mekhala	MPH student (supervision of dissertation, Dr G Topping) – completed June 2006
	Ms Janice Rowland	MPH student (supervision of dissertation, Dr G Topping) – submitted Feb 2008
	Mr Kenny Morrison	MRC PhD studentship (MRC funded) awarded jointly with the Department of Applied Computing and Tayside Centre for General Practice

### Programme update

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

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

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

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

The NDIP surveys continue to play a pivotal role in evaluating the effectiveness of oral health improvement projects conducted as part of the Childsmile initiatives.

In this past year we have helped drive up the quality of information from NDIP basic dental examinations by assisting the development of a national training pack. An NDIP evaluation project began in 2007 and is being jointly developed by DHSRU in collaboration with Mr Martyn Merrett of NHS Tayside and is led by Mr Chris Cunningham of NHS Lothian.

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

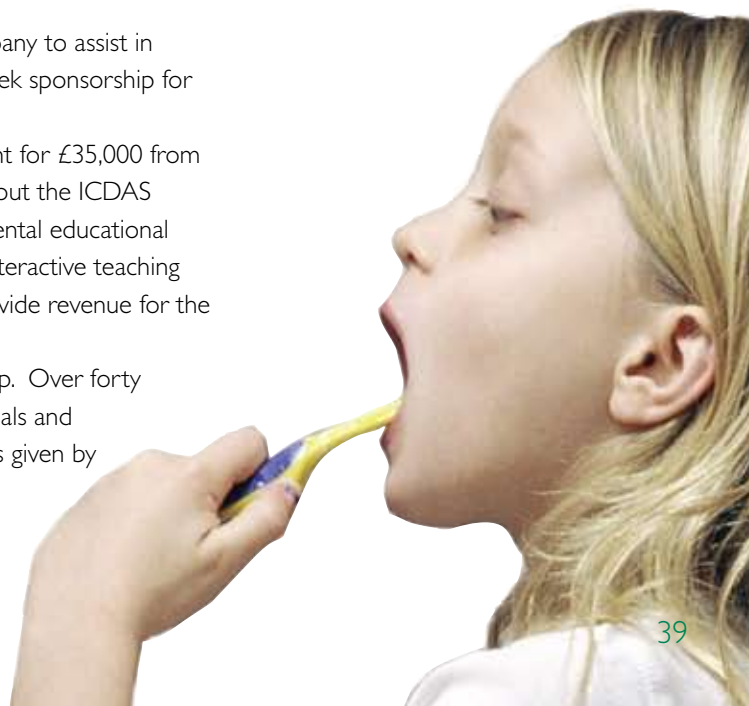
Staff within the DCC programme have also contributed to the Childsmile core programme of nursery toothbrushing and to Childsmile practice as well as to the Childsmile evaluation board.

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

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

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

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





Dr Gail Topping  
Programme Director,  
Dental Caries Control Programme

- Prior to the European Organisation for Caries Research (ORCA) meeting in Helsingør, Denmark in July 2007 the group offered an introductory training course in the use of ICDAS which was fully subscribed with thirty-two cariologists.
- The core ICDAS committee also met in February 2008 to plan for the annual meeting to be held in Groningen in June 2008. Sponsorship from Johnson and Johnson has been secured to support this meeting.
- A new database of ICDAS coded dental chartings and dental radiographs which will provide a rich source of research material on enamel and dentinal caries is being developed from the Icelandic epidemiological survey.
- Professor Eino Honkala's research group from Turku in Finland are running a study on the incidence and prevalence of caries in groups of children exposed to a variety of sugar substitutes and will use ICDAS to do this.

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

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

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