Institution: University College London

Unit of Assessment: 3A - Allied Health Professions, Dentistry, Nursing and Pharmacy: Dentistry

Title of case study: Challenging oral health inequalities through a public health approach to policy

1. Summary of the impact

The UCL Dental Public Health Group have made a significant contribution to oral health policy in the UK and internationally through their research on oral health inequalities and the need for a reorientation of dental services towards a more evidence based, integrated preventive approach addressing common risks for oral diseases and other chronic conditions. Our work has influenced local national oral health policies and the development of clinical practice guidelines to reduce oral health inequalities and provide the opportunity for dental professionals to prevent both oral and systemic disease.

2. Underpinning research

Since 1995 the UCL Dental Public Health group have conducted research that has detailed the patterns of oral health inequalities, the presence of social gradients in oral health, and explored the psychosocial causes of oral health inequalities. This has led to the development and evaluation of community-based health improvement strategies which seek to lessen oral health inequality through adopting a common risk approach for both oral and general health.

During the 1990s, the issue of inequalities in health more generally grew to prominence. We conducted pioneering work during this period to incorporate a consideration of inequalities in oral health into this wider health agenda. In a review in 1999, we provided, for the first time, a synthesis of the evidence for widening inequalities in oral health between social classes, regions of England, and among certain minority ethnic groups in pre-school children **[1]**. Leading on from this work, we developed a common risk factor approach based upon the general principles of health promotion, aiming to ensure that oral health programmes are not developed and implemented in isolation from other health programmes. The common risk factor approach addresses risk factors common to many chronic conditions within the context of the wider socio-environmental milieu. Oral health is determined by diet, hygiene, tobacco, alcohol use, stress and trauma. As these causes are common to a number of other chronic diseases, adopting a collaborative approach is more rational than one that is disease specific **[2]**.

We undertook secondary analyses of national data sets from a diverse range of countries including the UK, US, Brazil, Japan, South Korea and across the EU. These identified a social gradient (graded stepwise nature of outcomes across the entire social hierarchy) in a variety of oral health outcomes and at different points in the life course from early childhood, through adolescence to adulthood and older age **[3]**. Our work highlighted that the influences upon oral health inequalities are complex and include broad community, social, economic and psychosocial factors. Through systematic review we demonstrated the limitations of dental health education and clinical preventive interventions in tackling oral health inequalities as they fail to address the underlying social determinants **[4]**.

Two of the common risk factors which our work has focussed on are smoking and diet. In these areas we have developed, implemented and evaluated a range of community-based oral and systemic health improvement population interventions.

Following the publication of the government's 1998 White Paper on measures to reduce smoking rates across the population, we conducted work to examine how dentists and their team members could become actively involved in these efforts. We conducted a needs assessment on behalf of the Health Education Authority to examine the status of smoking cessation in dental hygiene and dental therapy curricula and to develop appropriate teaching resources in this area. This identified a number of barriers to both teaching and practising smoking cessation **[5]**. We also conducted

research to explore perceived barriers within dental teams. Key issues identified were: a fatalistic and negative concept of prevention; perceived lack of relevance of smoking cessation to dentistry; patient hostility; and organizational factors within the practice setting **[6]**. Leading directly from this work, Watt co-wrote *Helping Smokers Stop: A Guide for the Dental Team* which was published by the Department of Health in 2004. Watt's work to develop smoking cessation activities in dental practice have continued since that time, and further aspects are described in Section 4 below.

We have also conducted extensive research into diet and nutrition, as they relate to oral health. In the late 1990s, for example, we conducted a survey of infant feeding practices within the Asian community in Britain **[7]**. We have conducted a randomised controlled trial to assess whether monthly home visits from trained volunteers could improve infant feeding practices at age 12 months in two disadvantaged inner city London boroughs. This found the home visits promoted aspects of recommended infant feeding practices including eating three solid meals per day, and eating more fruit and vegetables **[8]**. Our work also demonstrated that preventive dietary interventions to lessen obesity in young persons in the UK can be effectively delivered in the primary dental care setting.

Researchers of UCL Dental Public Health who contributed to this work included: Professor Aubrey Sheiham (Emeritus Professor of Dental Public Health), Professor Richard Watt (Professor of Dental Public Health) and Dr George Tsakos (Senior lecturer in Dental Public Health).

3. References to the research

[1] Watt R, Sheiham A. Inequalities in oral health: a review of the evidence and recommendations for action. Br Dent J. 1999 Jul 10;187(1):6-12. http://dx.doi.org/10.1038/sj.bdj.4800191a

[2] Sheiham A, Watt RG. The common risk factor approach: a rational basis for promoting oral health. Community Dent Oral Epidemiol. 2000 Dec;28(6):399-406. http://doi.org/cjbb8k

[3] Sabbah W, Tsakos G, Chandola T, Sheiham A, Watt RG. Social gradients in oral and general health. J Dent Res. 2007;86:992-6. http://dx.doi.org/10.1177/154405910708601014

[4] Watt RG, Marinho VC. Does oral health promotion improve oral hygiene and gingival health? Periodontol 2000. 2005;37:35-47. http://dx.doi.org/10.1111/j.1600-0757.2004.03796.x

[5] Dykes J, Watt RG, Robinson M. Smoking cessation and the dental hygiene and dental therapy curriculum. Int J Health Promot Educ. 2001;39(1):21-5. Copy available on request, and see also: http://www.ihpe.org.uk/jour/3901-04.htm

[6] Watt RG, McGlone P, Dykes J, Smith M. Barriers limiting dentists' active involvement in smoking cessation. Oral Health Prev Dent. 2004;2(2):95-102. http://www.ncbi.nlm.nih.gov/pubmed/15646942

[7] Watt RG. A national survey of infant feeding in Asian families: summary of findings relevant to oral health. Br Dent J. 2000 Jan 8;188(1):16-20. http://dx.doi.org/10.1038/sj.bdj.4800374a

[8] Watt RG, Tull KI, Hardy R, Wiggins M, Kelly Y, Molloy B, Dowler E, Apps J, McGlone P. Effectiveness of a social support intervention on infant feeding practices: randomised controlled trial. J Epidemiol Community Health. 2009 Feb;63(2):156-62. http://doi.org/b3phqw

4. Details of the impact

The research undertaken by the UCL Dental Public Health Group on the nature of oral health inequalities, the common shared determinants of oral and general health inequalities, and the design and approach needed to reduce inequalities has been highly influential in national and international oral health policy and in changing professional practice. Our research has helped to shift oral health policy from an isolated perspective, towards a more integrated public health approach.

Our research on the common risk factor approach and the determinants of oral health inequalities has been highly influential on **national oral health policy**. As a result of the expertise developed

through the underpinning research described above, Watt has advised on and authored a number of key national policies over the last decade, including the national strategy "Choosing Better Oral Health: An Oral Health Plan for England" which was first published in 2005 **[a]**. This key document has continued to inform national oral health policy throughout the current REF period including the approach adopted by Public Health England, who state that the research of our group provides a very important contribution to their overall agenda to improve the nation's health and address health inequalities **[b]**. In view of his common risk approach to oral and systemic health Watt was also a core member of the Department of Health working group which produced *Delivering Better Oral Health: An evidence-based toolkit for prevention* **[c]**. This document was distributed to all general dental practitioners in England in April 2009. Its goal was to re-orientate dentists towards working in a more preventive manner based upon up-to-date scientific evidence. Specific areas of work included diet advice, smoking cessation support and brief interventions to reduce harmful alcohol intake.

Smoking cessation: Watt chaired the group which wrote the Department of Health guidance document, *Smokefree and Smiling: helping patients to quit tobacco* **[d]**. This document provided guidance for primary care dental teams on the contribution that they can make to smoking cessation. In the same year he authored a smoking cessation training resource for dental teams, published by NICE which was designed to equip members of the dental team with the skills and knowledge needed to provide effective smoking cessation support **[e]**. The training materials were distributed to all undergraduate dental and oral hygiene and therapy schools in England. As a result of this work, combined with the toolkit set out in *Delivering Better Oral Health*, dentists do now routinely take a smoking history and are beginning to offer cessation advice or refer patients for specialist support. This is demonstrated by the results of the 2009 Adult Dental Health Survey which report increasing rates of smoking cessation advice delivered by dental teams **[f]**.

Maternal and child nutrition: In 2008, NICE issued guidance on Maternal and child nutrition (PH11) which aimed "*to improve the nutrition of pregnant and breastfeeding mothers and children in low-income households*." As a consequence of his earlier work on the social gradients associated with breast feeding and reference nutrient indicators in pre-school children, Watt was a member of the Programme Development Group and the only representative from an oral health background **[g]**. Specifically based upon the outcome and process evaluation of peer support infant feeding interventions, Watt provided detailed input on the peer support elements of the guidelines and also the incorporation of oral health in relation to sugars consumption.

The incorporation of our research into oral health policy has since led to various changes in professional clinical practice amongst primary care dentists in England. The current care pathway of the **Dental Contract Reform Programme** is seeking to develop "*a new contract model and way of working which shifts the focus of NHS dentistry from treatment and repair to prevention and oral health*" **[h]**. The more integrated preventive approach based very much on our model of common risk factors through the inclusion of advice on diet, tobacco and alcohol. Present evidence suggests that this model would be acceptable to patients (for example nearly three-quarters of responding patients of the a pilot scheme of a new NHS contract "*said they had a better understanding of their oral condition following their recent visit under the new system and a similar proportion said they had actually changed their oral hygiene habits as a result of their visit*"), and that dentists will utilise resources more effectively and positively influence future NHS dental care as a result (only 8% of responding dentists indicated that they would not align their clinical practice to the new contract) **[h]**.

At a local level, the research outcomes have been highly influential in supporting the **development of local oral health strategies** and in particular the importance of adopting a common risk factor approach in tackling shared risks for a range of chronic conditions including oral diseases. Across the country many Primary Care Trusts and Local Authorities have used our work in shaping their local strategies. Good examples of this include the oral health strategies for Islington, Cambridgeshire and Norfolk **[j, j, k]**.

Our research has gone on to have an influence on oral health policy and practice in other parts of

the world also. In **Australia**, our work was influential in informing the development and contents of both national and local policies. The Principal Population Oral Health Advisor in the Victoria State Government writes that "*Over the last ten years their work has shaped key population oral health plans, policies and resources. These documents include the* National Oral Health Plan – Health Mouths, Healthy Lives 2004-2013*, the* Evidence-based oral health resource, Department of Health Victoria, 2011 *and the soon to be released National Oral Health Promotion Plan*" **[l]**. Attesting to a broader impact on the oral health agenda, the Chair of the Australian National Oral Health Promotion Plan Committee writes that: "*International leadership in population oral health, especially with regards to promoting effective policies and interventions to reduce oral health inequities, is not a feature of the organized dental profession either in Australia or internationally… The work that you and your graduates have been championing is a major support to numerous academic, public health educators and researchers throughout the world struggling to have a policy impact in their national health agenda*" **[m]**.

5. Sources to corroborate the impact

Copies of archived documents are also available on request.

[a] Department of Health. Choosing Better Oral Health: An Oral Health Plan for England. London: Department of Health; 2005. http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4123253.pdf

[b] Letter from the Director of Dental Public Health, Public Health England. Copy available on request.

[c] Department of Health. Delivering Better Oral Health: An evidence-based toolkit for prevention. London: Department of Health; 2009. http://webarchive.nationalarchives.gov.uk/20130107105354/http:/www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_102982.pdf

[d] Watt RG. Smokefree and smiling: helping dental patients to quit tobacco (Gateway 8177). London: Department of Health; 2007. http://collections.europarchive.org/tna/20080102105757/http://dh.gov.uk/prod_consum_dh/idcplg?IdcService=GET_FILE&dID=140842&Rendition=Web

[e] Watt RG. Smoking cessation training resource for dental teams. London: National Institute of Health and Clinical Excellence; 2007. ISBN 1-84629-427-4. Copy available on request.

[f] The Health and Social Care Information Centre (2011). Adult Dental Health Survey 2009; http://www.hscic.gov.uk/catalogue/PUB01086

[g] Full guidance here: http://guidance.nice.org.uk/PH11/Guidance/pdf/English. See p.65 for Development Group membership.

[h] Department of Health. NHS dental contract pilots - Early findings: A report by the dental contract pilots evidence and learning reference group. London: Department of Health; 2012. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/212999/NHS-dental-contract-pilots-early-findings.pdf

[i] NHS Islington Clinical Commissioning group (2009) The Islington 2009/10 JSNA. Chapter 9: Oral Health. http://www.islingtonccg.nhs.uk/jsna/Chapter-9-Oral-health-JSNA-200910.pdf

[j] Cambridgeshire Oral Health Strategy, 2010. Copy available on request.

[k] NHS Norfolk. Oral Dental Health Needs Assessment for NHS Norfolk; 2010. www.norfolkinsight.org.uk/resource/view?resourceId=441

[l] Letter from Principal Population Oral Health Advisor, Victoria State Government. Copy available on request.

[m] Letter from the Chair of the National Oral Health Promotion Plan Committee, Australia. Copy available on request.