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Dear Mrs Chapman,

Children and Young Peoples Committee – Inquiry into Children's Oral Health in Wales

Thank-you for the opportunity to contribute to the Assembly's inquiry into children's oral health in Wales.

I am responding on behalf of the Department of Applied Clinical Research and Public Health, Cardiff University School of Dentistry. This department hosts the Academic Dental Public Health Unit and is responsible for dental public health research, teaching and the collation of the dental evidence base in Wales.

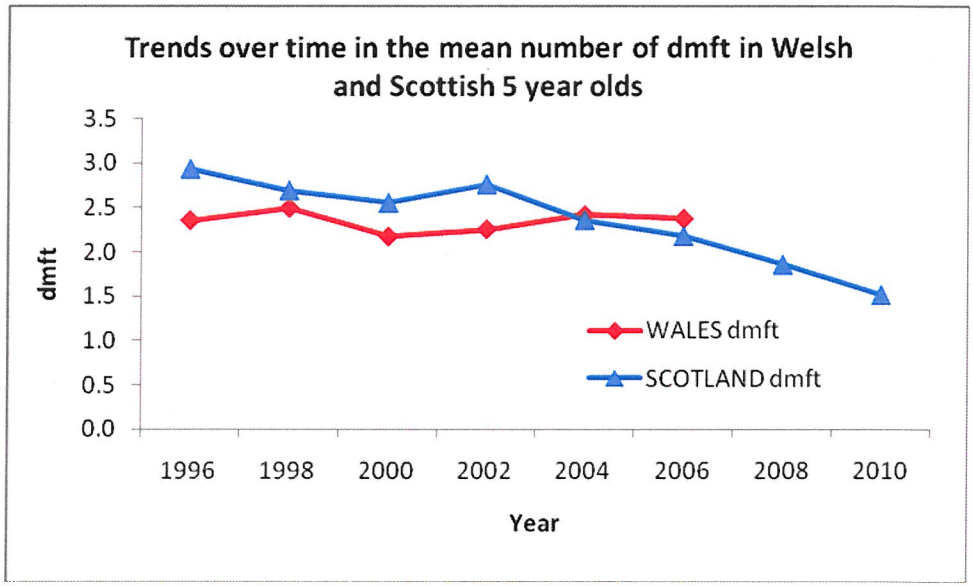
I primarily wish to address points 2, 5, 6 and 7 outlined in your consultation letter of 27th July 2011. I will leave comment on other points to colleagues in the Local Health Boards and to the Office of the Chief Dental Officer.

Point 2: Whether the investment has delivered improved health outcomes for the most disadvantaged children and young people.

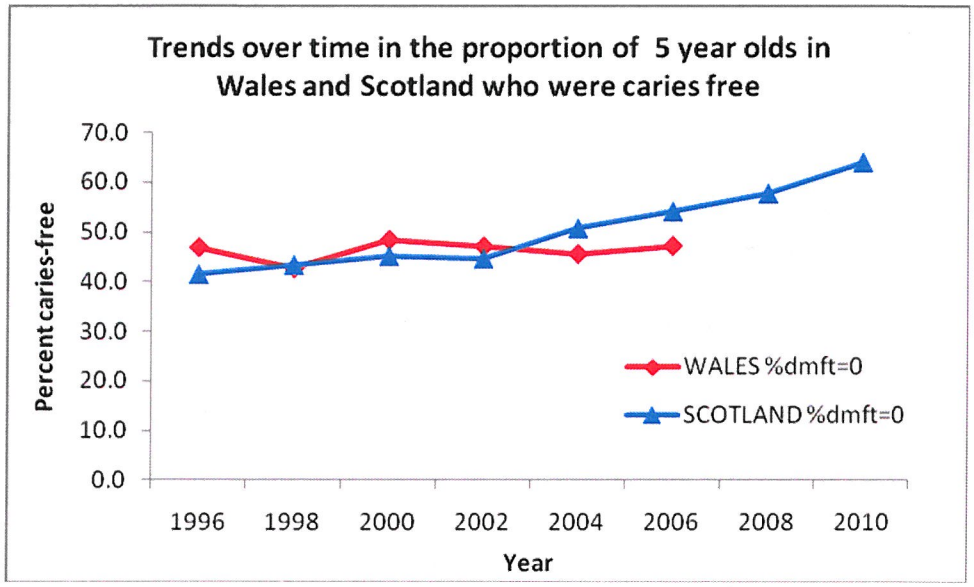
I believe that it is too soon in the lifespan of the Designed to Smile programme to answer this question in terms of the number of teeth that have been saved from tooth decay or the impact on the increased proportion of children now caries-free. There is evidence of the exceptional uptake of the programme – an average of 94% of children whose parents are asked, consent to their children taking part. Qualitative research undertaken by our Unit on behalf of the Welsh Government has demonstrated the acceptability of the programme to parents and schools.

However, in terms of "improved health outcomes", this will take a further period to become manifest in national surveys of oral health. The Pilot areas (Betsi Cadwalader and Cardiff and Vale University Health Boards) commenced in-school brushing in October 2008, the programme being extended across Wales in late 2009 / early 2010. In formal research on tooth decay prevention, a minimum of three years is required to demonstrate benefit under the ideal conditions of a clinical trial. I would suggest that a longer time is required in a community programme such as Designed to Smile for the hard clinical outcomes to become manifest via the national dental surveys.

I would however draw the committee's attention to the success achieved in Scotland via their Childsmile Programme, which Designed to Smile mirrors closely. Disadvantaged communities in many areas of Scotland have benefited from in-school toothbrushing since the late 1990s and Scotland-wide since 2005. The following graph shows the marked improved in oral health in 5 year-olds in Scotland over the past decade. It is highly likely that this improvement is in large part down to the widespread implementation of toothbrushing in poor areas.



(*Data Sources*: WOHIU, SNDIP).



(*Data Sources*: WOHIU, SNDIP).

N.B. (i) 2008 data for Wales is not included as the data are not comparable with Scotland due to the introduction of positive consent for dental surveys in Wales. (Surveys prior to 2008 were conducted using similar methodology.)

(ii) dmft is a measure of decay which is sufficiently severe to require either a filling or extraction.

Systematic reviews have shown that there can be absolutely no doubt about the effectiveness of fluoride toothpaste in the prevention of tooth decay[1] and also the effectiveness of fluoride varnish[2] and fissure sealants[3]. A formal randomised controlled trial has shown the benefits of in-school brushing[4], and a subsequent report has shown that children who took part in in-school brushing had better oral health than the control group four years after the trial stopped[5].

It is important that Members appreciate that Designed to Smile is a vehicle for delivery of fluoride and other direct clinical interventions that have been shown beyond doubt to prevent decay. The programme is therefore much more sophisticated that simply teaching children how to brush their teeth or induce the habit of regular cleaning, although these too of course are important.

In summary, it is too early to answer your Committee's point on improved oral health outcomes, but given the research evidence and the experience in Scotland, there is every hope that the Designed to Smile programme will have a very positive outcome, provided that the toothbrushing protocols are adhered to.

Point 5 Whether the programme addresses the needs of all groups of children and young people.

In common with most chronic lifestyle influenced diseases, tooth decay is both more widespread and severe in children from disadvantaged communities. The selection of schools, primarily from Community First areas, ensures that Designed to Smile is targeted at those at greatest risk – ensuring a targeted and effective deployment of the programme.

Point 6 The extent to which the Designed to Smile programme has been integrated into wider local and national initiatives such as the Welsh Network of Healthy School Schemes and Flying Start.

No doubt Community Dental Service colleagues will provide evidence of how the Designed to Smile Programme relates to health promotion initiatives and has helped build on existing links with Flying Start and before that Surestart programmes. I would however draw the Committee's attention to a recent review in the *British Dental Journal*, which discusses the evidence for improving oral health among school children. This review points out that traditional approaches to oral health education where parents and children are "educated" are ineffective, particularly in those at greatest risk of disease. Modern approaches to oral health promotion require the selection from an evidence based palate of interventions, to suit the needs of the local populations[6]. If appropriately applied, then Designed to Smile meets these objectives.

Point 7 The current and potential implications for paediatric dentistry, including reviewing the strengthened role of the Community Dental Service in children's public health

The academic Public Health Unit, has in conjunction with the Designed to Smile team at Cardiff and Vale UHB, the Health Economic Unit, Swansea University and the South East Wales Clinical Trials Unit and the Centre for Society, Health and Ethics (both Cardiff University), been awarded a £1.1M research grant by the National Institute for Health Research, to conduct a clinical trial to determine the relative effectiveness and cost-effectiveness of pit and fissure sealants and fluoride varnish in preventing dental caries in first permanent molars[7].

This U.K. nationally funded research is utilising Designed to Smile as the vehicle for delivery of the study. This will strengthen the preventive evidence base across the whole of the NHS and Internationally. As a result, the profile of the Community Dental Service in Wales has been raised by Designed to Smile. I believe this is an important example of how the programme is contributing to strengthening the role of the Community Dental Service.

In conclusion

In my view, the Designed to Smile programme was a very necessary and important step in supporting those communities in Wales which had dropped to the very bottom of the British oral health league table. If the Welsh Government is to achieve their 2020 oral health targets set out in their Child Poverty Reduction Strategy[8], then in the absence of water fluoridation, it is essential that the Designed to Smile programme be supported and given time to demonstrate its full potential.

If I can be of assistance to you and your committee in further explaining or expanding on the above points, I would be happy to do so.

Yours sincerely,

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References

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3 Ahovuo-Saloranta A, Hiiri A, Nordblad A, Mäkelä M, Worthington HV. Pit and fissure sealants for preventing dental decay in the permanent teeth of children and adolescents. Cochrane Database of Systematic Reviews 2008, Issue 4. Art. No.: CD001830. DOI: 10.1002/14651858.CD001830.pub3.

4 Curnow MMT, Pine CM, Burnside G, Nicholson JA, Chesters RK, & Huntington E. A randomised controlled trial of the efficacy of supervised toothbrushing in high-caries-risk children. *Caries Research* 2002;36:294-300.

5 Pine CM, Curnow MMT, Burnside G, Nicholson JA, & Roberts AJ. Caries prevalence four years after the end of a randomised controlled trial. *Caries Research* 2007;41:431-436.

6 Davies G, Bridgman C. Improving oral health among schoolchildren – which approach is best? British Dental Journal 2011;210:59-61.

7 National Institute for Health Research. Health Technology Assessment Programme. Details of HTA project in progress. Seal or Varnish? A randomised trial to determine the relative cost and effectiveness of pit and fissure sealants and fluoride varnish in preventing dental decay Available at: http://www.hta.ac.uk/project/2202.asp

8 Welsh Assembly Government (2006) Eradicating Child Poverty - Measuring Success.