The battle to make prevention central to dental care

In the first of a two-part series examining fluoride varnish, **Caroline Holland** looks at how preventive dental care for children and young people has evolved.

When the 'Delivering better oral health' (DBOH) prevention toolkit[1] (Box 1) was first published in 2007, it set a new standard for public health dentistry. Topical fluoride varnish was a recommended intervention, along with advice on diet, toothbrushing and regular visits to an oral health care professional.

Numerous research papers were published supporting the efficacy of fluoride varnish (FV), with the seal set by the Cochrane Collaboration's 2013 review[2] and its inclusion in DBOH. By 2009, the advice[3] was that FV application should be an integral part of caries preventive programmes.

The introduction of training for Extended Duties Dental Nurses in the application of FV appeared to herald a new era: an army of dental care professionals could deliver preventative oral care while dentists provided restorative treatment for which they are trained. The aspiration was, and is, that all UK children would have access to FV treatment, at least once a year.

From the outset there were barriers: professional, organisational, and financial. A survey[4] of dental nurses trained at King's College Hospital NHS Trust showed that while 97% of respondents thought the certificate in fluoride application had been positive for their career and were confident in delivering the service, there were issues around consent, insurance and lack of consultant oversight. In 2016 Sara Hurley, England's Chief Dental Officer (CDO), sought to clarify matters with the publication of an 'avoidance of doubt' letter.[5]

Fluoride varnish has been applied to millions of children. When it is part of a targeted programme, fluoride varnish will deliver the largest oral health gain. In Scotland and Wales, both small nations where prevention programmes were prioritised and funded, fluoride varnish was part of a package of interventions. Reporting on the impact of such programmes has been clear and cogent, an example being the annual summary from the Welsh Oral Health Information Unit.[6]

Professor Gail Douglas in an eloquent web summary[7] of Childsmile for the European Organisation for Caries Research (ORCA), praises the cost-effectiveness of preventing dental decay versus treating it. A study published on the open access platform PLOS One[8] found that in the eighth year of the Childsmile toothbrushing programme, the expected savings were more than two and a half times the costs of its implementation. Childsmile in Scotland and the Designed to Smile programme in Wales showcase what can be achieved.

Simply applying FV to all children, however, will not necessarily reduce the total of decayed, missing or filled teeth (DMFT). For instance, a study[9] of nursery age children in Scotland showed that FV had a non-significant effect. So, FV needs to be one option in a comprehensive, targeted and fully thought-through programme.

Dr Barry Cockcroft, CDO at the time DBOH was introduced, and Sara Hurley's predecessor, said: 'We always said that it needed a combination of actions to improve oral health, advice on diet, toothbrushing with a toothpaste with the correct amount of fluoride, application of fluoride varnish and regular visits to an oral health care professional. Just doing the right things in these areas, compared to not, reduced caries by about 40%.'

Oral health in England

In 2012, when local authorities in England were made responsible for public health in their area, a comprehensive prevention programme became harder to achieve. At national level, guidance was provided by Public Health England (now replaced by

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the Office for Health Improvement and Disparities) which established the Child Oral Health Improvement Programme Board and it was the role of primary care commissioning teams to fund and commission dental services.

Former CDO Sara Hurley attempted to circumnavigate the challenges with her own initiatives, Smile4life to improve access and Starting Well to improve children's oral health and reduce inequalities. What happened? Was the pandemic fatally disruptive? Or do these schemes need ring-fenced funding?

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When judiciously targeted programmes are driven by committed dentists for whom funding has been made available, they tend to be successful. The In Practice Prevention scheme[10] set up by Yorkshire and Humber Local Dental Network and led by training programme director Simon Hearnshaw, with dental nurses providing the frontline care, reached an impressive 17,000 children. Simon believes flexible commissioning schemes of this kind are an effective way to reduce inequalities as well as to empower the dental team.

It's fascinating to note that in the most recent attempt to reform the 2006 dental contract[11] the number of fluoride varnish applications declined. The results[12] from the prototype practices showed that in the financial year 2018–19 there was a decrease in courses of treatment in which best practice prevention was provided while in non-prototype contracts there was an increase in fluoride varnish application among adults.

Contract protypes

Dr Ben Atkins was one of the dentists involved in the attempts to move dental provision towards prevention rather than repair – leading a contract pilot practice between 2011–2016 and a prototype contract between 2016–2018. He and his team at Revive Dental Care in Salford devised what he describes as a turnkey system; in order for patients to access the treatment they wanted, they first had to demonstrate they were ready to take care of their oral health.

This was the reason, Ben believes, that FV application in children decreased in the prototypes. 'For me, fluoride varnish alone is misleading. The really key part of our work was behaviour change. If the patient did not brush their teeth or was still eating loads of sugar, fluoride varnish will not work.'

His dental nurses were trained to deliver much of the programme and patients responded well. According to Ben, patients understand that funds are limited, and they accepted that the treatment they needed would be delayed until they had adopted a successful oral health regimen at home.

He says he was furious when it was announced that the Department of Health would not proceed with a new model of dentistry, persisting with the despised UDA system instead. 'We were making the prototype work. We were improving access by seeing an additional 120 patients every month. I had devoted nine years to operating both the pilot and the prototype. I sold my practice and walked away.'

Summary

Dental commentator and former dentist Michael Watson is not surprised by the turn of the events. From the outset of the NHS, while GP and hospital services were set up so that everyone would have access to medical care, dentistry, pharmacy and optical services were treated differently. Dentistry was a restorative service, with dentists paid for the treatments they delivered – mostly amalgam fillings. Despite a strong conviction that preventive care is the future, says Michael, the payment system has continued to fund intervention only, and measurable intervention at that.

Dentists like Ben Atkins, who worked for the NHS in the best interests of both patients and the Treasury, were ultimately frozen out. Behaviour change was not a box that could be ticked. Interestingly, an extensive behaviour change section has been included in the most recent DBOH update.[13]

Prevention was already gaining currency in the 1980s but it took DBOH for it to be enshrined as best practice. Sixteen years ago, fluoride varnish application – delivered by an army of extended duties dental nurses – appeared to be at the forefront of the battle against dental caries. Today, the picture is far more complex.

Part 2 will examine how the wider dental team can bring preventive dentistry into the mainstream as well as out into community settings and how this might help reduce inequalities.

Box 1 DBOH

DBOH[1] was initiated by the British Association for Community Dentistry (BASCD) under the leadership of Sue Gregory, with the support of the Department of Health and Social Care and the NHS.

Fluoride varnish has been a recommended intervention in all editions:

'Fluoride varnish is one of the best options for increasing the availability of topical fluoride regardless of the levels of fluoride in any water supply. This should happen when a child visits a dental surgery and is strongly recommended. The dental caries-preventive effectiveness of fluoride varnish in both permanent and primary dentitions is clear. Several systematic reviews conclude that applications twice a year produce an average reduction in dental caries increment of 37% in the primary and 43% in the permanent dentition. Much of the evidence of effectiveness is derived from studies which have used sodium fluoride 22,600 ppm (2.26% NaF) varnish for application.'

DBOH has been updated several times since is first edition in 2007. Now in its fourth edition, it is in a digital format so it's more accessible on mobile phones. For the first time, patients were involved in the work to update the toolkit.

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