

# Summary of: The relationship between oral health risk and disease status and age, and the significance for general dental practice funding by capitation

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## VERIFIABLE CPD PAPER

### FULL PAPER DETAILS

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**Aim** The aim of this paper was to review the oral health and future disease risk scores compiled in the Denplan Excel/Previser Patient Assessment (DEPPA) data base by patient age group, and to consider the significance of these outcomes to general practice funding by capitation payments. **Methods** Between September 2013 and January 2014 7,787 patient assessments were conducted by about 200 dentists from across the UK using DEPPA. A population study was conducted on this data at all life stages. **Results** The composite Denplan Excel Oral Health Score (OHS) element of DEPPA reduced in a linear fashion with increasing age from a mean value of 85.0 in the 17–24 age group to a mean of 72.6 in patients aged over 75 years. Both periodontal health and tooth health aspects declined with age in an almost linear pattern. DEPPA capitation fee code recommendations followed this trend by advising higher fee codes as patients aged. **Conclusions** As is the case with general health, these contemporary data suggest that the cost of providing oral healthcare tends to rise significantly with age. Where capitation is used as a method for funding, these costs either need to be passed onto those patients, or a conscious decision made to subsidise older age groups.

### EDITOR'S SUMMARY

When we published a previous paper on the Denplan Excel/Previser Patient Assessment (DEPPA)<sup>1</sup> I observed in an Editor's Summary that this provides us with a tool '...not only to use in a daily, pragmatic and systematic way but also now with a centralised data recording system and cross validation against the most recent Adult Dental Health Survey.' I am pleased therefore to be writing this Editor's Summary on a follow-up research paper that has emerged with creditable swiftness from precisely that application, namely interrogation of the database.

The conclusion of this paper is that as older people form a larger percentage of the UK population and as more of them retain more natural teeth, some with complex restorations, so the cost of maintaining their oral health will also increase. This is not particularly new or revolutionary but what this analysis of the data additionally presents us with is the question of how best that increase in costs should be funded.

While this work is based on a sample taken from non-NHS care, the broad messages emanating from it are likely to be similar across the population as a whole and therefore to have similar financial repercussions. The resulting question posed is whether the cost of that care should be borne by the older cohort of patients themselves in the form (in this instance) of increased monthly payments or whether it should be spread across others in the payment scheme. In the wider NHS context this would presumably equate across all tax payers by appropriate weighting; whatever 'appropriate' might be deemed to mean politically and financially.

The paper raises an issue which can be debated in other sections of the journal as well as elsewhere but what is crucial to note is the value that data of this type have in what is in essence a type of actuarial exercise. Being able to assess and more accurately predict the financial impact of the likelihood of particular outcomes permits much greater flexibility in planning which translates into better

opportunities to provide good patient care and oral health. The collection and use of such data should be deemed essential for all future contractual and organised oral healthcare systems.

The full paper can be accessed from the *BDJ* website ([www.bdj.co.uk](http://www.bdj.co.uk)), under 'Research' in the table of contents for Volume 217 issue 10.

Stephen Hancocks

Editor-in-Chief

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1. Busby M, Matthews R, Chapple E, Chapple I. Continuous development of an oral health score for oral health surveys and clinical audits. *Br Dent J* 2014; 216: E20.

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**IN BRIEF**

- Oral health tends to decline with age and can place a great burden on dental practices caring for older age groups.
- An algorithm for recommending capitation fee bands which map these trends is available.
- Capitation payments can be designed to fund care across a broad range of oral health and future disease risk.
- Planners of care funding must subsidise the care of those in greatest need.

**COMMENTARY**

Busby *et al.* found that 'generally, with some exceptions, the oral health needs of general dental practice patients increase with age' – a situation which will become all the more apparent as those belonging to the 'heavy metal generation' live longer, retain more teeth throughout life, and require treatment of increasing complexity. This finding has important implications. On the funding front, whatever scheme of oral health-care provision is considered, there is the issue of increasing treatment costs with advancing age, and at whose expense such costs should be met. Other implications include quality of life issues, the need for innovation in minimal intervention procedures capable of maintaining the functionality of the dentition in old age, and the need for arrangements to involve the dental team in the shared care of older patients. Hi-tech, costly solutions will confound rather than resolve the challenges.

In considering the significance of their findings for general dental practice funded by means of capitation, Busby *et al.* conclude that 'it will be interesting to see how any new payment scheme in the NHS copes with the age-related resource challenges ...' These challenges are part of the 'big picture' challenge facing the NHS if it is to continue to provide a comprehensive care, free at source for a population which is growing and ageing. As Busby *et al.* comment: 'Contemporary evidence now suggests that the age-related pattern of oral healthcare costs is likely to be similar to those for general healthcare', with 'half of all lifetime healthcare costs... incurred during the "senior" years.' Could initiatives to promote prevention and behavioural change amongst older

individuals address the new challenges, or will the viability of any new payment scheme for NHS dental care be threatened by growth in the oral health needs of older patients?

An important aspect of the Busby *et al.* findings is the part played by declining periodontal health on the deterioration in oral health with age. While not considered by Busby *et al.*, the decline in periodontal health with age will add to the burden of chronic non-communicable diseases in older individuals.<sup>1</sup> Perhaps children, when being schooled to maintain good oral hygiene, should, in the interest of limiting the health-care costs they will have to shoulder as future tax payers, be encouraging their parents to 'practice what they preach'.

Finally, Busby *et al.* found 'less than one fifth of the over 75's expressing any concerns about their dental appearance'. This may well change when the 'lighter, brighter smile' generation ages, with a surge of interest in the new concept of 'anti-ageing dentistry'.

Professor Nairn Wilson

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1. Chapple I L C, Wilson N H F. Chronic non-communicable diseases. *Br Dent J* 2014; **216**: 487.

**AUTHOR QUESTIONS AND ANSWERS****1. Why did you undertake this research?**

The DEPPA database affords a unique opportunity to conduct population studies on a wide range of oral health states and future disease risk-related factors. The Oral Health Score (OHS) is a validated and composite measurement of oral health. With the DEPPA database we can not only report on the composite measurement but also on the eight constituent aspects of oral health separately. So, we had an opportunity. We felt that age trends in oral health were becoming more important to understand as we move towards treating an increasingly elderly population in general dental practice. The Adult Dental Health Survey (2009) indicates that the care burden in general dental practice will tend to increase as patients age. We wanted to establish whether this was happening in the group of patients being assessed with DEPPA in general practices. We also felt that it was important to confirm that the fee code recommendations generated in DEPPA did map to any increasing current need and future risk identified as we move up through the age groups.

**2. What would you like to do next in this area to follow on from this work?**

As explained above the opportunity exists with DEPPA to investigate a wide range of issues. We are now beginning to investigate the relationship of reported cigarette smoking in patients assessed with DEPPA and their oral health. We will be paying particular attention to periodontal health in this study. However, early work on this has revealed that only about 9% of this group continues to smoke cigarettes leaving 91% as never smokers or quitters (more than 20% of the general population is reported to smoke). We are also planning to investigate patient perceptions and reactions to DEPPA.