Summary of: Factors influencing patients' continuing attendance at a given dentist

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Aim It is the aim of this paper to consider the factors associated with a patient's continuing attendance at a particular dentist's surgery. **Methods** A data set was established consisting of General Dental Services' (GDS) patients whose birthdays were included within a set of randomly selected dates, 20 in each possible year of birth. The data set was restricted to those patients aged 18 or older in 2003 who attended only one dentist in only one postcode area in 2003, and who also attended only one dentist in the same postcode area in 2005, and where the dentist attended in 2003 was also practising in the same postcode area in 2005. The patients were classified by age, gender and charge-paying status, and by whether they had attended a GDS dentist in 2002, and the dentists attended in 2003 were classified by age and gender. The proportion of patients changing dentists between 2003 and 2005 was calculated, together with standard error (se), for each combination of these factors. This was then replicated for each year from 1993–2002. **Results** Data for 323,382 patients were included in the analysis for 2003, these patients having not changed address during a two-year period, nor had their dentist changed location. The proportion of patients changing dentist over the period 2003 and 2005 was 15.5% (se 0.06 PCT). This has increased steadily since 1993, when the proportion was 12.4%. **Conclusions** Factors influencing whether a patient changes dentist include patient age and charge paying status, dentist age and gender, and the patient's previous attendance pattern.

EDITOR'S SUMMARY

Computing power, memory, data – our capacity is changing all the time. To put it into perspective, the computers which sent the first men to the moon were less powerful than today's USB memory stick which might be given as a freebie at a conference. Indeed, the Apollo 11 guidance computer was more basic than the electronics in modern toasters.

We now have the capacity to store vast amounts of information and collect exabytes of data but to what end? This paper demonstrates that this 'big data' can answer some important, practical questions in dentistry – such as, what makes patients continue to attend a particular practice and dentist?

Big data in dentistry provides us with endless possibilities; for example, we could reliably measure the success of materials and techniques, as well as patient outcomes, attendance and perception. In this article the authors analyse a data set of over 300,000 general dental services' patients to determine the factors which influence a patient to change their dentist or to stay with a dentist.

The authors had to consider a data set of 25 million courses of treatment over a 15-year period, from 1991 to 2006. To me this is certainly 'big data'. Indeed, it is the largest dataset on dental treatment ever to become available for interrogation, and we are lucky to be publishing the first paper describing work on it in this Journal.

But the excitement of 'big data' aside, what does this research actually tell us that is new? Obviously you will need to read the paper to get the full story but in essence it shows us that the patient's age and paying status coupled with the dentist's age and gender all affect the 'loyalty' factor. As the authors themselves state: 'every dental practice needs a regular patient base' and they hope that this paper 'will help provide some pointers regarding how to achieve this'.

In recent years there has been much press about the increase in goodwill values of dental practices. Rightly or wrongly, it is a fact that practice prices are strongly linked to goodwill. This, of course, is related to patient loyalty. Thus, with so much apparently riding on goodwill and loyalty factors at the moment, the results of this paper are important for practice principals and associates alike. The fact that these results are based on such a large data set makes it all the more reliable.

In this case it's not just a case of 'further research is needed', but rather that so much further research looking at many different questions is possible on this large dataset. How exciting...

The full paper can be accessed from the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 218 issue 6.

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IN BRIEF
- Reports that 15.5% of patients changed dentist between 2003 and 2005.
- Highlights that the proportion of patients changing dentist has increased steadily since 1993.
- Reviews factors influencing patients changing dentist, such as patient age, charge paying status, dentist age and gender.
- Explains that the patient's previous attendance pattern is also a factor when patients changing dentist.

COMMENTARY

This paper by Burke and Lucarotti raises a number of important issues relating to stability, managing change and the use of big data in dentistry.

The importance of stability: Many patients have a stable relationship with their dentist, but the evidence suggests that this is becoming less common. This research is based on the premise that regular dental attendance,[1,2] and avoiding changing dentist,[3] are good for your oral health. However, it is perhaps only helpful if patients are receiving contemporary evidence-based care, including support for behaviour change.[4] Achieving stability may be more difficult in the future with the emerging pattern of dental service provision by large corporations and others. Increasingly, dental professionals won't invest financially in practices and will therefore have greater flexibility to move for professional or personal reasons. Furthermore, population movement is increasing so change will need to be managed in support of patient health.

Managing change: There was greatest change where dentists were young and female, or older in the latter stages of their career. This is not surprising but acts as a reminder that it is incumbent that we provide for our patients, manage their expectations and ensure their care is handed over appropriately as an important feature of quality care. As we move towards team dentistry, perhaps some of the dental team may remain stable at practice level and thus provide continuity?

Big data: Routinely collected health service data are an important knowledge resource, and analysis should be used more often as a mirror for dental professionals to make us reflect on our relationship with patients. Ideally this should be national and regional, since areas such as London have high mobility, the implications of which will be important to examine in detail. We need to better understand the longer term implications of our clinical care. Furthermore, as we increase the skill-mix of the dental team, information on all workforce providers involved in a course of care will be important to record and this is increasingly possible at provider level.[5]

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AUTHOR QUESTIONS AND ANSWERS

1. Why did you undertake this research?
A new database, derived from NHS payment data, has been established and is available at SN7024, from UKDataService.ac.uk. This contains anonymised longitudinal data on patients attending the General Dental Services in England and Wales (UK), with over three million different patients, and over 25 million courses of treatment between 1990 to 2006. This permits not only in-depth analysis of survival of restorations of all types and sizes, but also of other matters such as that investigated in the present paper, this being something which was not possible to analyse on previous data sets and a subject which was considered by the authors to be of relevance to UK general dental practice.

2. What would you like to do next in this area to follow on from this work?
A wide variety of future analyses can be made possible by the massive data available for analysis in this data set; this being the largest ever created for dental research. Not only will this include all the factors which may influence survival of restorations and teeth, something which may be considered to be of importance to clinicians, patients and third party funders alike, but an upcoming analysis will include the factors which may effectively predict the need for future treatment need. Indeed, is previous treatment (long considered as a predictor) actually the best predictor? If so, what elements of treatment history are most important? By being able to follow the patients and the treatments in the data set for such a long period of time (15 years), such analysis has been made possible.