

Summary of: How long do direct restorations placed within the general dental services in England and Wales survive?

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FULL PAPER DETAILS

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Aim It is the aim of this paper to consider the factors associated with the need for re-intervention on direct-placement restorations placed within the general dental services of England and Wales. **Methods** A large age-stratified sample of adult patients and their dental intervention were tracked over 11 years to December 2001. For each tooth treated with a direct restoration the subsequent history of intervention on that tooth was consulted, and the next date of intervention, if any could be found in the extended data set, was obtained. The distribution of times to re-intervention for different types of restoration in different circumstances was obtained using Kaplan-Meier survival analysis. **Results** Data for over 80,000 different adult patients were analysed, of whom 46% were male and 54% female. A total of 503,965 restoration placements were obtained from the data over a period of 11 years. Single surface amalgam restorations were found to have the longest survival – 58% at ten years, and glass ionomer the shortest – at 38% at ten years. **Conclusions** Small amalgam restorations have longer survival times before re-intervention than large amalgam restorations such as MOD. Composite and glass ionomer restorations perform less well than amalgam restorations. Restorations placed by older dentists and restorations placed in older patients have shorter time to re-intervention. Patients who changed dentist were found to have restorations which performed less well than those placed in patients who did not change dentist.

EDITOR'S SUMMARY

One of the great strengths of this paper is also a great sadness. In a world that is increasingly thirsting after evidence on which to base good practice the fact that this research has been based on comprehensive data over an eleven year period makes it a valuable resource. The sadness is that the data, formerly collected by the now defunct Dental Practice Board, is no longer kept due to the current local commissioning of dental services in England. It is to be regretted that such a rich source of information based on real activity rather than on surveys, samples or estimates will no longer be available for future researchers. All the more reason to glean as much as we can from this work to help guide our future decisions and interventions.

To some extent the findings are not surprising and yet their value is contained partly, as with so much research, in the questions that they pose as much

as the questions they answer. For example, the fact that restorations placed by older practitioners and those placed in older patients survive less well begs any number of questions associated with size and position of restorations, oral health and dental care delivery system to mention just some.

Underlining the value of such work in informing a variety of areas within dentistry and health, the findings may also help enlighten the ongoing amalgam debate. Since amalgam fares better than its more modern composite and glass ionomer counterparts in terms of longevity, any decisions taken to ban it have to be taken with this knowledge in mind. As has been pointed out so often the balance between cost, direct or environmental, and health is a very difficult one to judge but it is also important to factor in that having a non-amalgam filling potentially subjects the patient to a greater number of future operative interventions.

The demise of a service is often disappointing, the loss of the data gathering function that allowed this paper to report so authoritatively is a matter of particular regret.

The full paper can be accessed from the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 206 issue 1.

Stephen Hancocks,

Editor-in-Chief

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IN BRIEF

- The interval to re-intervention on a tooth provides a measure of the survival of a restoration.
- Large amalgam restorations survive for shorter periods of time than single-surface restorations, of which 58% survive without re-intervention at 10 years.
- Of directly-placed restorations, glass ionomers perform least well.

COMMENT

Papers on the long-term performance of a meaningful sample size of restorations placed in the primary care setting are important, but unfortunately relatively few and far between. A paper which reports on data obtained in respect of >500,000 restorations placed over a period of 11 years is, as a consequence, of particular significance. This paper by Burke and Lucarotti, which summarises previously published data on the survival of direct-placed restorations, provides objective evidence to support and, in some cases, dispel long-held views in respect of the performance of restorations. While it is concluded that composite and glass-ionomer restorations perform less well than amalgam restorations, it is important to note that amalgam restorations would have been placed predominantly in load-bearing situations in posterior teeth, composite restorations predominately in Class III (anterior proximal) and Class IV (anterior proximal incisal) cavities and glass-ionomer restorations predominately in Class V (cervical) cavities.

The other main conclusion that restorations placed by older dentists, and restorations placed in older patients survive less well is, as the authors state, a finding requiring fuller analysis. On the face of it, however, these findings open up a number of lines of investigation which could have interesting ramifications. Notwithstanding the inherent limitations in the methodology, as acknowledged and discussed by the authors, this paper and related

publications are invaluable in terms of future planning, spanning the spectrum of oral health provision and dental education at all levels. It is a matter of regret that the new dental contract provisions may preclude the collection and subsequent analysis of data of the type reported in the present paper. Being able to report on the performance of >500,000 restorations over a period of 11 years is remarkable.

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

We undertook this research since it seemed relevant to provide an indication of restoration survival within the (old) GDS in England and Wales. The database offered a unique opportunity to do this, given the detail available and the long period of time covered.

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

Assessment of the survival of indirect restorations has been completed. The survival of bridges, with comparison of different types and designs, could be considered appropriate.