AESTHETIC UPDATE

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Using technology to reduce the costs of dentistry

Australian industry has undergone significant restructuring over the last two years. Established procedures have been extensively reviewed and revised to simultaneously improve quality and reduce costs in every field of business enterprise.

During this time the professions have watched nervously from the sidelines, casting around for reasons to resist change based on unsubstantiated perceptions of community benefits and standards of practice. Federal and State governments are moving at increasing rates to coerce restructuring amongst the professions, using such vehicles as the Trade Practices Act and the removal of legislative restrictions that have denied the professions' access to conventional business processes.

The future relevance of the professions as leaders in their fields of expertise requires both continuing research and internal restructuring to meet the demands of quality and cost efficiency that the public have come to expect from the professions that serve them.

Dental implications

The dental profession has experienced a series of technological breakthroughs over the past decade. Advances in adhesion, osseointegration, tissue-guided regeneration and maxillofacial surgery have left many dentists in awe of each new wave, and often distract from the real day-to-day issues of dental care.

The effects of these technologies have largely been to increase the complexity of dentistry rather than simplifying it. Whilst there are a few fortunate individuals with the resources to benefit from these initiatives, they are neither relevant or practical for the majority of the community who continue to view dental care as 'expensive' in the overall goods and services mix provided to society.

Furthermore, many of the new dental technologies require increasing levels of biological invasion, high set-up costs and complex infrastructures to achieve their outcomes: processes that are inconsistent with society's contemporary expectations of dental care.

The successful future of dentistry requires the use of technology to initiate changes to improve the quality and efficiency of dental services while simultaneously reducing the biological, fiscal and emotional costs of providing them.

Biological costs

Prevention and control of dental diseases have possibly been the major social contributions by the dental profession this century. It is to dentists' credit that dental health education and water fluoridation initiatives have been undertaken without regard for the financial consequences of such activities. The outcomes of these initiatives have led to a community with an increased awareness of dental health and a perception of the benefits of a healthy dentition that can be maintained throughout a lifetime.

Diagnosis confronts dentists with the most difficult of clinical decisions, and the ever increasing range of options available to deal with dental problems often confuse rather than facilitate the diagnostic process.

The philosophy of minimum intervention dentistry may be realised through adhesive techniques that require little if any tooth preparation, and may represent significant biological savings in both the reparative and discretionary aspects of dental care. Advances in the physical and biological properties of adhesive restorative materials challenge dentists to seek increased clinical applications for these materials that will continue to replace other more invasive techniques.

A recent Letter to the Editor in *Quintessence International* draws attention to the over-diagnosis, and over-prescription of implants to replace a single missing tooth. While such a procedure may be indicated in some circumstances, the high biological and fiscal costs associated with this process requires the fullest consideration of less invasive options. A bonded composite ►


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bridge replacing a single tooth will often fulfil the functional and aesthetic requirements of a patient whilst leaving maximum future treatment options available. Figures 1 and 2 show the results that can be achieved with a direct, bonded resin bridge that requires no tooth preparation, no laboratory costs and provides a patient with a functional and aesthetic prosthesis for a fraction the cost of other alternatives.

Tunnel restorations are a further example where dentists are able to effect savings biologically, because of reduced tissue removal, and fiscally, because of the reduction in clinical time required to place such a restoration compared to a conventional Class II type technique (Fig. 3).

The identification of minimal intervention dentistry as an optimal mode of practice should become the focus of future materials and clinical research.

Fiscal costs

The reduction of fiscal costs requires improvements in efficiency in both the clinical and practice management aspects of dentistry.

As restorative materials become more user friendly, and reduce the reliance on indirect procedures, dentists can expect improvements in productivity and reductions in overhead costs. Initiatives such as 3M's Dental Electronic Anaesthesia System will enable dentists to achieve immediate anaesthesia in the anterior segments of the mouth, thus creating increases in productivity, and high acceptance due to the ability of patients to personally manage their discomfort by a non-invasive anaesthesia technique that is without uncomfortable after effects (Fig. 4).

Infection control is an area where technological initiatives are required to reduce the high costs of disposable equipment, and instrument sterilisation. Manufacturers must be strongly lobbied by the profession to produce cost reductions in this area.

Computers offer real opportunities for improvements in office efficiency. Whilst the trend of reducing costs and increasing capacity continues, successful practices are becoming more dependent upon them not only for accounting and informational retrieval, but as a communication, forecasting and marketing tool. Improvements in efficiency enable a fee reduction that has the potential to increase the primary dental market as cost resistance barriers are lowered, encouraging more people to seek dental care.

Dentists should be aware that whilst efficiency improvements may be passed on without reducing profit, a drop of 10 per cent in fees in a practice with 70 per cent overheads without productivity increases, is a profit reduction of one-third.

The technologies of communication may be utilised to further increase practice utilisation through a corporate marketing programme to create a 'top of the mind awareness' amongst the community for routine dental care to become an established social norm, with aesthetic dental services constituting part of the option mix when a discretionary spending decision is being contemplated.

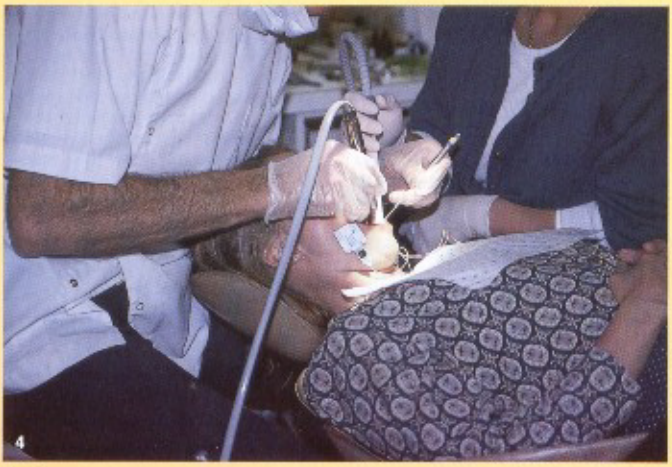
Emotional

Every dentist is aware of the high stress levels associated with the practice of dentistry. There is an opportunity for technology to reduce this stress by focusing on simplifying the delivery of dental care, increasing its predictability, and minimising the consequences of failure.

Productivity increases create an opportunity for dentists to increase their incomes and reduce their fees without adding to overhead expense, thus reducing the increasing financial burdens associated with running a practice, and the costs to the community of dental care.

Conclusions

The current economic climate has forced industry into a process of restructuring and efficiency improvements. It is only a matter of time before governments and the community force the professions to adopt similar efficiencies. There is an opportunity for the dental profession to pre-empt this drive and achieve these goals with minimal disruption, by focusing on technological research to substantially reduce the biological, fiscal and emotional costs of dental care.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