The changing role of dental auxiliaries: A literature review

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Abstract
A review of the literature on dental auxiliaries and their utilization in the dental workforce is presented, and their future role is examined in the light of broader issues relating to changing disease patterns and service delivery. Legislative factors, productivity, quality assurance and the potential scope for dental auxiliaries in both the public sector and private practice setting are discussed. A strategy for adopting a team approach in the delivery of dental services is suggested, which would necessitate the dentist taking on the role of team leader and maintaining responsibility for overall treatment planning and quality assurance. Dental auxiliaries could provide basic preventive and restorative dental services, allowing dentists to concentrate on providing more complex high-technology treatment. Implications for the future training of dental auxiliaries are presented.

Key words: Dental auxiliaries, service delivery, legislation, productivity, quality assurance, team dentistry.

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Introduction
The management of dental caries and periodontal disease has been the major focus of dentists and dental auxiliaries in the 20th century. However, changing disease patterns in the last few decades have resulted in the need to review some broader issues in dental service delivery, including decisions on the appropriate utilization of dental personnel in the workforce, and the type of skills mix required by members of the dental team.

Epidemiological factors
In Australia, as in most other industrialized countries, there has been a dramatic decline in caries in children and adolescents, with high caries experience now affecting a minority of the younger population. This decline in caries activity has been attributed to increases in preventive measures such as the widespread use of fluoridated toothpaste, fluoridation of public water supplies, the use of fissure sealants, and changing public awareness.

Although caries experience has not declined markedly in middle-aged to older adults, there have been improvements in the management of the disease experienced in this population, with fewer teeth extracted, and a greater number of teeth filled.

The decrease in tooth loss and edentulism, together with an expanding ageing population, has resulted in an increasing number of people who are retaining their teeth into later life. This sector of the population has more complex dental needs such as multisurface coronal restorations, restorations for root caries and tooth abrasion, as well as an increasing need for dental health education and periodontal care.

These changes have led to a need to redefine the role of each member of the dental workforce, so that appropriate dental services are provided to the community. Barme, in 1987, stated that changes in global disease patterns have resulted in an overall reduction in need for oral health care and a polarizing of that need towards self care and minimal simple intervention on the one hand and high technology care on the other. Considering this polarizations, he suggested it was time to re-address the current dentist to auxiliary ratio in the developed world, with an emphasis on increasing the number of auxiliaries. In the long term, a multidisciplinary approach may be needed with dentists providing more complex high-technology services together with dental auxiliaries, who may provide medium-low-technology dental services for specific groups in the population. Apparently, Australian data have failed to provide evidence for an early shift in practitioner treatment profiles. Obviously, continued monitoring

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of dental services provided will be necessary to determine future directions.

The World Health Organization Expert Committee Report, 1990, on educational imperatives for oral health personnel supports Barmes in his view by stating: ‘Now and in the immediate future, dentists in the highly industrialized countries should be guided, through expanded opportunities for retraining and continuous education, into undertaking more complex technological procedures. The simpler procedures could then be undertaken more economically but equally well by various categories of auxiliary personnel.’ In the Australian context, continued surveillance of treatment modalities is required as this polarization into low- and high-technology care may only become evident after a number of years.

Dental auxiliaries in Australia

In Australia, the principal clinical dental auxiliaries are the dental hygienist and the dental therapist, with dental nurses and advanced dental technicians providing a narrower spectrum of services. While legislation governing activities of these auxiliaries varies from State to State, in general, dental therapists provide restorative and preventive treatment for school-aged children and adolescents within the public sector, whereas hygienists provide a range of services, mainly preventive, within both the public and private sectors. In most States, the auxiliaries work under the direction of a dentist. Western Australia is the only State that currently allows dental therapists to work in private practice but future changes to the various dental acts in response to competition laws may alter situations in other States and Territories.

Service delivery factor

The potential for expanding the role of auxiliaries has provided much debate in the literature in Australia and other countries. Short alleges that disadvantaged groups within the community could be more effectively targeted by auxiliaries. This viewpoint is supported by the Nuffield Foundation, with particular emphasis on the provision of services for patients with special needs due to illness or disability. In the United Kingdom, for example, a proposition for hygienists to be utilized not only to provide periodontal treatment in the general private practice setting, but also to provide treatment to elderly or disabled patients through domiciliary visits, was put forward by members of the General Dental Council. Just recently, South Australia has passed legislation to allow dental hygienists to provide preventive oral health care services to patients in nursing homes and places of long-term residential care.

With an increasing demand by the population for more specialized services such as orthodontic treatment, an auxiliary such as the hygienist could also be more widely utilized. Procedures such as taking impressions, removal of archwires or bonded attachments, and provision of instructions on the maintenance of appliances could be provided by such auxiliaries. Yap and Wexler, orthodontists with experience in the utilization of hygienists, have observed that such auxiliaries are valuable in building up a practice, because not only do they leave the orthodontist more time for diagnosis, treatment planning, and performing specialist work, but the hygienist, whose main focus is on preventive services, has more time to spend with the patient to build a rapport and to maintain good oral hygiene.

With the global decline in dental caries there is an increasing number of adolescents and young adults requiring simple restorative services for single surface lesions. Some authors have suggested that consideration must be given for a clinical auxiliary (such as the dental therapist) to work with a dentist, either in a private practice or in the public service setting, to provide treatment for this sector of the population.

This view has support in the profession. A study in England and Wales showed that 40 per cent of general dental practitioners would be willing to employ a dental therapist, if legislation allowed it. Furthermore, it appears that younger dentists are more likely to favour delegating work to a dental therapist than their older colleagues.

The future role of the dental auxiliary

A redefinition of the team through which dental care is to be delivered in the future was the main focus of the Nuffield report (1993) which was concerned specifically with the education and training of auxiliary dental personnel in the UK. The report recommended that there be two principal types of clinical auxiliaries: (1) a new auxiliary termed the oral health therapist should replace the hygienist or therapist, and (2) a clinical dental technician should replace the dental technician, following additional training. The dentist, taking on the role of team leader, would take responsibility for diagnosis, overall treatment planning, and quality assurance.

In Australia, a similar proposal was to be piloted by the Australian Health Ministers Advisory Council (AHMAC), whereby a new clinical dental auxiliary with training beyond the level of current existing auxiliaries would provide certain restorative and preventive services to the adult population in the public sector. This proposal has been met with considerable opposition principally, but not exclusively, from dentists in Australia. Opponents argue that a
two-tier system of dental services would be created within the community, with disadvantaged groups being offered an inferior quality of service. This response has served only to further alienate existing personnel within the dental profession at a time when dentistry should be more focused on a team effort, as is the case with other primary health care providers within the medical profession. The dentist as a team leader could, for example, delegate tasks to a dental auxiliary who is specifically trained to perform those tasks. Dental procedures such as the application of fissure sealants or prophylaxis could be performed by a dental hygienist or a dental therapist, thus allowing the dentist to focus on more complex procedures such as crown and bridge work or endodontics. This approach would inevitably impact upon the current role of dentists in Australia and they may be redirected, either through training or market forces, to work in areas not within the span of dental auxiliaries. These roles would focus on high-technology procedures such as placement of implants or crown and bridge work.

Within the medical profession there is a strong emphasis on health care delivery as a team. In primary health care, skills mix is increasingly becoming the norm with doctors working closely alongside qualified clinical nurses and other auxiliaries such as radiologists, physiotherapists, audiologists and speech pathologists. Mobile intensive care ambulance officers, who are highly skilled in providing emergency life-support and work largely independently of doctors, are well recognized by the medical profession as auxiliaries who provide an essential primary health care service. Although the medical profession has encouraged the development of their auxiliaries, the dental profession appears in many respects to be following a different path. Dentists such as Renson, Mason, Pike, and Linz, suggest that dental services need to be more fully integrated in the primary health care concept by establishing closer links between the dentist, dental auxiliaries and other health care workers. Pike states that in the past there had been a tendency for dentistry to become marginalized from the rest of medicine, in part due to a lack of appreciation of the contribution that the dental profession provides to primary health care, and also due to a lack of integration between the members of the dental team.

Productivity and quality assurance

Both hospital-based and field research shows that dental auxiliaries can provide many services at lower cost and with no loss of quality. A ten year study review by Douglass and Cole showed no variation in the quality of procedures performed by an auxiliary and those performed by a dentist, with three studies showing higher quality in low-technology services, such as application of fissure sealants, when delivered by auxiliaries. Other studies have indicated that many straightforward tasks can be performed more efficiently and more cost effectively by adding an auxiliary to an already existing team of a dental and chairside assistant, with increases in productivity ranging from 30 to 80 per cent. For example, a survey of dental practice in the US showed that there was a linear increase in productivity associated with the utilization of dental auxiliaries. As the number of auxiliaries increases from none to five or more, both the median and mean gross and net income rises, almost in direct proportion. Several other workforce studies suggest that together with increases in productivity and a decrease in operating costs, quality of care was maintained and patient acceptance of auxiliaries was high. The decreased operating costs, due in part to lower wage rates of dental auxiliaries, has the potential to reduce overall out-of-pocket cost to the consumer. Caution should be taken when assuming that the savings made by individuals through reduced provider costs translate to societal costs. Although expansion of the role of auxiliaries is likely to decrease the cost of dental care per unit of care provided, the money spent on dental care may actually increase, following greater availability and access of services with the increased utilization of auxiliaries.

With more emphasis in the future being placed on preventive care, the Nuffield Foundation reported that it is more cost effective to utilize an auxiliary for procedures such as fissure sealant placement, fluoride application, scaling and polishing, for the dual reasons that it takes less time to train an auxiliary, and that there is less cost in maintaining an auxiliary’s salary. Utilization of auxiliaries in this manner would provide support to the dentist and would provide more time for the dentist to concentrate on providing high-technology treatment whilst still retaining responsibility for overall treatment planning and co-ordination of the team. This view is supported by the World Health Organization with the recommendation that ‘a new type of dentist is required, who will be a broadly trained ‘oral physician’ responsible for the continuing care of the orofacial region. These oral physicians of the future will be the leaders of oral health teams concerned with health education, disease prevention and treatment, and maintenance of patients’ health, and will be supported by auxiliaries.’

Additional benefits to the oral health workforce can be achieved through the expanded use of auxiliaries because shorter training times for auxiliaries allow for the workforce to be adjusted more readily to changing needs within the community. However, it is important to ensure that
all auxiliary personnel are trained to a professionally agreed standard, and registered with an approved authority which is accorded mutual recognition between States. It is critical appropriate salaries and career pathways are established so that skilled team members are recruited and remain in the workforce. With the aim of fostering a team approach and a better understanding and appreciation of each health care professional’s role, Grace and Mason maintain that dentists and auxiliaries should be trained together, wherever possible, within the same dental school or hospital environment. According to Grace, the ‘us and them’ approach that still persists in some areas of dentistry is a hangover from the past, and must be removed for the sake of dental patients and the future of dentistry.

Legislative factors

One concern raised by dentists is that the dental auxiliary may work illegally without the supervision of a licensed dentist and that this, in turn, would affect the quality of the auxiliary’s work and create competition between dentists and auxiliaries. As an example, when the possibility that hygienists be allowed to make domiciliary visits to the elderly was discussed in the UK, there was an expression of concern that they would start their own practices independent of the supervising dentists. Another common perception is that expanding roles will follow a change of function. If an auxiliary is taught one aspect of treatment, such as taking impressions, it is possible that they will extend this concept further, believing that they are capable of providing all aspects of that treatment regime, such as construction of dentures.

The concern amongst dentists that auxiliaries will overstep the boundaries put in place by legislation, may conveniently ignore the likelihood that such instances may be related as much to inappropriate delegation by the supervising dentist, as to auxiliaries working outside their legal limits. Another consideration is that duty statements for auxiliaries vary considerably from State to State, and some auxiliaries may find themselves in breach of the State Act when they perform a procedure for which they are trained. The establishment of consistent nationwide legislation for auxiliaries would eliminate these difficulties and would also allow greater flexibility for auxiliaries who wish to transfer to other States or Territories.

Further, definition of what exactly constitutes supervised treatment is not clear. Supervision could range from a dentist needing to be present in the operatory, to generalized guidance from a dentist who is remote from the site. A survey of dentists in England, and a similar survey of New Zealand dentists, showed that the perceived level of supervision required by the dentist was a considerable cause for concern and a limiting factor in the employment of auxiliaries in private practice. Many dentists felt that auxiliaries would require a high level of supervision and this would be disruptive to their own clinical activities. Of greater concern for some practitioners was that patients may feel their dental care was less personalized if auxiliaries were used. However, as Douglass and Lipscombe reported in their review on the use of dental auxiliaries, patient acceptance has been linked to dentists’ acceptance. If the dentist is supportive of the auxiliary’s role, patient acceptance is rarely noted as a problem. They found that consumers were willing to accept more routine procedures from an auxiliary than dentists were actually willing to delegate.

Conclusions

Despite the perceived barriers by some dentists to the increased utilization of auxiliaries, surveys indicate a trend of increasing numbers of dentists willing to employ them in the private practice setting. Many view auxiliaries, such as hygienists, as practice builders who not only increase patient motivation but who also provide a valuable service in the area of dietary counselling, smoking cessation, and oral hygiene instruction. This is not withstanding the considerable potential for their employment in the public sector, particularly in the provision of services for patients with high oral health needs. Although at this stage there is scant evidence for acceptance of auxiliaries, and some care must be taken in making references based upon international experience, there is no reason to suspect the situation would be any different in Australia.

If dental auxiliaries are to be appropriately utilized, dentists must be prepared to adopt a more positive team approach and embrace the role of team leader, with delegation of less complex tasks to an auxiliary who is appropriately trained to carry out that task. This, in turn, will require some changes in the type of work that a dentist performs with an increasing emphasis on more specialized treatment. Furthermore, some careful planning is required for the legislation and career pathways of dental auxiliaries to bring them into line with their medical counterparts. Significant changes have already been achieved by the dental profession in the prevention and treatment of oral disease, with such measures as the use of fluorides, and new technology for the restoration of teeth. The next challenge is to develop a more positive collaboration between members of the dental team so that the wide range of skills available within the dental sector are effectively utilized. As was stated by Nash, ‘Today we must
acknowledge that each professional member of the dental team has a unique role to play, and that each person can play that role better than any other member of the team. The dental profession must strive to become a leader, rather than a follower, in the provision of primary health care. When this happens, dentistry will be able to move confidently, in partnership with the other spheres of medicine, into the 21st century.

References


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