

8 Discussion

The primary aim of this publication was to revise previously published supply and demand projections for dental visits and to assess the impact on those projections if key inputs and assumptions were to alter, either as a result of policy initiatives or changes in existing social or profession-related trends.

Since the publication of dental demand and supply projections in 2003, recruitment of dental practitioners has increased. A new dental school (at Griffith University) and new Bachelor of Oral Health courses have been established. There have been incremental increases in the numbers of students in existing dental schools and substantial increases in numbers of successful ADC candidates. ARCPOH's dental supply projection report (Spencer et al. 2003) recommended a conservative increase in recruitment of 150 dental providers per year. However, the increases cited above, coupled with marginal increases in migration from the United Kingdom and New Zealand, exceed this previous recommendation.

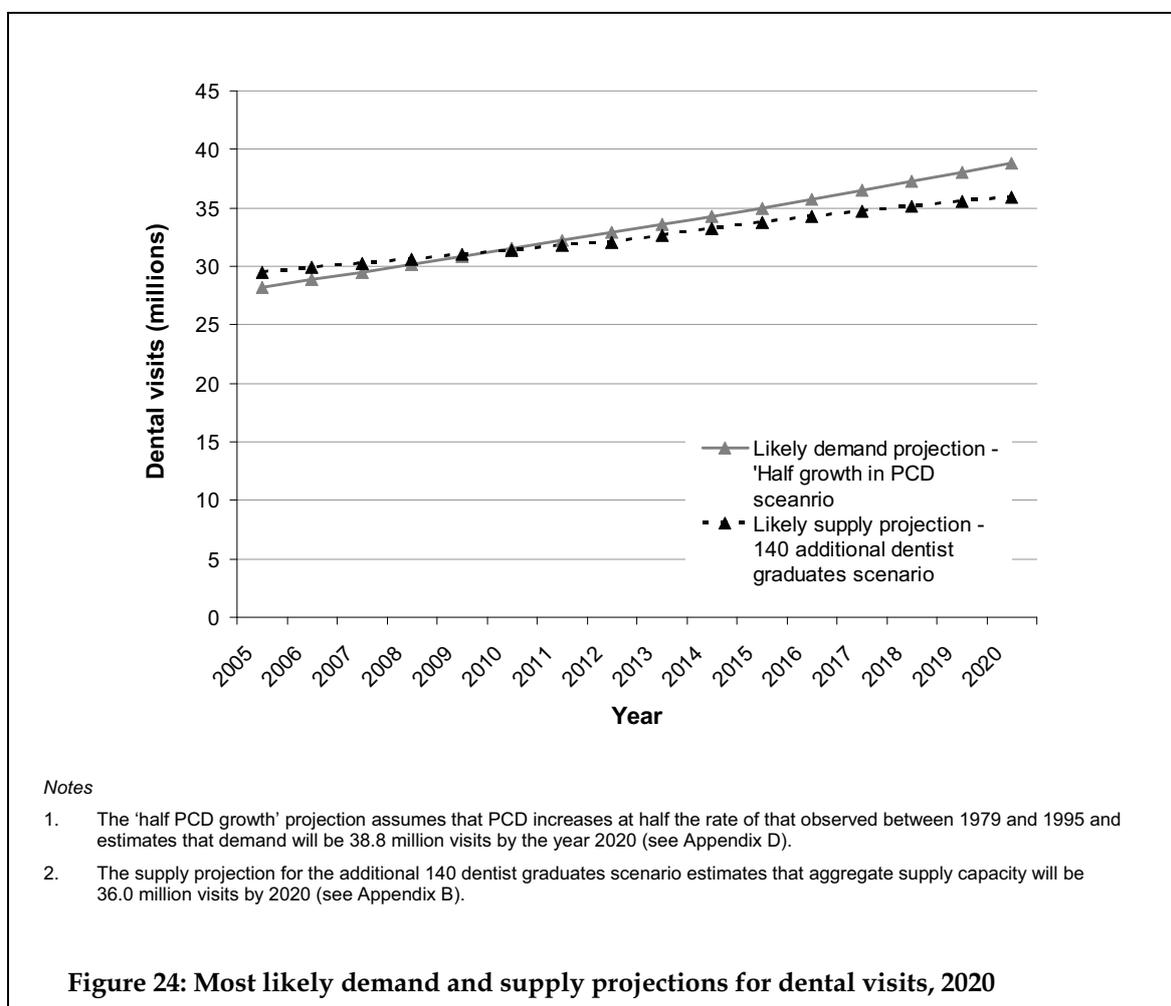
8.1 Revised supply and demand projections

Revisions of both demand and supply projections for dental visits reveal that the projected supply of dental visits under the 'standard' supply projection would adequately meet the demand for visits under the 'no PCD growth' projection. The standard supply projection is based on the assumption that known graduation numbers at the start of 2007 and estimated attrition levels will be maintained and that productivity will continue to decline at half the rate of that previously observed. This supply projection can be considered conservative – the establishment of new BDS and BOH courses were recently announced and numbers of successful ADC candidates are running at levels 50% higher than assumed in the standard supply projection. In addition, assumptions related to declining levels of productivity (in terms of dental visits supplied per annum) have by far the most substantial impact on the supply projections. Actual supply may be quite different to the revised projections if these assumptions under or overestimate future productivity levels. As it appears evident that there will be further increases in recruitment at around 2013, it is likely that supply may be similar to the additional 140 graduate dentists scenario.

The 'no PCD growth' projection assumes that demand remains static and that there are no future changes in patterns of accessing dental care. The 'no PCD growth' projection represents increases in demand due solely to population change and declining edentulism. In a historical context this scenario seems unlikely. Although PCD has remained relatively stable over the last decade, it is the contention of the authors, that this plateau in demand is possibly an artefact of a 'supply infrastructure bottle neck'. That is, growth in demand has effectively been capped by the capacity of the dental labour force to supply dental visits.

It could be argued that a number of the scenarios assessed, such as increased levels of access by older adults, are more likely than the 'no PCD growth' scenario. These and other scenarios provide an underpinning for something like the 'half PCD growth' scenario. Therefore the authors consider that demand in 2020 will approximate the estimate projected under the 'half PCD growth' scenario.

These ‘most likely’ supply and demand projections result in an estimated supply shortfall of 2.8 million dental visits. If PCD continues to grow at half the rate previously observed, then demand will exceed a ‘likely’ supply projection, based on an approximate increase in dentist graduates by 140 per year from 2013 (Figure 24). This equates to an undersupply of 1,000 to 1,100 dental practitioners (on the basis of current productivity levels).



Sensitivity of projections to changes in key inputs

Two aspects of visiting a dental provider influence the PCD for dental visits – the percentage accessing dental care in the previous 12 months and the mean number of visits made by those accessing. The various demand scenarios tested the impact if either or both of these factors were to alter; the resulting projections indicated that demand was very sensitive to differing assumptions of growth in PCD. The greatest impact was observed under the ‘continued PCD growth’ scenario, where demand was assumed to continue growing from 2005 at the same rate as observed from 1979 to 1995.

The supply projection model was most sensitive to differing productivity assumptions and increases in dentist recruitment beyond the standard projection recruitment levels (307 graduates per year).

Changes in numbers of ADC candidates have an immediate impact on supply relative to changes in domestic graduate numbers. The changes in ADC numbers can be

implemented without the lead time associated with training domestic dentists. However, projections based on 150 successful ADC candidates per year would only increase supply capacity by 1.4 million visits in 2020.

The standard projection model appeared least sensitive to changes in attrition rates and increases in allied dental practitioner recruitment.

Overseas migration of dentists

The standard supply projection assumed that ADC candidates would average 100 dentists per year. Although the numbers of successful candidates in recent years exceed this estimate (there were 158 successful ADC candidates in 2006), a more conservative estimate was considered likely as numbers could fluctuate due to domestic or overseas influences.

Relying on recruitment of large numbers of overseas dentists to resolve perceived labour force shortages is attractive as there is a short lead time and no capital is required to expand training infrastructure; however, it can not necessarily be assumed that the current large numbers applying for migration to Australia will continue. The numbers applying are primarily influenced by migration policy, but can also be influenced by world events and the relative attractiveness of Australia as a migration destination.

In addition, migration of dentists to Australia raises ethical concerns, including the draining of skilled labour forces from less developed countries and the restriction of opportunities for Australian school leavers to enter dentistry as a career. For these reasons, it is a stated goal in Australia's National Oral Health Plan to be self-sufficient in supply of the dental labour force (NACOH 2004).

Allied dental practitioners

The supply projections of allied dental practitioners vary by occupational group. The numbers of dental therapists and dental prosthetists are expected to decline slightly over the next decade while the numbers of dental hygienists are projected to more than double.

However, the projections of therapists and hygienists are complicated by several factors. The future practice activity of dual-qualified hygienists and therapists is uncertain. The future scope of practice of hygienists and therapists may change if/when the national registration system is implemented, and there is a possibility that the two occupational groups may merge.

Regardless of the uncertainty around the future occupational roles of therapists and hygienists in the oral health team, there will be more therapists and hygienists overall and their increased numbers will impact on the supply and demand for dental visits. For example, anecdotally it has been reported that when an oral health team is expanded to include an allied dental practitioner, demand for services is effectively increased. Alternatively, the increase in provision of essentially preventive dental services may influence demand for more complex services downstream. These phenomena and the mechanisms behind them have not been studied, and remain areas for research.

Although the projected number of visits supplied by the allied dental labour force is expected to increase substantially, from 5.6 million visits in 2005 to 7.8 million visits in 2020, only those visits without contact with a dentist at the same visit are counted towards the total aggregate dental labour force supply. The reason for this adjustment is that the community report a single visit when they see a dentist and hygienist/therapist, but each supplier counts the visit in their visits supplied. Consequently, primarily as a result of this adjustment, the contribution of the allied dental labour force to total dental visits supplied remains relatively small and varies only marginally across the course of the projection (approximately 12% to 13% of all visits supplied).

8.2 Further issues

There are several issues that need to be examined further. Firstly, what are the longer term implications, especially for the supply projections? The various scenarios for the supply projections only run to 2020, which, for increased dentist graduate numbers as a result of new schools and courses run for only 7 years across the projection period. Longer term projections need to be assessed, even if assumptions become more tenuous.

Second, some disaggregated projections for smaller areas would be appropriate to explore regional situations. This is pertinent to the bids from 'regional' universities to establish dental schools and to service regional needs. The models employed in this set of national projections are limited in their appropriateness for regional analysis, as the small numbers of practitioners in these areas render the projections less robust. Estimation of internal migration is also difficult and the future locality choices made by practitioners graduating from regional universities is uncertain.

Third, there is continued difficulty in estimating the number of full-fee-paying international graduates from Australian universities who may seek to practice in Australia. In the current projections, only graduates with Australian citizenship are counted in the Australian university graduates recruitment component, but it is known that many international students stay on to live and practise in Australia after graduation. Some international graduates may be captured in migration data or return from abroad depending on the timing of gaining permanent residency, but most probably fall outside these inputs. If 50% of international graduates were to end up practising in Australia, this would provide approximately 30 additional dentist recruits per year. Further research is required to more accurately incorporate this group into the recruitment numbers.