PREFACE

The current and future adequacy of the dental workforce is published in two companion volumes. The first is entitled, *Adequacy of Current and Future Dental Workforce.* This is a concise description of many aspects of dental workforce and includes an assessment of future adequacy. The second is entitled, *Adequacy of Current and Future Dental Workforce, Theory and Analysis.* This longer volume, detailing the theoretical foundations of dental workforce analysis, provides numerous findings from technical analyses and includes an extensive compilation of supporting data. This volume contains the most complete data on dental demand and dental workforce that has ever been collected in one document. It can serve as a detailed reference for the subject. Both documents are designed to be read separately. However, readers are urged to read the concise description before delving into the detailed, technical treatment of the subject.

A brief background may be useful to set the historical context for this research and to describe the policy environment that currently prevails. Dentistry is a profession in transition. Many aspects of the profession have changed over the past half a century. Scientific and technical changes are opening new frontiers for the prevention, diagnosis and management of oral diseases. Management of caries has been the economic foundation of general dental practice since the early 20th Century. Due to public health programs, improved oral hygiene and increasing access to modern preventive dentistry, a reduction in the prevalence and distribution of dental caries among U.S. children has occurred since the 1970s. These reductions are now being observed in adults under the age of 55 years. Better diagnosis and treatment options have permeated other areas of dental practice. New approaches are available for the management of periodontal diseases, malocclusion, pulpal disease, and oral soft tissue diseases. Surgical techniques have improved.

Recent evidence has emerged raising the possibility that some oral and systemic diseases can impact each other. To date, this evidence has been primarily correlational; however, in the future, a causal connection could be documented. Oral disease is the fundamental justification for the dental profession. These changes in oral disease patterns as well as inter-relationships between oral and systemic diseases have the potential to profoundly impact the types and numbers of dental profession personnel that will be necessary.

Dental practices are incorporating modern computer technology, both in the front office and in clinical activities. E-commerce and computer-assisted clinical diagnosis are beginning to proliferate into dental practice. Evidence-based treatment planning is developing. The size of the dental staff has been growing. More dental hygienists and dental assistants are being utilized. New roles for oral health professionals are being considered. All of these changes will impact the productivity and character of dental practice.

The U.S. population has grown by over one-half since 1960. Major regional population shifts have occurred and can be expected to continue. The populace is aging and growing more diverse. The standard of living of most Americans continues to improve. We can afford more, and we live better than any previous generation of Americans.

Nevertheless, amongst this general abundance, some Americans still have trouble making ends meet. They do not fully participate in the American dream. This general social stratification has relevance for dentistry because many disadvantaged individuals have difficulty affording and accessing dental care.

These various trends have raised concerns among policymakers, policy advocates and the dental profession about the future adequacy of the dental workforce. The fact that access to dental services and workforce has been joined in the minds of many has added urgency to the debate with the result that calls for a reassessment of all of the issues surrounding dental workforce has become more persistent.

In view of the growing concerns, it is worthwhile to reassess the ability of the dental workforce to adequately and efficiently provide dental care to a population that is growing in size and becoming more diverse. As the workforce debate continues apace, it is important to recall that this is not the first time that concerns about workforce have surfaced; nor is this the first assessment of dental workforce adequacy. The brief review of recent history is instructive.

A useful point to begin a review of modern dental health workforce policy is with the Health Professions Education Act of 1963. The legislation subsidized existing dental schools. It funded the construction of new schools and renovation of existing facilities. The legislation also authorized direct aid to students. All of these provisions were designed to address a perceived shortage of health professionals, including dentists.

Eight years later, the workforce perceptions had changed. Gone were the concerns about a shortage; instead many believed that the nation was moving towards an oversupply of dentists and other health professionals. As a result, the Comprehensive Health Manpower Act of 1971 was enacted. While financial aid to dental schools was continued, the legislation placed stricter provisions on the use of those funds.

By 1976, perceptions had further changed. Concern had shifted from an inadequate overall supply of dentists to concern about their geographic distribution. The result was the Health Professions Educational Assistance Act of 1976. This legislation focused on the distribution of primary care health personnel, including dentists. Schools qualified for funds if they increased first-year enrollments or provided 'off-site' training for students.

As perceptions of a shortage continued to abate, attempts to address dental workforce issues through Federal programs waned. Federal support was gradually withdrawn from dental schools. Over the years, Federal funds declined from about 30% of dental school revenues in the early 1970s to less than one percent in 2001.

The impact of these changes in government funding on dental education and dental practice was profound. The Federal legislative initiatives greatly expanded the number of dental school graduates but had only minor impact on the geographic distribution of dentists. In the later 1970s and in the 1980s, some dentists began to have trouble keeping their appointment schedules filled. Young dentists had difficulty establishing a practice. Dental productivity declined. Nevertheless, the economically disadvantaged and those living in sparsely populated areas continued to have difficulty accessing dental services.

The major expansion during the 1970s and early 1980s was followed by a sharp contraction during which national dental school enrollment declined by one-third and several dental schools closed. These inconsistent enrollment trends resulted in a large upsurge of dental school graduates among the baby-boom generation, followed by a sharp drop in graduates among the following generation. As a result, American dentists are aging. The dentist-to-population ratio is currently declining. These trends are likely to continue as baby-boom dentists retire and the U.S. population grows.

Federal legislation similar to the three Acts just discussed has not occurred since. However, concerns about workforce adequacy and distribution have continued to occupy policymakers and the profession. Since 1983, three reports focusing on dental workforce and education have been produced. The following quotes from those three reports illustrate the vacillation regarding the adequacy of dental workforce since 1983.

From 1983:

"Reduce National Manpower Production Based on: Changing Disease Patterns; Demand and Need for Dental Services; Manpower Availability and Regional Oversupply." Strategic Plan, American Dental Association's Report of the Special Committee on the Future of Dentistry, 1983.

From 1995:

"After reviewing workforce models and projections and their underlying assumptions, the committee found no compelling case, at this juncture, that the overall production of dentists will, in the next quarter century, prove too high or too low to meet public demand for oral health services." Dental Education at the Crossroads: Challenges and Changes, Institute of Medicine, 1995.

Five years later in 2000:

"The dentist-to-population ratio is declining creating concern as to the capability of the dental workforce to meet the emerging demands of society and provide required services efficiently." Oral Health in America: A Report of the Surgeon General, 2000.

In the span of 17 years, these views have gone from an assessment that the workforce may be too large, to an assessment that the workforce is about the right size, to an assessment that the workforce will likely prove too small. This cycle of perceptions and its length are

similar to the cycle of perceptions which occurred between the early 1960s and the late 1970s.

Seventeen years may seem like a rather long time, but a typical dentist will have a career of around 40 years. Thus, dentists who graduated in 1983 are very probably still practicing today. Dentists who graduated in 2001 will be practicing until almost the middle of the century.

A new look at workforce issues should aim to avoid the inconsistent policies of the past which were based largely on untested assumptions of shortage or oversupply. These policies led to a rapid expansion of workforce, only to be followed by sharp contractions. This, in turn, has produced distortions in the age distribution of practicing dentists that continue to this day.

Dental workforce issues are much too complex to be guided by anecdotal data. Simple measures, such as the dentist-to-population ratios, do not capture the multiplicity of factors which affect the adequacy of dental workforce. Instead, dental workforce policy must be grounded in appropriate theory, accurate and representative data, and sound analysis. This approach is the best hope to develop a flexible strategy to steward the human resources of the dental profession.

It is fervently hoped that this report offers an approach to dental workforce, based on data and analysis, that can be used on an ongoing basis to assure that the nation will maintain a dental workforce that can provide the care that the nation needs, wants, and demands.

L. Jackson Brown, DDS, PhD
Associate Executive Director