

Case Study #5: Periodontal Disease: Assessing the Effectiveness and Costs of the Keyes Technique

Richard M. Scheffler, Ph. D.
Visiting Associate Professor of Health Economics
School of Public Health
University of California, Berkeley

Sheldon Rovin, D. D. S., M.S.
Chairperson, Department of Dental Care Systems
School of Dental Medicine
University of Pennsylvania
Philadelphia, Pa.

INTRODUCTION

Of the \$13.3 billion spent on dental care in 1978, approximately \$350 million was spent on treating periodontal disease (10,12). About \$250 million of this was received by periodontists (dentists who specialize in treating periodontal disease); the remaining \$100 million was received by general dental practitioners who delivered periodontal services. ¹

A significant portion of expenditures for periodontal disease is for periodontal surgery. Such surgery can be quite expensive. Two types of periodontal surgery, mucogingival (gum) surgery and osseous (bone) surgery, for example, per quadrant of the mouth often cost the patient

at least \$200 and \$250, respectively (2).²⁻³ In many instances, periodontal surgery is performed on more than one quadrant of the mouth. However, questions about periodontal surgery's effectiveness in treating periodontal disease still remain.

Another technology for treating and preventing the two main forms of periodontal disease is the Keyes technique or rationale.⁴ Currently being tested, this technology is a nonsurgical technique which utilizes oral hygiene measures and plaque (bacterial) control by the patient, supervision by the dentist, inexpensive and readily available chemicals (e.g., hydrogen

¹The \$100 million estimate for general practitioners was derived by multiplying national expenditures on dental care (\$13.3 billion) (12) by 0.78 percent, which is the percentage of total expenditures collected by general dentists for periodontal services (10). The estimate of \$250 million received by periodontists was derived by adding the average income of periodontists, \$56,741, to the average expenses for all dental practices, \$56,303 (3) for 1976 and adjusting for inflationary increases of 6 percent per year to express it in 1978 dollars. This sum (\$126,144) was then multiplied by the approximately 2,000 periodontists practicing in 1978.

²Mucogingival surgery involves the removal of pockets by surgery on soft tissue only. Osseous surgery involves the removal of bone. Definitions of these and other dental terms used in this case study are provided in app. A.

³Fees charged for these services in 1976 (2) were inflated to 1979 dollars by using the dental care component of the Consumer Price Index.

⁴Although it has become common to speak of the subject of this case study as the "Keyes technique," Dr. Keyes himself prefers to refer to the collection of techniques as a rationale or regimen, and further suggests that a more appropriate name for the rationale would be "monitored and modulated therapy."