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A MODEL OF COST ANALYSIS OF UNDERGRADUATE DENTAL HEALTH EDUCATION

The University of Oklahoma PH.D. 1985

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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

A MODEL OF COST ANALYSIS IN UNDERGRADUATE DENTAL HEALTH EDUCATION

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

By

RICHARD JAY MATHEWSON

Norman, Oklahoma

1985

A MODEL OF COST ANALYSIS IN UNDERGRADUATE

DENTAL HEALTH EDUCATION

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Chapter I

Introduction

Breneman describes the 1980's as a struggle for the survival of higher education;[1] with program cost evaluations, justifying past and future education costs, routine. This strife in higher education during the 1980's is related to the rapid over-expansion of the 1950's and 1960's.

Landry and Mebone listed the elements of the present problems as:

(1) inflation has damaged higher education because of the effect of tuition increases on family budgets, increased costs of books and supplies, and because of the service nature of higher education;

(2) energy increases have devastated higher education because of its dependency on outdated facilities to provide service;

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[1]David W. Breneman, "Strategies for the 1980's", in Challenges of Retrenchment, ed. James R. Mingle (San Francisco; Jossey-Bass, 1981), p. 18.

(3) government regulations such as Section 504 of the 1973 Rehabilitation Act have increased costs of building maintenance and access;

(4) the pace of changing technology has been so rapid, higher education cannot provide instructional programs with the expensive equipment needed for these laboratory courses; and

(5) financing of renovation of older facilities has eroded, with funds more available for newer projects. The issuing of tax-exempt bonds for such renewal programs has been difficult.[1]

These current conflicts must be of "paramount concern to policy makers inside and outside higher education," and they advocate prudent use of funds, but warn without financial renewal efforts "higher education faces a grim future."[2]

Because of its uniqueness, Mortola states higher education has special cost needs:

> "As a service industry, higher education is labor-intensive, and instruction is clearly the major item in personnel costs. Meaningful indicators in this area are identifiable but are often avoided. However, for decision-making purposes, the indicators must be identified and

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[1]Lawrence L. Landry and Rodney Mebone, "Capitol Crisis in Higher Education," Business Officer (February 1982), p. 36.

[2]Ibid., p. 36.

> pursued. Operating officers and board members should have access to the credit-hour cost for each instructional department and school and to the credit-hour cost per student major. The indicators must be clearly defined and must be monitored carefully, accurately, and continuously."[1]

Reviewing the concepts of productivity in higher education, Wallhaus examined the input/process/output systems model of higher education.[2] By reviewing the input payments, mix of inputs, mix of outputs, and benefits of the outputs, the relationships within the system can be identified. The efficient use of resources is a concern for all involved in higher education. To make appropriate use of resources, Wallhaus stated the need for "allocative efficiency".

> "Resource allocation decisions focus on another key micro-economic issue: that of allocative efficiency. Given a fixed pool of money, could output have been increased by changing the input mix -- that is, by allocating resources differently? This question is faced at all levels of higher education -- by the department chairman who needs to make trade-offs between the computing budget and new laboratory equipment, by the chief academic officer of the institution who must decide whether to strengthen one academic area at the expense of another, by the state-level

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[1]Edward J. Mortola, "Key Economic and Financial Indicators in Higher Education Management", Business Officer (February 1980), p. 176.

[2]Robert A. Wallhaus, "The Many Dimensions of Productivity," New Directions Institutional Res 2 (Winter, 1975), p. 2.

> coordinating staff that must recommend approval or disapproval of a new academic program, and by the legislator or congressman who must vote on the size of the educational budget versus the welfare budget."[1]

Wallhaus describes "preference efficiency" as the most favorable mix of outputs (knowledge, improved health care) for the service of the community.[2] In higher education, the use of resources, allocative and preference efficiency address the accountability question: Is the money spent wisely?

Cherrington describes administrators as waging "a campaign of creative retreat".[3] To assist these academic but systematic decisions, he further suggests the need for cost analysis that is tailored to the specific decision process. With faculty mistrust of cost analysis, it is necessary for the administrator not to misuse the cost analysis data. Misuse may be devastating. Yet, despite the apparent demand and need for cost analysis, little agreement exists as to method or use. Walters, reviewing the literature of the 1970's, felt critical questions about

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[1]Ibid., p. 3.

[2]Ibid., p. 3.

[3]B.E. Cherrington, "Cost Analysis in Academic Decision Making," Business Officer (July 1978), p. 149.

cost analysis methods, and the relationships to program quality still exist.[1]

Yet, this current economic climate has increased demands from legislators, governing boards, and administrators associated with professional health education for accountability and program cost assessment. When cost questions are asked of educators in the health professions, there is often either no response or only inadequate data available. In this era of limited resources and declining enrollments, it is even more imperative that administrators in professional health education have access to cost information which will allow them to make management decisions about maximum cost efficiency. Traditionally, institutions have used rudimentary methods to calculate health program costs. Gonyea concluded that administrators have tended to exclude cost analysis from health programs, such as dentistry or medicine, due to a perceived complexity and high costs of these programs.[2] Yet, in its strategic plan for the 1980's, the American Dental Association's Special Committee on the Future of Dentistry identifies a

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[1]Donald L. Walters, Financial Analysis for Academic Units, (Washington, D.C.: ERIC, 1981), p. 2.

[2]Meridith A. Gonyea, "Editor's Notes", New Directions for Institutional Res, 17 (Spring, 1978): VII.

number of issues in dental education.[1] One of the recommendations is to "develop a model system of long-range fiscal planning that relates cost of education, type of educational program, and student enrollment. This should be the responsibility of each school."[2]

With the apparent need for a method of cost analysis in dental health education, none is available which outlines specific program costs within an institution of health care, nor allows comparisons between institutions on a departmental basis. If such a model were identified, it could be used in the decision process to logically reduce program costs where needed or augment programs where improvement is required. The problem is to develop a pragmatic, but inclusive cost analysis method which can be used in a college of dentistry.

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[1]American Dental Association, Report of the Social Committee on the Future of Dentistry: Issue Papers in Dental Research, Manpower, Education, Practice, and Public and Professional Concerns, (Chicago: American Dental Association, 1983), p. 65.

[2]Ibid., p. 65.

Chapter II

Review of the Literature

A. Historical Review

Morris L. Cooke, a disciple of Frederick Taylor, was commissioned by the Carnegie Foundation to review "how the American university handles money and deals with questions of effective organization and administration".[1] Concerns of the Carnegie Foundation included the rapid expansion of higher education with the accompanying increased educational costs. Completed in 1910, his study reviewed costs and outputs of eight departments of physics in institutions of higher education. Mr. Cooke's meticulous report was uncomplimentary in its view of management and cost determination on the departmental and central administration levels. He stated that:

> "This matter of costs has been largely confused in collegiate accounting with the entirely different matter of the analysis of revenue. There is plenty of reason for believing that the desire to be over-careful in the matter of

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[1]Morris L. Cooke, Academic and Industrial Efficiency, (Boston, Merrymount Press, 1910), p. III.

> accounting funds of all kinds has led our collegiate financiers to overlook the question of cost."[1]

One of the first accounting books for university administrators was written in 1922 by Trevor Arnett.[2] His goal was to standardize accounting procedures for higher education. Different accounting systems for the non-profit higher education sector rather than adaptation of typical business, profit motivated systems were proposed. His theory was that each university or college should adopt an accounting scheme tailored for administrative decisions within that institution.

In 1923, Kelly reported a study of costs at the University of Kansas.[3] He presented two questions. "First, what is the most useful unit of cost to use; and second, what items shall be admitted into total cost?" He advocated including salaries, maintenance, and overhead. Using the student-credit hour of determination, the University of Kansas used this scheme to determine budget needs of departments, but disregarded building depreciation and other indirect costs.

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[1]Ibid., p. 59.

[2]Trevor Arnett, College and University Business, (New York, General Educ Board, 1922), p. 58.

[3]F.J. Kelly, "Cost Analysis as a Basis for Budget Making", J Educ Res 7 (May 1923):410.

The unit cost concept (cost of departments, division, or institutions) was emphasized by Stevens and Elliot.[1] They attempted to relate resource distribution, its use, and measurements of output. This proved to be a difficult function of their cost concept.

In University and College Accounting, Morey described accounting methods employed by academic administrators which were of poor quality often "involving their institutions in financial difficulty".[2] Because of the great diversity between private and public, comparison between institutions was difficult, if not impossible.

Attempting to correlate excellence and financial management, Russell and Reaves established "subjective" criteria for costs in higher education.[3] This monograph, part of a study sponsored by the North Central Association of Colleges and Secondary Schools, concluded that four characteristics of fiscal responsibililty determine institutional quality:

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[1]Edwin B. Stevens and Edward C. Elliott, Unit Costs of Education (New York, MacMillan, 1925) quoted in Carl R. Adams, Russell L. Hankins, and Roger G. Schroeder. A Study of Cost Analysis in Higher Education Vol. I, (Washington, D.C., Amer. Council Educ., 1978), p. 57.

[2]Lloyd Morey, University and College Accounting (New York, Wiley and Sons, 1930), p. 5.

[3]John D. Russell and Floyd W. Reeves, The Evaluation of Higher Institutions, (Chicago, Univ. Chicago Press, 1935), p. 110.

> "(1) weighted expenditure per student for educational purposes; (2) percentage that income from students is of educational expenditure; (3) weighted income per student from stable sources; (4) debt per student. Many other items of financial information have been examined in the course of the study, but these four are found to be sufficiently comprehensive for the purpose of judging institutional excellence from financial data."[1]

The first extensive project of cost analysis in higher education was published by McNeely in 1938.[2] This two year project financed by the Office of Education reviewed unit costs in universities. Using standard accounting procedures developed by the National Committee on Standard Reports for Institutions of Higher Education (NCSRIHE), detailed data was collected and classified on student enrollments and financial expenditures. This report issued a warning [currently applicable].

> "--It must be emphasized that the unit costs should be interpreted with caution. Many imponderable elements not susceptible to arithmetic measurement enter into the instruction of students. Frequently the unit cost of instruction for one department is shown to exceed greatly that of another department. A similar disparity in the unit cost figures of colleges or schools is found. Such differences should not be assumed as a justification for arbitrarily reducing expenditures of the department

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[1]Ibid., p. 114.

[2]University Unit Costs, by John H. McNeely, (Washington, D.C.: Government Printing Office, 1938), p. 28.

> and college or school with the higher unit costs. Before such steps are taken, a meticulous analysis of all the elements involved in their relationship to the general educational program of the institution is essential."[1]

The use of unit cost methods was not universally accepted. Reservations were expressed by several authors. Beaumont, in 1941, was critical of the concept that all student-hours were equal.[2] Due to the variance in salaries of instructors (who teach lower level courses) and professors (who teach upper and graduate level courses), the cost per unit is higher at the upper level courses, but when averaged on a departmental basis, the effect is diluted. Further, he stated the quality of teaching is ignored.

Christensen, commenting on unit-cost, felt that any well informed administrator should know which department was functioning at optimum cost efficiency.[3] He continued -- "a great deal of harm and unrest may result from an application of unit cost studies."[4] Advocating a well documented budget and financial report, he concluded that "all any unit-cost scheme can do is to assist administrators

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[1]Ibid., p.

[2]Henry Beaumont, "The Calculation of Unit Costs", J Higher Educ 11 (March 1941):147.

[3]John C. Christensen, "Unit Costs", J Higher Educ 12 (December 1941):466.

[4]Ibid., p. 467.

in solving their problems by calling attention to places where further investigation may be necessary."[1]

In 1942, Stevens, a proponent of unit-cost studies, answered the critics.[2] Higher unit costs in one department may be the result of a greater number of distinguished faculty producing a quality student. Unit costs, he continued, can be used by laymen (trustees) to answer questions of management, from the faculty member who believes his department is not budgeted fairly, and to the administrator responsible for overall costs. Not all administrators are in favor of unit cost analysis, he concluded, especially those with higher costs, placing them in a defensive position.

Van Dyke, in 1946, described the intent of unit cost studies for better budgeting methods with reduction of wasted expenditures.[3] Pitfalls and problems of unit cost studies were soon apparent, with the most significant influences being salaries of faculty, class size, or the ratio of faculty to class. Unit costs were not comparable nor were they used to reduce highly expensive programs, such as medical education. The unit of value of the finished product could not be determined. He was of the opinion the

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[1]Ibid., p. 500.

[2]Edwin B. Stevens, "The Functions of Unit Costs", J Higher Educ 13 (December 1942):479.

[3]George E. Van Dyke, "Let's Revise our Idea of Computing Costs," College Univ. Business 1 (August 1946):35.

government education programs of WWII influenced the calculation of expenses of plant maintenance (indirect costs). "There undoubtedly is value in cost studies on the old basis of cost per student, --- but there seems to be a need for revising our ideas on the purposes of cost studies ---."[1]

While an advocate of unit cost studies, Jolliffe expressed concern in comparisons between institutions of administrative and general expense items (indirect costs).[2] He further opposed pro-rating other expense items in the general administration budget to units or departments.

Kettler, editorializing on unit cost studies, was opposed to their use or misuse.[3] He felt consistent accounting methods were lacking which made cost-unit studies inaccurate. Comparisons between institutions are impossible because costs between institutions are not comparable. "Are higher costs of producing a graduate at one institution the results of a better program or the result of poorer management?"[4] Colleges only fear the misuse of cost-unit studies, he concluded.

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[1]Ibid., p. 36.

[2]E.T. Jolliffe, "How to Establish a Unit Cost Program," College Univ Business 12 (July 1951):42.

[3]Raymond W. Kettler, "What's Wrong with the Unit Cost Idea," College Univ Business 14 (May 1953), p. 17.

[4]Ibid., p. 17.

The results of the Commission on Financing Higher Education were published by Millet in 1952.[1] Using data provided by the Office of Education, costs per student for private and public institutions were compiled. One of the conclusions from this extensive study was that cost accounting as a systematic procedure for recording expenditures was not feasible. However, cost analysis and cost accounting were not considered interchangable functions, with cost analysis considered vital. Caution should be used if the data were used for interinstitutional comparisons. He concluded:

-- there are important cost differentials between programs
-- differences in costs in levels of instruction
-- cost problems are related to availability of income, and
-- (in 1952) instructional expenditures are under great pressure to increase.[2]

Russell and Doi, publishing a series of articles in 1955-56, discussed the unit-cost method using historical budget data.[3] These articles described analytical methods used to compare New Mexico colleges and universities per

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[1]John D. Millet, Financing Higher Education (New York: Columbia Univ Press, 1952), p. 141.

[2]Ibid., p. 153.

[3]John D. Russell and James I. Doi, "Analysis of Institutional Expenditures", College Univ Business 19 (September 1955), p. 19.

student costs for instruction, administration, and general purposes. They felt that "legislative finance committees have a keen appreciation for compactly presented data on expenditures and costs" having a preference for unit cost figures.[1] Comparison between institutions is difficult, they concluded, because of differences in accounting methods, student enrollments, and varying administrative policies. This series by Russell and Doi was one of the few pragmatic studies to date that reviewed and demonstrated analytical methods which were applicable to college and university financial data.

Citing numerous drawbacks, Hull was hesitant to endorse the use of unit-cost analysis.[2] His list of undesirable characteristics of cost studies include: (1) cost study data are not qualitative, (2) inaccuracy of quantitative performance measures, (3) over-emphasis on cost, (4) obscure instructional costs, (5) misuse of the cost analysis data, and (6) over-zealous administrative use in cost reduction programs. Yet, the author, despite his concerns, believes cost analysis can have a beneficial use in budgetary decisions.

Two articles, one supporting unit costs and the other offering an alternative, appeared in 1962. Hubbard outlined

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[1]Idem, "Analysis of Institutional Expenditures", College Univ Business 19 (November 1955), p. 46.

[2]L.E. Hull, "Pitfalls in the Use of Unit-Cost Studies," J Higher Educ 32 (October 1961):371.

an extensive unit-cost analysis used at Wayne State University, Detroit, Michigan.[1] Mandated by the State of Michigan Legislature, this study included a faculty activity analysis, an admitted weakness.[2] Tyndall and Barnes were critical of the unit cost system used in the California and Western Conference Cost Study (Cal-Big Ten cost study).[3] Advocating a simplified approach, they believed faculty time analysis studies were inaccurate as well as the incorporation of indirect costs. The answer, according to them, was to establish arbitrary values to the work weeks, student contact hours, and semester hourly rates. They feel these methods are practical, less time consuming, and as free from bias as the comprehensive time-unit studies. In cost analysis studies, they state it may never be possible to establish objective standards for cost comparisons.[4]

The Office of Education, in a lengthy report on the status of higher education, felt that the faculty regarded the assessment of cost and performance as illegitimate.[5]

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[1]Robert E. Hubbard, "An Approach to Institutional Cost Analysis," J Exper Educ 31 (December 1962):109.

[2]Ibid., p. 113.

[3]Gordon D. Tyndall and Grant A. Barnes, "Unit Costs of Instruction in Higher Education", J Exper Educ 31 (December 1962):115.

[4]Ibid., p. 118.

[5]"The Illegitimacy of Cost Effectiveness," Report on Higher Education (Washington, D.C.: Government Printing Office, 1971), p. 28.

"But, before pressures for budget control are reduced, the public needs to have confidence that cost effective programs are being carried out."[1]

In the early 1970's, efforts were directed towards the use of computer cost simulation models to provide administrators with information of future cost patterns. The most widely publicized were models developed by the Western Interstate Commission for Higher Education (WICHE), with the Resources Requirements Prediction Model 1 (RRPM-1) one of the first. The intended purpose of this model was to "aid higher level management in rapidly determining resource implications of alternate policy and planning changes.[2] The intent of the RRPM-1 model was to incorporate design factors from previously constructed models such as Computer-assisted Planning for Small Colleges (CAP:SC), the Cost Simulation Model (CSM) and Campus V model from the University of Toronto.[3] The model's input cost determinates are those developed by WICHE. This model, using historical cost data,

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[1]Ibid., p. 29.

[2]See Warren Gulko, "A Resource Requirements Prediction Model! (RRPM-1): An Overview", Western Interstate Commission Higher Educ., (No. 16), 1971, p. 2; Ben Lawerance, George Weathersby, and Virginia Patterson, ed. Outputs of Higher Education: Their Identification Measurement, and Evaluation. (Boulder: Western Interstate Commission for Higher Education, 1970), p. 4; Sidney S. Micek, Allan L. Service, and Yong S. Lece, Outcome Measures and Procedures Manual Field Review Edition, (Boulder: National Center for Higher Education Management Systems, 1975), p. 12.

[3]Gulko, p. 9.

would project future enrollment fluctuations and accompanying cost changes. The RRPM and similar models were not accepted with enthusiasm by a number of critics. Balderston expressed concern because of the extensive federal support of these model development programs.[1] Adams and co-authors were of the opinion that many institutions have become discouraged with use of cost simulation models, returning to former cost analysis methods.[2] Though these systems define health professions in the coded cost index, there is no mention of measurement of monetary outputs of health educational programs. The NCHEMS costing scheme uses credit hours of instruction which is often difficult to determine in health education programs.

An extensive review of post-secondary education was published by a national commission appointed to review finances and costs in higher education.[3] Noting a number of obstacles, a national center for gathering information was proposed. The full annual per student costs were advocated, but administrators should not rely completely on

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[1]Frederick E. Balderston, "Institutional Data Systems", Managing Today's University, (San Francisco: Jossey-Bass) 1974.

[2]Adams, Study of Cost Analysis, p. 47.

[3]National Commission on the Financing of Postsecondary Education, Financing Postsecondary Education in the United States, (Washington, D.C.: Government Printing Office, 1973), p. 340.

such data. This report recommended federal government leadership in developing a national cost analysis program.

In 1979, Topping reported on the use of the National Center for Higher Education Management Systems (NCHEMS) information management system.[1] Difficulties in the compatability of data were the main problems. Questions unanswered were related to comparability of student achievement levels, course contents, student outputs and institutional policies. "Many problems, both conceptual and technical, remain -- with large-scale costing models."[2]

In their 1978 extensive review of the cost literature, Adams, Hankins and Schroedor found that there "is no well developed or well expressed sense of purpose presented in the cost analysis literature."[3] They concluded:

1) the existence of literature on cost analysis and the internal decision process is minimal, but cost data for use in the decision process should receive more attention;
2) there is a lack of research on how cost analysis will influence the outcome of higher education;
3) little emphasis on how an institution would implement a cost analysis system;

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[1]James R. Topping, "Research Universities Evaluate NCHEMS Data Exchanged Procedures", Business Officer (September 1979), p. 143.

[2]Ibid., p. 145.

[3]Adams, Cost Analysis, p. 81.

4) that the current cost literature (1978) is fragmented; and

5) a lack of well defined terminology in the area of costing a cost analysis.[1]

Walters, in 1981, reviewed the cost analysis literature to date.[2] He concluded that:

> "The findings show the need for further work on the technical aspects of financial analysis and for discussion of questions about the role of this type of analysis for academic units. The measurement and allocation of indirect costs, the identification of revenue, and the analysis of fixed and variable costs need refining and testing to increase their validity and reliability in financial analysis. Questions about the issues to which financial analysis is applied, who uses this type of information, and how it influences their decisions need additional study."[3]

This overview of the cost analysis literature supports the conclusions of Adams and co-workers.[4]

Since the pioneering efforts of Morris Cooke in 1910, descriptions and methods have been presented, challenged, and defended in the literature. However, there is little evidence as to methods of cost analysis application in higher education. The purpose of cost analysis, its

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[1]Ibid., p. 130-134.

[2]Walters, Financial Analysis for Academic Units, p. 1.

[3]Ibid., p. 2.

[4]Adams, Literature of Cost Analysis, p. 37.

intended uses, and doubts of its needs still have not been resolved. Despite the practical, pragmatic efforts of Russell and Doi in 1955-56, the computerized models of the 1970's, the concepts, documentation, and uses of cost analysis have evaded standardization in the financially critical 1980's.

B. Cost Analysis Methods in Health Education

1. Colleges of Medicine

Reviewing special cost problems facing higher education in the 1950's, Millet described unanimous concern expressed by administrators concerning medical education costs.[1] Receiving the greatest percentage of the higher education budget from state budgets, medical schools were criticized by non-medical faculty and administrators. Yet, the public was demanding an increase in the number of physicians while the Association of American Medical Colleges was demanding maintenance of current standards of medical education. However, state officials were demanding efficient use of public monies in medical school management. He concluded that "medical education became a cost problem, not because it was an expensive educational program, but because high quality, and hence high cost, was developed without a due regard for the necessary income."[2]

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[1]Millet, Financing Higher Education in the United States, p. 178.

[2]Ibid., p. 189.

Henricksen and Daveson reviewed cost analysis methods prevalent in the 1950's.[1] The intent then, as now, was to improve the economic status of undergraduate medical education. They described a simplistic method, then in vogue, which merely subtracted hospital income from the total budget. Dividing the number of medical students into this difference yielded a cost per student. Tuition and other student fees were not included. These calculations were misleading, if not inaccurate. The authors, in 1952, while not offering a solution to the cost analysis acounting problems, were of the opinion that cost analysis was dependent upon

-- the accounting method used
-- the type and mission of the medical school
-- a simplistic approach with exclusion of other cost factors.

In a pilot program at Emory University, Knott and co-workers evaluated a cost analysis method using historical budget data.[2] Basic concepts included in this cost analysis were:

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[1]Gehard C. Henricksen and Wilburt C. Daveson, "Cost of Undergraduate Medical Instruction in an Endowed School," J Am Med Assoc 149 (May 10, 1952):99.

[2]Leslie W. Knott, Majorie Gooch and Hugh E. Hillard, "The Cost of Medical Education: A Pilot Study," J Med Educ 33 (May 1958):429.

(1) use of the average cost concept -- "the cost of a given service during a specific period of time apportioned among the units served";[1]

(2) use of these average costs to apportion indirect costs and overhead on a departmental basis;

(3) use of a stepdown cost method with cost centers arranged according to service they provided other cost centers;

(4) assignment of grant funds as departmental income; and

(5) using these methods to assign cost per student.

The authors, using various combinations of costs, incomes, and types of medical students, calculated six cost per student options. Depending on the cost method, there was a variance of nearly 70 percent in cost per student. They concluded a goal of any cost analysis project in health education should be the development of a system that meets the need of a "reasonable cost information system."[2]

Carroll, in several articles on medical school cost analysis methods, reviewed data from his classic 1958 study sponsored by the Association of American Medical Colleges (AAMC).[3] The data represented typical costs of four year

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[1]Ibid., p. 431.

[2]Ibid., p. 435.

[3]See A.J. Carroll, "Education Costs in Hospitals" J Med Educ 37 (August 1962):744; A.J. Carroll and Ward Darley, "Medical College Costs", J Med Educ 42 (January 1967):1.

medical colleges including average yearly total costs over a five year span, total expenditures for sponsored programs and regular operating funds. Percentage comparison between the several budgets were used as significant cost comparisons. Ranges of these several categories were included plus total medical school enrollment. Using this data, Carroll believed that a medical school dean could determine the comparative position of his own institution. If a comparison of grant support money was lower than the AAMC average, then was the faculty spending too little time on research and why? Conversely, a medical school with a higher percentage of sponsored programs may have had an improper balance between teaching and research. Illustrating several misuses of this type of data, the most serious was dividing expenditures by total number of students. To improve the cost analysis concept, a program of cost analysis was proposed. Programs were identified as the primary program, the undergraduate medical program; or support program and research programs. By assigning expenditures, incomes, and other costs to individual programs, a program cost analysis concept would increase the reliability of the final cost per student determination. However, there was little mention of allocating indirect costs. He concluded that program costs serve as managerial guides for judgments, but not absolutes.

Smythe, using descriptive budgetary data from twenty-five medical schools, compared cost data of six typical medical school departments.[1] His purpose for this extensive cost study was to define, from a cost viewpoint, what an "acceptable" department was in an "acceptable" medical school. By use of a cost questionnaire, income and expenses were categorized by pre-defined cost terms. From this data, the lowest quartile mean and the median were calculated for each of the six divisions. Using percentage and ratio comparisons such as 1) percentage of departmental budget to total budget; 2) percentage of departmental budgets which are state supported or sponsor research supported; 3) medical student:faculty ratio; 4) net square footage per faculty member; and 5) a comparison of undergraduate students to sponsored research monies; he concluded all costs, space, faculty, and number of medical students were interrelated. An additional conclusion was that as sponsored research monies increased, medical student contact ratios decreased. He argued, in summary, "only in terms of allocated cost is it possible to separate what the various programs of a medical center require. However, it is not possible to separate these various component parts

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[1]C.M. Smythe, "Toward a Definition of Department Size: A Study Based on Six Departments in Twenty-Five Medical Schools," J Med Educ 45 (September 1970), p. 637.

physically or intellectually without destroying the integrity of the educational effort."[1]

Using the College of Medicine, University of Iowa, Latham attempted to identify the productive interaction between medical education, research and education.[2] The intent of this in-depth study of the budget of the College of Medicine was to determine per unit costs and total costs of output activities of the medical educational program. Critical of previous studies, he was of the opinion that cost of building space, contributions of residents and interns, volunteer faculty, research, and patient services should be included in any cost study. By use of the budget data, faculty effort reports, and additional records, seventeen departments were compared in the study. Using an output model, his method produced significantly different costs per unit than previous methods. A summary of his findings are that

-- the optimal mix of investments in a medical educational program depends on the initial cost and the ultimate societal benefits;

-- there are limitations of his method because of the uniqueness of the College of Medicine, University of

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[1]Ibid., p. 658.

[2]Robert J. Latham, "The Cost of Medical Education: An Empirical Analysis of Production, Costs, and Optimal Output Mixes in a Medical College," Ph.D. dissertation, University of Iowa, 1971, p. 15.

Iowa;

-- unfortunately, there is no way to create alternative models to generate outputs (medical students) to determine optimal model comparisons; and

-- in verifying the accuracy of faculty activity reports, by interviewing faculty after completion of the report, he found a low correlation between what was reported and what was done. He questioned their value.

He concluded, "further comparative studies of the costs of medical education are needed -- further estimates of production relationships are required for cross-sectional comparisons of efficiency of production activities in medical colleges."[1]

Attempting to answer questions on how to provide increased financial support to health science centers, the Cost Allocation Study was co-sponsored by the American Association of Medical Colleges and the federal government.[2] This extensive study established extensive, step-by-step cost funding procedures for all programs in health education. The second part, using sample data provided an example of how the cost finding information

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[1]Ibid., p. 281.

[2]William C. Hilles and Thomas J. Campbell, Guidelines for Academic Health Center Cost Allocation Studies. Association of American Medical Colleges. Part I. [Washington, D.C.]. p. 4.

would be calculated and summarized.[1] They recommended that as a minimum cost finding concept that each health science center should consider the following:

-- bases of allocation should produce a valid distribution of costs among the various programs.

-- bases of allocation must be documented and should be available to agencies which provide financial support.

-- bases of allocation should adhere to generally accepted accounting practice. It was appropriate that the institution's external auditor examine and attest to the reasonableness of such bases.

-- bases of allocation should reflect reasonable consistency from year to year and should be applied consistently among programs.[2]

The conclusions of the AAMC were that:

1) each health science center use the general cost principles established by the AAMC for allocation costs;

2) there were needs for constant revision of methodology;

3) the AAMC publications were only guidelines;

4) in the future, there will be a maximum degree of compatibility between different health science centers;

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[1]William C. Hilles and Thomas J. Campbell, Guidelines for Academic Health Center Cost Allocation Studies. Association of American Medical Colleges. Part I. Washington, D.C. . p. 4.

[2]Ibid., Part I, p. 2.

and

(5) that cost finding is more practical than cost accounting.

The use of cost finding or cost analysis requires estimating, which the report states "is a necessary part of even the most sophisticated cost accounting system."[1] Cost finding is not an exact science depending on the intelligent, good judgment of reasonable people. "Exactness is not important, and, if attempted, would be very costly itself and wasteful of time."[2] Proponents of faculty activity analysis, the AAMC used these reports to determine allocation of costs to education, research, and service programs.

Authors have questioned the accuracy and the dependence of faculty effort-reporting used by the American Association of Medical Colleges (AAMC).[3] Doubtful of the use of effort-reporting, they are critical of its use in cost analysis. The problem, they feel, is that in health education it is difficult to separate costs for patient care in the hospital and the educational process. Their

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[1]Ibid., Part I, p. 16.

[2]Ibid., Part II, p. 11.

[3]See John Koehler and Robert L. Sleghton, "Activity Analysis and Cost Analysis in Medical Schools" J Med Educ 48 (June 1973):531; Greg L. Stoddart "Effort-Reporting and Cost Analysis of Medical Education," J Med Educ 48 (September 1973):814; Warren G. Hilles, "Program Cost Allocation and the Validation of Faculty Involvement," J Med Educ 48 (September 1973):805.

disregard for uses of effort-analysis are related to accuracy because of

-- lack of faculty interest or a feeling of infringement on academic freedom
-- unwillingness of a faculty member to respond in a manner inconsistent with the sources of his/her financial support
-- length and ambiguity of the forms and
-- the impression that such cost analysis methods are inaccurate.

Suggested alternatives included a one-to-one interview process; linear input-output cost analysis, and methods which eliminate effort analysis.

In 1971, Congress requested the Institute of Medicine with the support of the National Academy of Sciences to review costs of health education.[1] Prompted by the Comprehensive Manpower Act of 1971 which disbursed federal funds to health professional schools based on enrollment, Congress wished to determine how these "capitation" monies were allocated for educational costs. The extensive three part study combined data from eight professional schools; dentistry, medicine, optometry, pharmacy, podiatry, nursing, and veterinary medicine. The overall objective was to determine annual national averages per student costs. The

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[1] Costs of Education in the Health Professions, National Academy of Sciences, Part I and II (Washington, D.C., 1974):p.1.

specific objectives were as follows:

> "1. Such studies shall develop methodologies for ascertaining the national average annual per student educational costs and shall, on such basis, determine such costs for school years 1971-72, 1972-73, and the estimated costs for school years 1973-74 in the respective disciplines.
>
> 2. Such studies shall also describe national uniform standards for determining annual per student educational costs for each health professional school in the future years and estimates of the cost to such schools of reporting according to these uniform standards.
>
> 3. The report shall also include recommendations concerning how the Federal Government can utilize educational costs per student data to determine the amount of capitation grants under the Public Health Service Act to each health profession school."[1]

The study determined costs by

-- use of faculty activity analysis with one week as the sample basis.

-- use of a seminar method of peers within each health profession to determine contributions of research and patient care essential for the educational process.

-- and combining this data, educational costs per student for each health profession were determined. The costs and their influences on the educational cost per

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[1]Ibid., p. IV.

student in colleges of medicine are summarized as follows.[1]

1. Educational costs ranged from $6,900 to $18,650 with private medical schools having approximately 24 percent higher cost per student. Fifty percent of this higher cost was due to differences in research and patient care costs;
2. The number of medical students per medical school influenced cost;
3. The nature of the academic medical program. Lower faculty/student ratios seemed to produce more medical researchers and academicians upon graduation; and
4. Indirect costs seem to show lesser variations and influences on student cost than direct costs but with few overall conclusions on educational cost per student.

In 1975, Bromberg reviewed the American Association of Medical Colleges study.[2] Stating "it will never be possible to determine precise costs of end programs,"[3] he does however, present a model which attempts to overcome the shortcomings of the AAMC method of cost analysis, specifically the faculty activity analysis. The main

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[1]Ibid., pps. 59-89.

[2]Jonathan Bromberg, "A Generalized Modeling Approach to Determining Environmental Costs of Education. J Med Educ 50 (April 1975):346.

[3]Ibid., p. 351.

objective of his model was to include the faculty member who was completely involved in the educational process; ie. the basic science faculty member. Bromberg's formula method determined reasonable estimates of the educational cost per student.

2. Colleges of Allied Health

Using five selected hospitals, a study was reported on the educational costs in medical technology programs.[1] From questionnaires, expenses in the educational programs were calculated. The percentages of time devoted to the educational program were used to determine the salary cost factor, with the increased needs for supplies and equipment for student education as additional expense items. Dividing the total number of students into the total costs, cost per student were compiled for comparison. The costs ranged from $5,840 to $2,445 with a mean of $5,100. The authors, noting wide cost per student variations, were confident in the resultant data presented.

A general model was presented which measured education costs of a physical therapy program in a hospital setting.[2]

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[1]Stephen J. Smith and Gray T. Malcom, "Education Costs for Medical Technology Programs in Hospital Laboratories," Am J Med Tech 40 (June 1974):273.

[2]Robert J. Halonen, John L. Fitzgerald, and Kenneth J. Simmon, "Measuring the Costs of Clinical Education in Departments Utilizing Allied Health Professionals," J Allied Health (Fall 1976):5.

Reviewing the literature to date (1976), the authors noted a lack of consideration of the influence of student clinical productivity on departmental patient income. Using a monthly report, direct and indirect costs, income from student tuition and student patient care, educational and administatve costs, and related expenses were formulated to determine a net educational cost per student. The cost method was presented as an economical way to measure in-house costs of clinical programs.

Surveying thirty-seven health care facilities, the author analyzed costs in six allied health programs which trained technicians in physical therapy, laboratory, radiology, respiratory diseases, and medical records.[1] Using questionnaires, respondents estimated time spent in educational activities and cost of supplies used in the educational program. The credit, a benefit, depended upon the students' contribution to the daily patient workload. The actual cost, or debit, represented the cost analysis of the specific program. In all of the programs surveyed, the debit or cost exceeded the cost benefit. Using the differences between debits and credits, an average of educational cost per student was calculated. Noting a wide variation of salary costs and educational supplies, the

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[1]Suzanne S. Hammersburg, "A Cost/Benefit Study of Clinical Education in Selected Allied Health Programs, J Allied Health (February 1982):35.

author cautions use of the data without further verification.

3. Colleges of Dentistry

The first extensive cost analysis study in dental education was inspired by the pioneering medical cost efforts of Carroll.[1] The American Association of Dental Schools, funded by the W.K. Kellogg Foundation, developed a manual of cost analysis for distribution to colleges of dentistry. The final study summarized returned cost data from 39 colleges of dentistry in the United States and six in Canada for the fiscal year ending June 30, 1964. This cost information plus faculty activity analysis were used to calculate dental education costs. The cost method employed summarized direct and indirect costs plus income sources (clinical, tuition, and other fees). By subtracting income from costs, a cost per full-time student was determined for each institution. As the report states "the data lend themselves to almost unlimited statistical study."[2] Numerous tables report mean and median costs for schools, programs, and individual student costs. Public and private institutions, geographical locations and enrollment sizes were additional divisions. Because of the wide variance in departmental descriptions, only six departmental costs were

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[1]George M. Norwood, Jr. ed., "Cost Study of Dental Education" Am Assoc Dental Schools (Chicago, 1966):2.

[2]Ibid., p. 19.

included in the report. The method of calculation of these departmental costs were not included . The conclusions were as follows:

1. A uniform method of cost analysis was advocated for all colleges of dentistry.
2. If the basic mission of a dental school is undergraduate education, then all direct and indirect costs result in a mean cost of $4,578 per year in 1966.
3. Private schools seem to have fewer resources.
4. Private schools have a higher faculty:student ratio.
5. Indirect costs are approximately 20% of total expenditures.

The more pertinent recommendations were:

-- continuous monitoring of costs for analysis would be ideal

-- unit costs varied inversely with size of the student group, therefore, each college of dentistry should evaluate its resources for optimum use

-- the experience seemed to suggest that in the future there be a strict definition of 1) net useable space, 2) indirect costs, 3) number of part-time faculty, and 4) basic and clinical research efforts.

In a supplement to the study, a concern was expressed over the accuracy of the faculty-effort reports.[1] It was

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[1]Idem, "Cost Study of Dental Education," Am Assoc Dental Schools, (Chicago, 1966):Supplement.

suggested that the average degree of error was between five to ten percent resulting in under-estimates of the costs in dental education.

Diana, in 1971, stressed the need for dental school administrators to become involved in cost allocation studies as part of good management.[1] He advocated the use of Management Information Systems (MIS) as a valuable assist in developing accountability and strengthening dental school curricula.

Warning of the need for educators in the health profession to develop legitimate cost information systems, Lyons expressed apprehension about loss of managerial autonomy due to inappropriate or nonexistent cost information models in health education centers.[2] Not only is it important to identify costs within educational institutions, but also is necessary to compare institutional program effectiveness for support in the management decision process.[3]

Two reports, sponsored by the Carnegie Commission on Higher Education, examined the future of health care needs.

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[1]Joseph A. Diana, "Principles and Techniques of Cost Allocation -- A Tool for Self-Management", J Dent Educ 35 (February 1971):91-100.

[2]John M. Lyons, "Cost Accounting: Problems and Research Related to Cost Definitions and Collection of Data", New Directions for Institutional Res, 17 (Spring, 1970):1-11.

[3]David J. Zaumeyer, "Cost per Student Determinations", New Directions for Institutional Res, 17 (Spring, 1970):27-32.

Fein and Weber, in 1971, argued that the distribution of funds for professional education should be determined by measuring educational output as related to allocation of resources.[1] They admitted to a lack of knowledge about the functional relationships between these two actions. In 1976, there was an indication of an oversupply of dental graduates, thus a need to reduce enrollment. However, there were little cost data to substantitate such curtailment.[2]

In 1970, McCallum presented views on the status of cost analysis in dental education.[3] Stating that cost analysis in dental education was very complex, yet answers must be found before cost questions are asked. He was of the opinion that it was not only inappropriate but impossible to isolate service, research and educational costs by individual cost functions. His recommendations were:

1. Because future funding will be on the basis of cost analysis, methods of cost analysis should be developed, and
2. The objectives of cost analysis should include a

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[1]Rashi Fein and Gerald I. Weber, Financing Medical Education: Carnegie Commission on Higher Education, (New York: McGraw-Hill, 1971), p. 213.

[2]Progress and Problems in Medical and Dental Education: A Report of the Carnegie Council on Policy Studies in Higher Education, (San Francisco: Jossey-Bass, 1976), p. 178.

[3]Charles A. McCallum and Joseph M. Fontanna, "Identification of the Need for Cost Analysis in Dental Education", J Dent Educ 35 (February 1971):17.

responsible, efficient use of resources.

Dentistry was included in the Institute of Medicine's in-depth cost study of the health profession.[1] Using the same methodology of cost analysis for all professions, the annual cost per dental student was calculated.[2] However, the peer review committee of dental educators were of the opinion that dental education was underfunded. Thus, the constructed model for dentistry was what they thought it should be, rather than what it was. The major differences in the actual and the constructed model were that

-- the constructed model had more full-time faculty than existed
-- the use of auxiliary aids exceeded current use
-- more research was needed, thus a higher research commitment by faculty
-- intramural facilities be established with time for full-time faculty to practice, with all expenses recoverable
-- all faculty, both basic sciences and clinical, are self-contained within the college of dentistry.

For dentistry, the mean annual cost of education per student for fiscal year 1972-73 was $9,050. The average net educational cost was calculated to be $7,400. The range from the eight schools sampled was $5,150 to $14,150.

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[1] Costs of Education, Part I and II, p. 127.

[2] See pp. 22-23 above.

Public schools had higher average per student costs than private institutions. The average instruction costs are 88 percent of educational cost per dental student. This range was $5,752 to $14,198 with an average of $8,008. The method used to determine these costs differed from other health professions because of particular relationships which exist in dental education:

1. Patient care in dental schools is performed mainly by students with faculty supervision and administration.
2. The greater percentage of faculty activity was devoted to teaching or support of teaching functions.

Gonyea outlined and compared two cost methods, the Institute of Medicine study (IOM) with the Association of American Medical Schools (AAMC).[1] The intent of both studies was to establish a baseline for health education on a cost per student basis. Using the methods for respective data collection, comparisons of costs showed wide variations. There was apparently a need to refine the data collection model so financial information can be uniformly collected from all institutions. Further, the author was critical of several conceptual aspects of the IOM study. There was need, she stated, to publish explicit descriptions of the judgments utilized in the methodology. The constructed dental model varied widely from data,

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[1]Meredith A. Gonyea, "The Cost of Dental Education -- The Challenge and the Methods of Response," J Dent Educ, 39 (April 1975), p. 202-208.

especially percentages devoted to instruction, research, and service. Caution, she concluded, should be used in drawing conclusions from the data.

A method of calculation of total department:student contact hours has been described as a use for increased (or decreased) faculty needs.[1] The authors' calculations included departmental administrative duties, shared time with other departments, and the ratio of part-time to full-time faculty.

In 1978, the American Association of Dental Schools reported on a management system directed towards cost analysis.[2] Dental schools have two particular characteristics in common, they are department-oriented and personnel-intensive with 80 percent of the schools' resources expended on faculty and support personnel. Using faculty activity analysis forms, the first phase was directed towards curricular-faculty involvement [In 1983, the project still was in the development stage or Phase I].

Gonyea and Harper have outlined a method of analyzing costs in existing and developing health programs.[3] The

[1]George G. Burger and Ian C. Bennett, "A Method of Quantifying the Number of Faculty Members a Dental School Needs", J Dent Educ, 39 (September 1975), p. 587.

[2]American Association of Dental Schools, Report of the Section on Business and Financial Administration. "The Development of a Dental Management Information System," San Francisco, Ca. N. P., p. 2.

[3]Meridith A. Gonyea and Ronald I. Harper, "Program Cost Construction: Research in Progress," New Directions Institutional Res 17 (Spring 1978):83-90.

results of their preliminary evaluations indicated it was possible to localize factors influencing costs per student in dental school programs. There are five major divisions; program, student, faculty, cost, and income. The program and student elements contribute to the faculty contact hours. The faculty component determines the FTE available for student contact within each department. Using cost and income data, the cost per student per department was determined. This can be used to compare efficiency between departments. [However, a limitation of this method is the failure to use indirect cost information in the cost per student calculations. Income, generated from several sources, is an additional cost factor neglected.] Clinical departments in dental colleges do generate income, which can be used to determine use of resources, monetary, faculty, or curricular.

Packer, writing of the financial problems which will become evident in this decade, suggested a mandate for constant internal monitoring.[1] Each program within the institution must be examined for its relationship to the mission of the school. He states:

> "A system of management designed to increase the efficiency of the school's operation is a critical component of dental school administration in this decade. Ultimately, administrators must

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[1]Merrill W. Packer, "Dental School Management in an Adverse Economic Climate", J Dent Educ, 45 (October 1981):706-710.

be accountable for the productivity of the school and each of its units."

The American Dental Association published a yearly report which describes demographic data and other information, but comparative costs of dental education are not available.[1]

The recent American Dental Association's strategic plan for the 1980's included an extensive review of dental education.[2] One of the concerns has been the increased cost of dental education. Increased costs must be balanced by increased tuition and fees plus more clinical activity with resultant higher clinic incomes. Programs which are not revenue generating or cost-efficient will be eliminated. There is a need for dental schools to develop a model for cost analysis.

From the review of the literature, the status of cost analysis in higher education is summarized as follows. In general, cost analysis still generates debate about its use. Specifically, these questions are:

1. Which method of cost analysis is most reliable; should it depend on faculty activity analysis?
2. How are direct and indirect costs apportioned equitably to various divisions?

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[1] Council on Dental Education, 1982-83 Annual Report Dental Education (Chicago: American Dental Association, 1983), p. 6.

[2] See pp. 6, above.

3. Similarly, how are fixed and variable costs assigned equally?
4. Should income from tuition, grants, and other sources be used as a credit?
5. How should cost information be used? and
6. What is the role of cost analysis in the administrative decision support process?

In the health professions, similar questions exist in the educational cost process. However, the questions are more complex because of the historical expense of professional health education and incorporation of the patient care component into teaching. Dentistry is unique because

1. The fact is that the greatest percentage of patient care is provided by students with faculty supervision;
2. This care is provided in one facility;
3. Departmentalization is the major organizational unit, usually functioning as a separate division; and
4. Similar to other areas in higher education, a practical approach to cost analysis is not available despite the need to do so.

Chapter III

Purpose/Methodology

A. Purpose

The review of the literature, both in higher education generally and dental education, specifically, described continuous requests for a method of cost analysis. Yet, only descriptive methods and opinions are available, with little effort to identify and implement a uniform method of cost analysis in dental education. There have been few attempts to determine normative cost information by department in dental education, either by student or per hour.

First, this study defined a model of cost analysis in dental education in a single institution. Then, by reviewing budgetary data from several schools, the cost model was evaluated for its ability to establish normative data.

The following questions were considered concerning cost analysis in undergraduate dental education.

(1) What direct and indirect costs have the greatest influence on institutional cost per student and cost per hour in dental education?

(2) Can a reliable method of cost analysis be developed to reasonably describe these costs?

The intent of the study is to examine the following hypotheses:

1. In a single institution, there is a relationship between indirect and direct costs in determination of student costs over a period of time;
2. A model of cost analysis can be developed for use within a college of dentistry which compares cost by department on a cost per student and cost per hour basis; and
3. A model of cost analysis, if applicable in one institution, can be duplicated in other colleges of dentistry. Normative data costs can be determined for typical departments.

B. Methodology

1. Population and Sample

The curricula of colleges of dentistry are unique because there is little or no deviation from the established academic and clinic courses. Electives are limited, usually to the senior year. Thus, it is somewhat easier to assess curriculum:faculty:student contact hours because of this curriculum uniqueness.

The design of the model of cost analysis is a qualitative descriptive study of The College of Dentistry, departments within a college of dentistry, and between colleges of dentistry - determining cost per student and cost per hour. The variables and specific cost data items used are listed in the appendix.[1] The College of Dentistry, University of Oklahoma served as the initial sample, Part I, for method development and cost comparison.

Part II consisted of collecting budget, curricula, and faculty data from eight colleges of dentistry.[2] Five were funded from public sources, three from private funds. The data requested was for Fiscal Year 1983-84. The process for Part II consisted of:

a) A letter introducing the intent of the study, the assurance of confidentiality, and the credibility of the

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[1]See appendix A, p. 137.

[2]The colleges of dentistry sampled are listed in appendix A, p. 142.

study's purpose from William E. Brown, Dean, College of Dentistry, University of Oklahoma.

b) An accompanying letter by the investigator requesting that budget, costs, curricular, and income information be sent; again emphasizing confidentiality.

c) A form for recording the cost data information for the college and by department.[1] This form was returned, plus quintile rankings of the American Dental Association National Board Examinations, for basic science and clinical departments. Additional cost data, where indicated, were also included.

2. Treatment of the Data

Part I

The longitudinal cost information from the College of Dentistry, University of Oklahoma (O.U.D.S.) was used to determine cost per student, both as an institutional cost and departmental cost. Fiscal data from FY 1976-77, the first fiscal year in the present dental college science building, to FY 1983-84 was entered in a computer data base management system (IDES). Calculations of the variables listed in Table 1 were used to determine direct and indirect costs on a cost per student and cost per hour basis.

Direct costs were easily identified. Indirect costs, in this study, are those which are apportioned in a logical

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[1]See appendix A, p. 143.

TABLE 1

DESCRIPTION OF COST VARIABLES GROUPED BY DIRECT AND INDIRECT COSTS, AND INCOME, PLUS THE COST CENTERS OF CURRICULUM AND FACULTY/STUDENTS

COSTS			COST CENTERS	
DIRECT	INDIRECT	INCOME	CURRICULUM	FACULTY/STUDENTS
FACULTY/STAFF WAGES	ADMINISTRATION A) HEALTH SCIENCE CENTER B) COLLEGE OF DENTISTRY	CLINIC INCOME	TOTAL CURRICULUM CLOCK HOURS A) TOTAL LECTURE HOURS B) TOTAL LABORATORY HOURS C) TOTAL CLINIC HOURS	HEALTH SCIENCE CENTER A) TOTAL NUMBER OF STUDENTS B) TOTAL NUMBER OF FTE FACULTY
FRINGE BENEFITS		TUITION A) DENTAL STUDENTS B) DENTAL HYGIENE		COLLEGE OF DENTISTRY A) NUMBER OF DENTAL STUDENTS B) NUMBER OF DENTAL HYGIENE STUDENTS C) NUMBER OF FTE (FULL-TIME) D) NUMBER OF FTE (PART-TIME)
OPERATING EXPENSES	COMPUTER USAGE			
	LIBRARY	INSTRUMENT RENTAL		
	MAINTENANCE - PHYSICAL PLANT	APPLICATION FEES		
	CLINIC-LABORATORY OPERATIONS	CAPITATION		
		STUDENT STORE		
	BUILDING DEPRECIATION	EXTRAMURAL GRANTS		
	EQUIPMENT REPLACEMENT			

manner for support services, such as patient care, curriculum time or number of students.

The following factors were used to allocate indirect costs. (Table 2)

-Net square footage - the square footage used by an academic unit (college or department) is related to that portion of the budget used to support the unit. This method, as suggested by several authors, was used to assign indirect costs of heating, cooling, janitorial and physical plant support.[1]

-Method 1. The ratio of number of dental and dental hygiene students: total number of students on the Health Science Center (HSC) was used as an indirect cost factor. Several authors have suggested student FTE as the basis for assignment of indirect costs.[2]

-Method 2. The ratio of the number of state-support full-time faculty for the dental school: to the total state support full-time faculty equivalents of the HSC following the method outlined by Gonyea.[3]

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1. See Carnegie Commission on Higher Education, the More Effective Use of Resources. An Imperative for Higher Education. New York: McGraw-Hill, 1972, p. 121; Latham The Cost of Medical Education, p. 19; Norwood Cost Study of Dental Education, p. 29.

2. See Smith, Education Costs for Medical Technology Programs, p. 275; Symthe, Toward a Definition of Department Size, p. 639.

3. Gonyea, The Cost of Dental Education, p. 204.

TABLE 2

HEALTH SCIENCE CENTER INDIRECT COST ASSESSMENTS

FACTORS USED TO ASSIGN INDIRECT COSTS AND INCOME

COST FACTOR	METHOD
HEALTH SCIENCE CENTER	
(1) COMPUTER	(1) NUMBER DENTAL STUDENTS ÷ NUMBER HSC STUDENTS
LIBRARY	(2) COLLEGE OF DENTISTRY FTE ÷ NUMBER HSC FTE
	(3) OUDS BUDGET ÷ HSC BUDGET
	(4) OUDS BUDGET ÷ HSC COLLEGE BUDGETS
HSC ADMINISTRATION BUDGET	(5) (NUMBER DENTAL STUDENTS + OUDS FTE) ÷ (HSC STUDENTS + HSC FTE)
(2) MAINTENANCE	(OUDS NET SQUARE FOOTAGE ÷ TOTAL HSC NET SQUARE FOOTAGE) X HSC MAINTENANCE BUDGET
(3) BUILDING DEPRECIATION (35 YEARS - STRAIGHT LINE	COST OF BUILDING ÷ 35
(4) EQUIPMENT REPLACEMENT (15 YEARS - STRAIGHT LINE	EQUIPMENT COSTS ÷ 15

TABLE 2 (CONT'D)

COST FACTOR	METHOD
DEPARTMENT	
(1) CLINIC SUPPORT COSTS	(1) (DEPARTMENT LAB HOURS + DEPT CLINIC HOURS) ÷ (OUDS LAB HOURS + OUDS CLINIC HOURS) X OUDS CLINIC COSTS
(2) EQUIPMENT REPLACEMENT	(2) (DEPARTMENT LAB HOURS + DEPT CLINIC HOURS) ÷ (OUDS LAB HOURS + OUDS LAB HOURS + OUDS CLINIC HOURS) X EQUIPMENT REPLACEMENT DEPRECIATION
(3) MAINTENANCE	(3) (DEPARTMENT SQUARE FOOTAGE ÷ OUDS SQUARE FOOTAGE) X OUDS MAINTENANCE COSTS
THE FOLLOWING ASSESSMENTS ARE BASED ON EITHER METHOD A OR B	
(4) INCOME CAPITATION EXTRAMURAL GRANTS STUDENT TUITION STUDENT INSTRUMENT FEES APPLICATION FEES	METHOD (A) DEPT HOURS ÷ TOTAL CURRICULUM HOURS OR METHOD (B) DEPT FTE ÷ OUDS FTE
(5) COMPUTER LIBRARY HSC ADMINISTRATION BUDGET	METHOD 1 TO METHOD 5
(6) BUILDING DEPRECIATION	
(7) EDUCATIONAL, ADMINISTRATIVE OUDS MAINTENANCE	
(8) OUDS ADMINISTRATIVE - STUDENT SUPPORT	

-Method 3. The ratio of the College of Dentistry budget to the HSC budget, as described by some authors, was used as an indirect cost determinate.[1]

-Method 4. Similar to Method 3, but the total budgets of the other professional schools are substituted for the HSC budget.

-Method 5. Combining Method 1 and Method 2, the number of dental students, dental hygiene students, plus the full-time O.U.D.S. faculty equivalents are divided by the total number of HSC students plus the full-time HSC faculty equivalents.

-Building depreciation and equipment replacement.

Use of assignment of building depreciation and equipment replacement was done on a straight line depreciation basis. The College of Dentistry was depreciated on a thirty-five year basis with the equipment having a life of fifteen years (The use of depreciation has not been used in cost analysis, but often suggested as a needed indirect cost.[2])

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1. See Symthe, Toward A Definition of Department Size, p. 640; Edward J. Lusk and Janice C. Lusk, Financial and Managerial Control, (Germantown, MD: Aspen, 1979), p. 257.

2. See Earl F. Cheit, The New Depression in Higher Education, (New York: McGraw-Hill, 1971), p. 5; Symthe, Toward a Definition of Department Size, p. 639; Carnegie Commission on Higher Education, The More Effective Use of Resources, p. 121.

Income - Income generated from clinic activity, tuition, instrument rental, capitation and extramural grants were assigned to each department using Method 1-Method 5. Individual grants to each department were credited as income for each department.

Department Indirect Costs - Two methods were used to further assign indirect costs to the departments:

-Method A - The departmental hours were divided by the total curriculum hours to assign these costs. This was suggested by Larimore as a means of indirect cost assessment on a departmental basis.[1]

-Method B. Similar to Method 2, the ratio of departmental FTE:O.U.D.S. FTE.

The influence of the cost variables on cost per student and cost per hour were calculated by the following three equations:

(1) Direct costs or	(a) number of students	= cost	(a) per student
(2) direct costs - Income or	(b) number of curriculum hours		(b) per hour
(3) (Direct costs + Indirect costs) - Income			

1. L. Keith Larimore, "Break-Even Analysis for Higher Education" Money Accounting 56 (Fall 1974), p. 275.

Both for the O.U.D.S. and each department, cost per student and cost per hour were determined by each method. Indirect costs were assigned as described in Table 1 and Table 2. To compare the effect of the various indirect costs, each indirect cost method or factor was used to determine its influence on resultant cost per student and cost per hour.

These basic cost determinations, both for the O.U.D.S. and each department, were done using the Statistical Analysis Systems (SAS) at the Research and Education Center, University of Oklahoma Health Sciences Center.[1] Using a linear regression model (Maximum R^2), the independent cost variables were evaluated for their influence on the dependent variable.[2] The dependent variables, calculated from the three basic cost equations, were (1) number of dental students; (2) cost per student; and (3) cost per hour.

To test the application of the model, budgetary, curricula, and cost data from several colleges of dentistry were used. These data, from one fiscal year, FY 83-84, was compared using cost differences on an institutional and departmental cost per student and cost per hour basis.

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1. SAS User's Guide: Basics (Cary, North Carolina: SAS Institute, 1982), p. 14.

2. See SAS User's Guide: Statistics (Cary, North Carolina: SAS Institute, 1982), p. 101; Rudolf J. Fruend and Ramaon C. Littell, SAS for Linear Models, (Cary, North Carolina: SAS Institute, 1981), p. 22.

Chapter IV

Research Findings

Part I

The summary of the O.U.D.S. cost data and cost centers, used to assign indirect costs and income, are listed in the appendix.[1]

The O.U.D.S. cost per student and cost per hour, using direct costs only, was calculated by dividing the O.U.D.S. yearly budget by either the number of undergraduate dental students enrolled or the total number of curriculum hours (A) as seen in Table 3A. Direct costs minus income was the next method (B). By combining the O.U.D.S. budget with all sources of income, similar costs were computed (C). Two previous cost analysis studies in dental education, the Institute of Medicine Study (I) and the American Association of Dental Schools (R), were used as comparisons.[2] These data were adjusted yearly for inflation using the Consumer Price Index (CPI).[3]

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[1]See appendix B p. 146.

[2]See Costs of Education in Health Professions; Norwood, Cost Study of Dental Education, p. 22.

[3]See appendix B p. 146.

TABLE 3A

COMPARISON OF COST PER STUDENT AND COST PER HOUR USING
(A) DIRECT COST ONLY,
(B) DIRECT COST MINUS INCOME AND
(C) WITH THE O.U.D.S. BUDGET AS INCOME PLUS
(I) INSTITUTE OF MEDICINE STUDY AND
(R) THE A.A.D.S. STUDY

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
COST PER STUDENT	(A)	$ 13,288	$ 10,210	$ 11,399	$ 11,715	$ 13,744	$ 15,866	$ 17,808	$ 17,435
	(B)	10,562	7,538	7,311	7,280	9,526	11,387	13,656	12,567
	(C)	16,013	12,883	15,486	16,150	17,961	20,345	21,959	22,302
	(I)	14,159	15,079	16,240	18,075	20,516	22,649	24,251	25,179
	(R)	7,506	7,994	8,610	9,583	10,877	12,088	12,861	13,349
COST PER HOUR	(A)	462	525	592	721	833	931	1,014	1,010
	(B)	367	388	380	448	577	668	777	728
	(C)	557	663	805	994	1,088	1,194	1,250	1,291

Figure 1 compares the previous cost studies with the three methods listed in Table 3A. The Institute of Medicine (I) and A.A.D.S. (R) studies increased in straight lines paralleling the CPI. In FY 77-78, in each of the other three methods, there are reductions in cost per student with gradual increases until FY 82-83. The FY 77-78 decrease is a function of:

- a small yearly increase in the O.U.D.S. budget (3 percent)
- 62 percent increase in student population
- an increase in total income from the previous year, with increased tuition, fees, student fees, and clinic income.

Cost per student, using direct costs only (A), is influenced by increases (or decreases) in the O.U.D.S. budget and number of students. The cost per student increased until FY 83-84 when the fiscal crisis in Oklahoma reduced legislative appropriations to higher education. When income is subtracted from the O.U.D.S.budget, (B), the average cost per student is reduced by $3,966 with a range of $2,622 (in FY 77-78) to $4,868 (in FY 83-84 when compared to (A)). This increases to a mean reduction of $7,909 per year with a low of $5,345 in FY 77-78 to a high of $8,958 in FY 83-84.

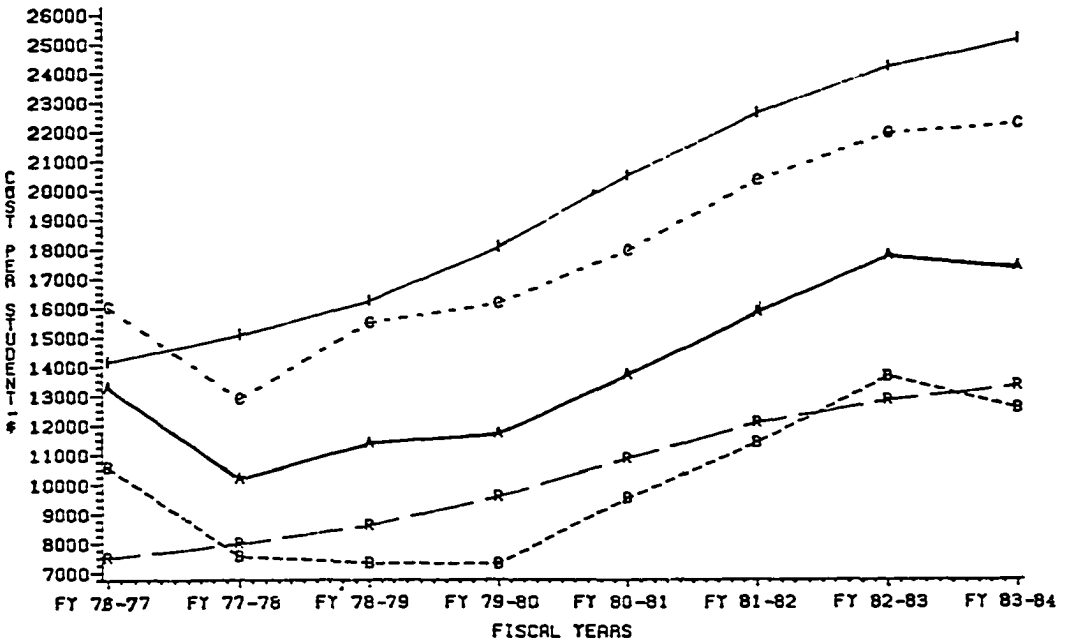

Figure 1. Costs per student using (A) Direct costs or (B) Direct costs minus income.

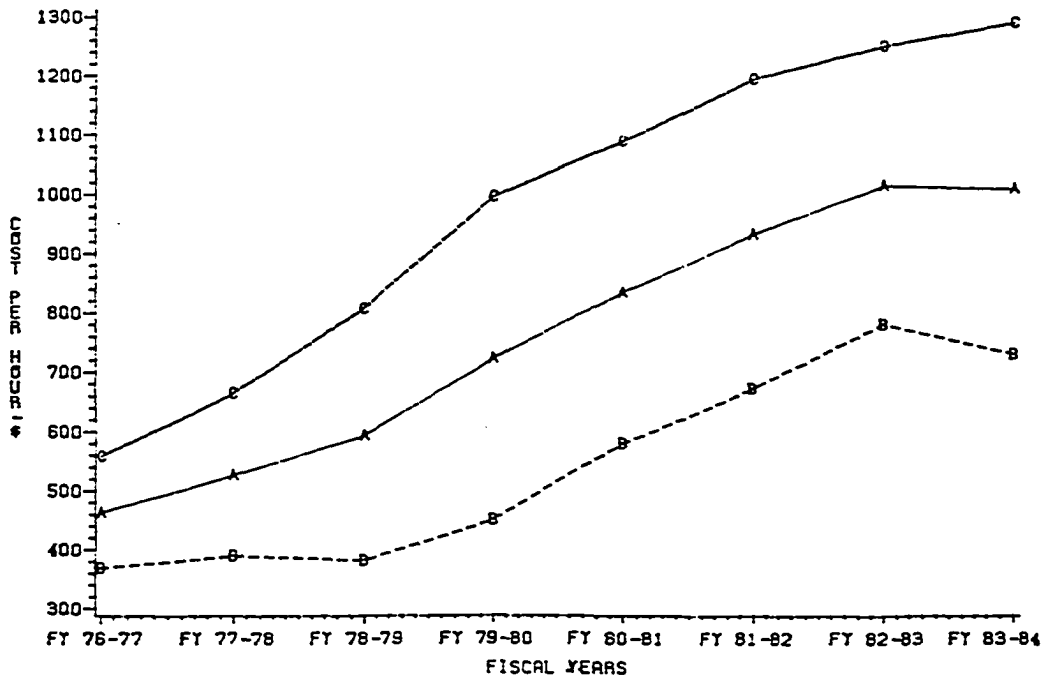

Figure 2. Costs per hour using (A) direct costs and (B) direct costs minus income.

Using similar cost comparisons, cost per hour follow a similar pattern as seen in Figure 2. Total curriculum hours have decreased by 9 percent over the eight year survey period, with little influence on cost per hour. The reduction in cost per hour is less dramatic in FY 77-78 because of this factor. The mean cost per hour with the first method (A) is $761 with a range of $462 to $1,014; the second method, (B), the mean is $541 with a range of $367 to $777; and the third method (C) the mean is $980 with a range of $550 to $1,291.

Table 2 described the five methods used to assign indirect cost factors for the O.U.D.S. cost per student and cost per hour. It is apparent that Methods 1, 3, and 5 are similar, producing corresponding indirect cost assignments (Figure 3). Method 2 adds 11 percent when compared to Methods 1, 3 or 5. Another 6 percent increase is seen with Method 4.

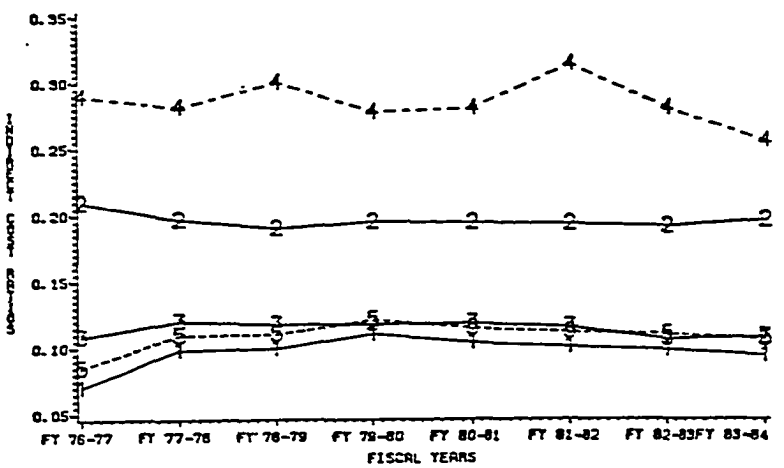

Figure 3. Indirect cost determinates.

The influences of indirect cost on the resultant/cost per student and cost per hour are illustrated in Table 3B. The summary of the actual cost values for Method 1 to 5 are in the appendix.[1] The results of the indirect cost assessments of data processing, library, HSC administration, and building maintenance are seen in (A), both for student (1) and hours (2). Methods 1, 3, and 5 are similar in both cost per student and hour determinations (Figures 4 and 5). As seen in the previous cost determinations, there is a reduction in cost per student in FY 77-78 with an increase for all five methods of assessment beginning in FY 80-81. However, costs per hour began to increase from FY 76-77 showing a gradual increase until FY 78-79 with costs escalating until the fiscal crisis of FY 83-84. This cost pattern was similar to the previous cost determinations, both for student and hours. With the addition of building and equipment depreciation to indirect costs (B), costs increased by approximately 10.5 percent.

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[1]See appendix B p. 146.

TABLE 3B

DIRECT COSTS MINUS INDIRECT COSTS (LIBRARY, HSC ADMINISTRATION BUILDING MAINTENANCE (A)
PLUS BUILDING AND EQUIPMENT DEPRECIATION (B);
THE RESULTANT COST PER STUDENT (1) AND COST PER HOUR (2).

FISCAL YEAR	FY 76-77		FY 77-78		FY 78-79		FY 79-80		FY 80-81		FY 81-82		FY 82-83		FY 83-84	
Method 1	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
(A)	14,158	492	10,595	545	10,799	561	10,960	673	13,608	825	15,851	930	18,975	1,080	17,766	1,025
+																
(B)	16,617	578	12,257	630	12,443	647	12,444	766	15,135	917	17,430	1,022	20,608	1,173	19,311	1,118
Method 2																
(A)	16,729	582	11,868	610	12,017	625	12,092	744	15,078	914	17,436	1,023	20,990	1,195	19,890	1,152
+																
(B)	19,198	667	13,530	696	13,662	710	13,596	837	16,907	1,006	19,016	1,116	22,624	1,228	21,496	1,245
Method 3																
(A)	14,863	517	10,875	559	11,043	574	11,038	679	13,846	839	16,104	945	19,949	1,090	18,003	1,042
+																
(B)	17,322	602	12,537	645	12,688	659	12,543	772	15,375	932	17,534	1,037	20,782	1,183	19,609	1,135
Method 4																
(A)	18,207	633	12,964	667	13,494	701	13,214	814	16,466	998	19,484	1,143	22,906	1,304	21,153	1,225
+																
(B)	20,666	719	14,626	752	15,139	787	14,719	906	17,995	1,091	21,063	1,236	24,539	1,397	22,759	1,318
Method 5																
(A)	14,429	502	10,739	552	10,945	569	11,082	682	13,783	835	16,039	941	19,224	1,094	17,962	1,040
+																
(B)	16,888	587	12,401	638	12,589	654	12,587	775	15,312	928	17,619	1,033	20,858	1,187	19,528	1,733

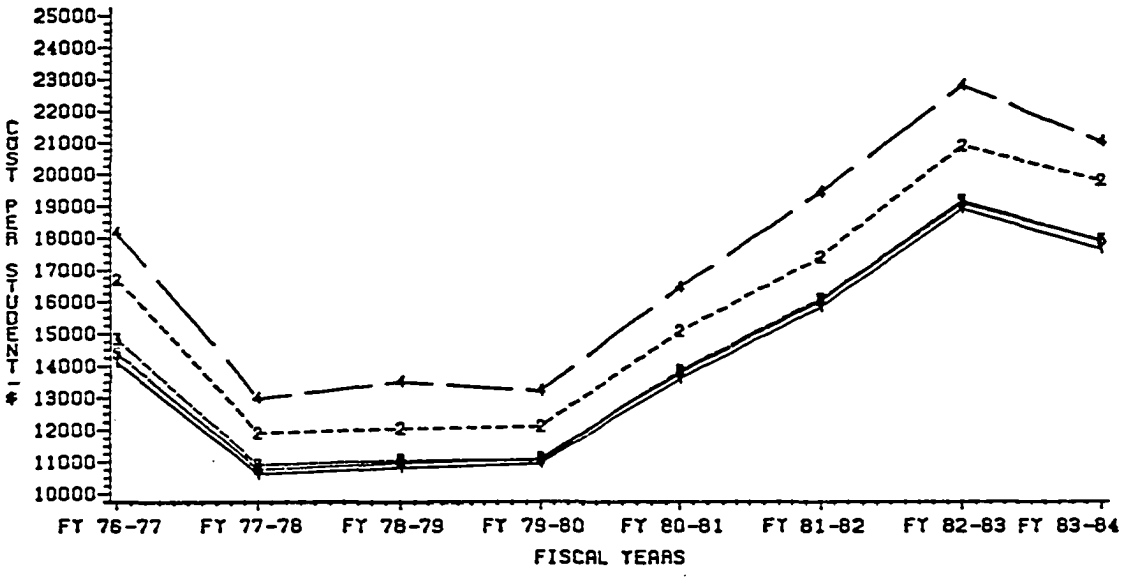

Figure 4. The influence of indirect costs on cost per student.

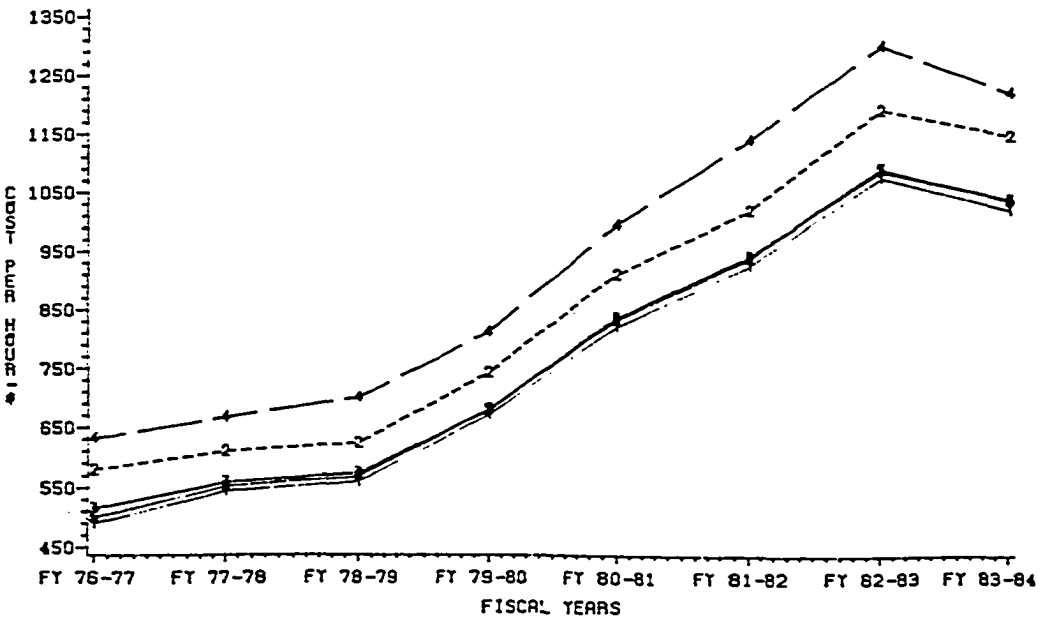

Figure 5. The influence of indirect costs on cost per hour.

To compare the differences of the three cost postulates for O.U.D.S. 1) direct costs, 2) direct costs minus income, and 3) direct costs plus indirect costs minus income; means were computed for the indirect cost variables. Means were determined for both (A) and (B) as seen in Table 3B, combining Methods 1 to 5. These comparisons are represented in Figure 6 (cost per student) and Figure 7 (cost per hour). Figures 6 and 7 compare the five different methods used to calculate costs per student and cost for the eight fiscal years. These five comparisons in Figure 6 are:

1 = direct costs plus indirect costs (excluding depreciation and equipment replacement) minus income ÷ total number of students;

2 = direct costs plus indirect costs (including depreciation and equipment replacement), minus income ÷ total number of students;

3 = direct costs ÷ total number of students;

4 = direct costs minus income ÷ total number of students; and

5 = direct costs plus income ÷ total number of students.

(This key is the same for Figure 7, however, the denominator is total curriculum hours determining cost per hour).

The least costly method of cost determination is number 4, where income is deducted from direct costs, with number 5 the most expensive. Using direct costs only (number 3), cost per student is intermediary. When the

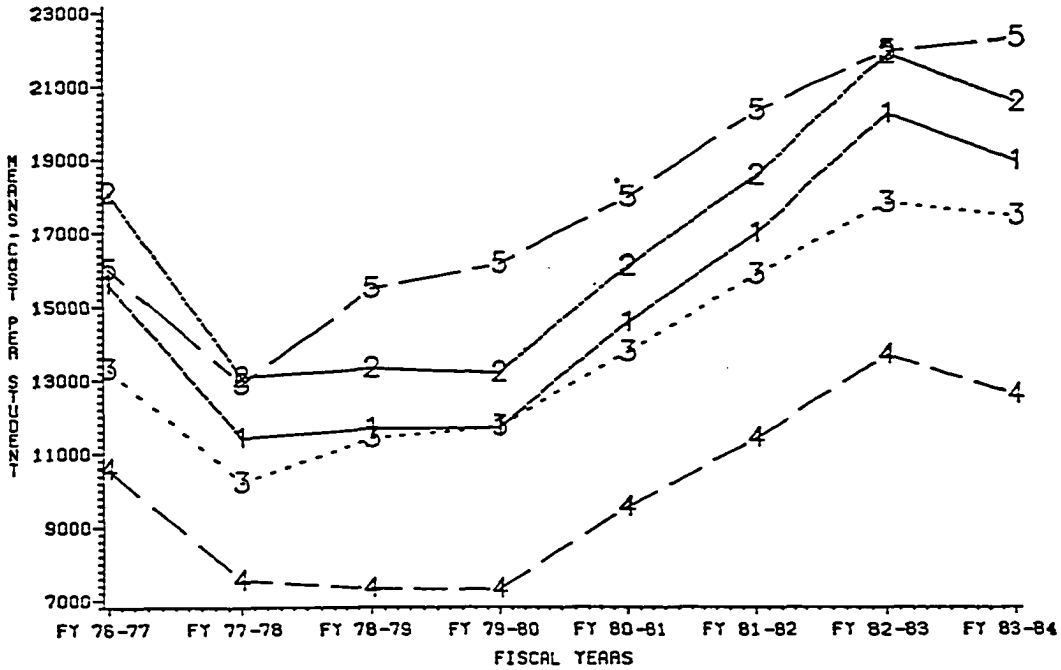

Figure 6. Cost per student using indirect costs.

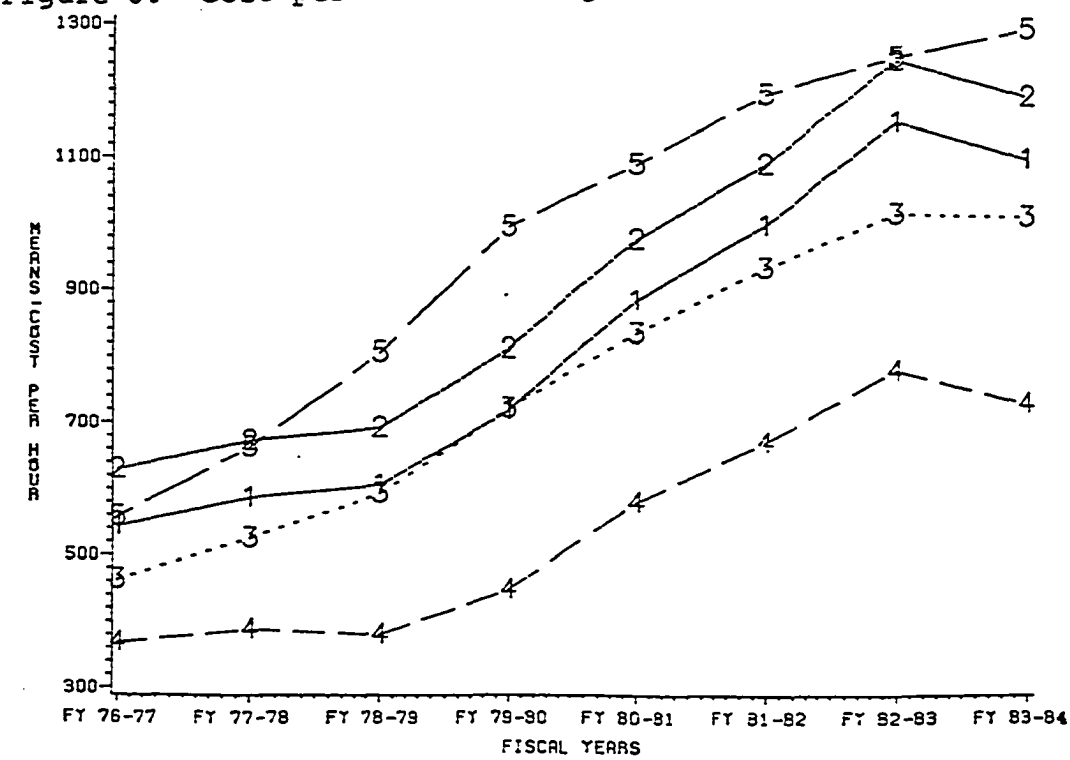

Figure 7. Cost per hour using indirect costs.

initial indirect costs are included, there is an increase as illustrated by number 1. With the inclusion of building depreciation and equipment replacement, there is an additional increase of 11 percent (number 2).

A similar method was used to determine cost per student and cost per hour comparing departments within the College of Dentistry. Direct costs for each department consisted of the budgetary items of faculty and staff salaries, fringe benefits, and operating expenses (travel, supplies, etc.). Direct income included revenue generated in clinical programs plus other sources such as grants or endowments to individual departments. A summary of these data is in the appendix.[1]

For each department, cost per student was determined by direct cost only (A) and direct cost minus income (B). The results are listed in Table 4. Several departmental costs per student should be discussed:

1) Some departments have little differences between (A) or (B) because these departments have little clinical income or extramural resources i.e., Oral Pathology, Dental Service Administration, and Occlusion.

2) In the large clinical departments, with greater direct costs, a higher cost per student results (A). However, because of the higher clinic income generated, the resulting

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[1]See appendix B p. 146.

TABLE 4

COMPARISON OF COST PER STUDENT, BY DEPARTMENT, USING
(A) DIRECT COSTS AND
(B) DIRECT COSTS MINUS INCOME

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD								
PEDODONTICS								
(A)	654	422	503	605	584	904	930	905
(B)	538	339	348	430	413	721	728	633
ORTHODONTICS								
(A)	523	447	523	416	416	758	959	741
(B)	501	435	502	393	395	724	931	709
PERIODONTICS								
(A)	436	468	729	807	534	906	1,166	1,128
(B)	396	438	664	714	472	807	1,072	1,033
ORAL DIAGNOSIS								
(A)	1,041	687	696	752	776	1,131	1,190	1,113
(B)	923	587	551	616	659	1,001	1,066	951
ORAL PATHOLOGY								
(A)	502	363	544	563	651	769	852	823
(B)	502	363	544	563	651	769	852	823
DENT SERV ADMIN								
(A)	1,621	688	767	954	1,040	1,128	1,255	1,202
(B)	239	143	218	919	1,007	1,092	1.255	1,202

TABLE 4 (CONTINUED--PAGE TWO)

COMPARISON OF COST PER STUDENT, BY DEPARTMENT, USING
(A) DIRECT COST ONLY,
(B) DIRECT COST MINUS INCOME

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD								
ORAL SURGERY								
(A)	489	453	548	524	569	439	516	515
(B)	487	414	455	443	492	338	431	398
FIXED PROSTHODONTICS								
(A)	1,098	777	992	1,129	1,140	1,370	1,422	1,463
(B)	815	591	698	599	572	807	796	815
OPERATIVE DENTISTRY								
(A)	1,073	719	831	834	878	1,047	1,357	1,273
(B)	978	637	690	647	720	827	1,117	970
REMOVABLE PROSTHODONTICS								
(A)	986	671	942	910	1,023	1,348	1,450	1,393
(B)	757	508	693	563	729	1,062	1,169	1,062
ENDODONTICS								
(A)	328	199	310	406	290	400	481	501
(B)	278	160	194	302	176	241	323	343
OCCLUSION								
(A)	342	313	380	367	371	414	445	477
(B)	340	313	380	367	371	413	444	475

TABLE 4 (CONTINUED--PAGE THREE)

COMPARISON OF COST PER STUDENT, BY DEPARTMENT, USING
(A) DIRECT COST ONLY,
(B) DIRECT COST MINUS INCOME

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD								
DENTAL MATERIALS								
(A)	400	390	432	415	414	516	547	1,202
(B)	355	362	410	413	414	504	547	1,202
DENTAL HYGIENE								
(A)	2,518	3,276	2,397	2,674	3,040	3,514	4,644	4,254
(B)	2,390	3,107	2,196	2,459	2,870	3,367	4,454	4,065
BASIC SCIENCE*								
(A)	1,518	1,440	1,556	1,512	1,746	1,868	1,992	2,104

cost per student (B) is less i.e., Fixed Prosthodontics, Operative Dentistry, and Removable Prosthodontics.

3) Dental Hygiene, because of the smaller number of dental hygiene students per class, has a much higher cost per student compared to the typical dental school departments.[1] (In the Department of Basic Sciences, no record was available for grant income, thus no (B) for that department).

For the several departments, Figure 8 represents the comparison of means and ranges, cost per student, for the eight fiscal years surveyed. Several observations when comparing (A) with (B) are:

1) In general, there is a wider range of cost per student when (B) is compared to (A).

2) The mean is higher in (A).

3) The large clinical departments (No. 8, No. 9 and No. 10) have higher costs per student, despite higher clinical incomes, which influences this computation.

4) The loss of a large source of extramural income can cause a dramatic change in both the mean and range (B) as seen in No. 6 (Dental Service Administration).[2]

Comparisons of cost per hour for both methods (A and B) are listed in Table 5. Similar to Table 4, those departments with minimum income, either clinical or

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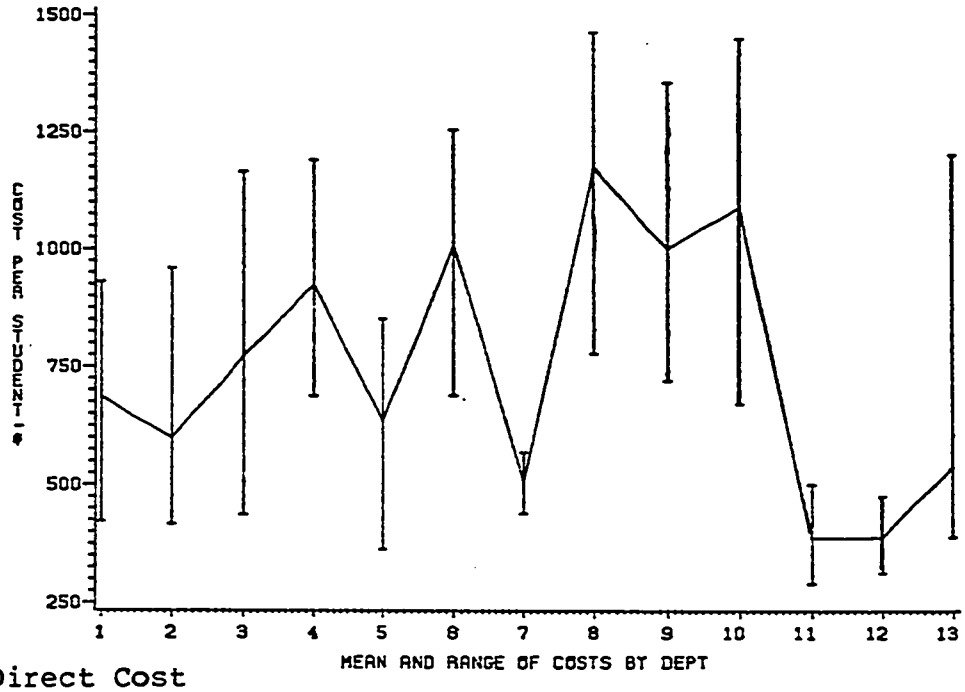
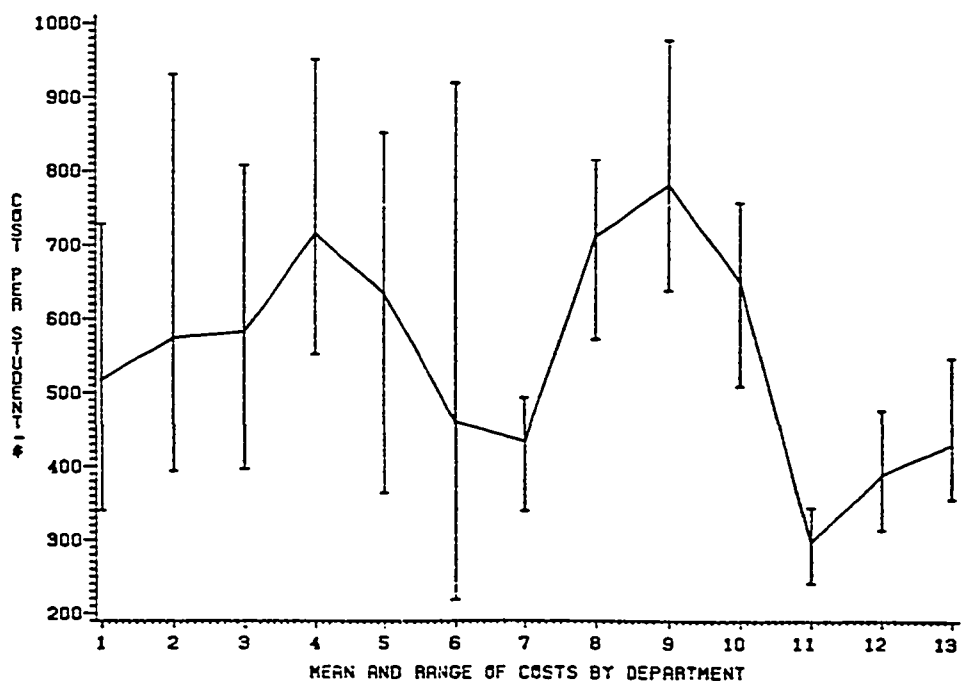
[1]See appendix B p. 146.

[2]See appendix B p. 146.

Figure 8. Means and ranges of cost per student for each department.



(A) Direct Cost



(B) Direct cost minus income.

TABLE 5

COMPARISON OF COST PER HOUR, BY DEPARTMENT, USING
(A) DIRECT COSTS AND
(B) DIRECT COSTS MINUS INCOME

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD								
PEDODONTICS								
(A)	114	279	331	582	553	770	712	707
(B)	94	224	229	413	391	614	557	494
ORTHODONTICS								
(A)	247	337	393	305	301	532	590	465
(B)	237	328	377	288	285	508	572	445
PERIODONTICS								
(A)	178	305	473	551	359	591	656	647
(B)	162	286	431	487	317	526	603	593
ORAL DIAGNOSIS								
(A)	398	420	424	649	659	933	601	573
(B)	353	359	336	531	560	825	538	489
ORAL PATHOLOGY								
(A)	458	528	788	1,362	1,552	1,778	2,076	2,045
(B)	457	528	788	1,362	1,552	1,778	2,076	2,045
DENT SERV ADMIN								
(A)	662	449	499	823	884	931	1,419	1,386
(B)	97	93	141	793	856	901	1,419	1,386

TABLE 5 (CONTINUED--PAGE TWO)

COMPARISON OF COST PER HOUR, BY DEPARTMENT, USING
(A) DIRECT COSTS,
(B) DIRECT COSTS MINUS INCOME

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD								
ORAL SURGERY								
(A)	349	517	622	906	968	724	623	634
(B)	347	472	516	765	837	558	520	490
FIXED PROSTHODONTICS								
(A)	304	344	437	572	570	664	615	646
(B)	225	261	307	304	286	391	344	359
OPERATIVE DENTISTRY								
(A)	383	410	472	571	591	684	835	799
(B)	349	364	392	443	485	541	687	609
REMOVABLE PROSTHODONTICS								
(A)	359	390	545	570	632	808	827	810
(B)	275	295	401	353	450	636	667	618
ENDODONTICS								
(A)	267	259	402	744	524	701	751	798
(B)	226	209	252	553	318	421	503	546
OCCLUSION								
(A)	266	389	490	510	509	550	585	639
(B)	264	389	470	510	508	548	583	637

TABLE 5 (CONTINUED--PAGE THREE)

COMPARISON OF COST PER HOUR, BY DEPARTMENT, USING
(A) DIRECT COSTS,
(B) DIRECT COSTS MINUS INCOME

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD								
DENTAL MATERIALS								
(A)	1,101	1,716	1,893	1,875	1,844	2,228	2,327	5,216
(B)	976	1,592	1,795	1,868	1,844	2,178	2,327	5,216
DENTAL HYGIENE								
(A)	114	152	1,225	139	155	171	180	165
(B)	108	144	1,123	128	146	164	173	158
BASIC SCIENCE*								
(A)	203	286	312	657	680	784	709	704

calculations. The clinical departments have lower costs per hour because of greater hours in the curriculum yielding greater clinic income. The Department of Dental Hygiene has a high cost per student, yet has a much lower cost per hour. This is related to the number of curriculum hours, approximately 1,000 hours per year.

Figure 9 graphically compares means of cost per hour for both computations. Direct cost only (A) has a much wider range in costs than (B) with the exceptions of Departments 5, 6, and 13, which are all non-clinical departments. Because of the lack of clinical income or increased extramural income, these departments have much higher costs per hour. Dental Hygiene and Basic Sciences are not included.

Indirect costs for individual departments were calculated as outlined in Table 2.[1] These were (A) clinic support costs, (B) equipment replacement and (C) maintenance costs, which are summarized in the appendix.[2] Yearly income from O.U.D.S. capitation, undergraduate grants, student tuition, instrument fees, and application fees were credited to each department by either the total department hours - total curriculum hours (Method A) or departmental FTE - O.U.D.S. FTE (Method B), also available in the appendix.[3]

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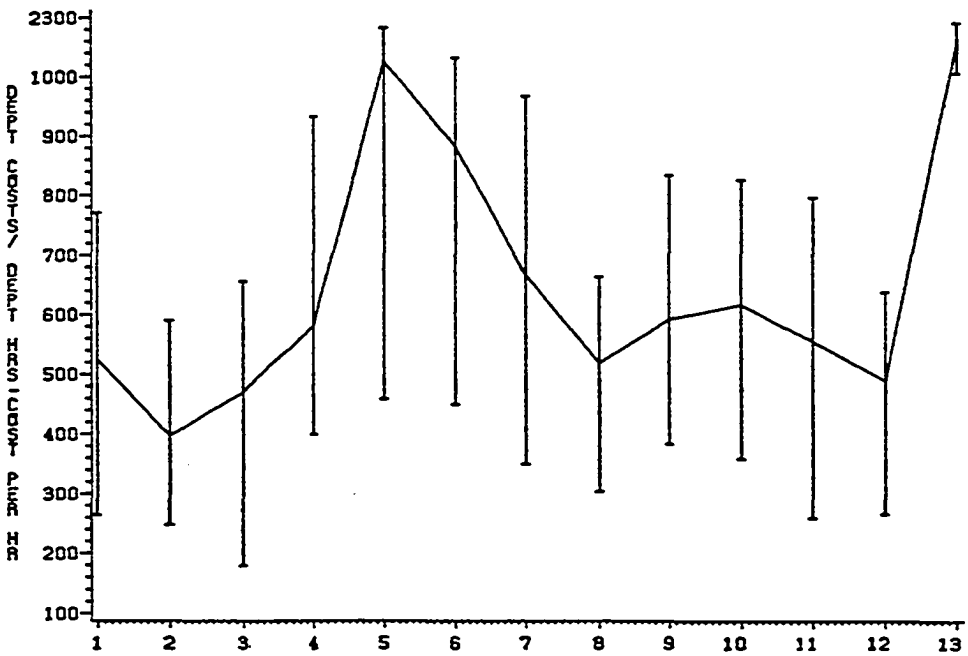
[1]See Table 2 p. 51 above.

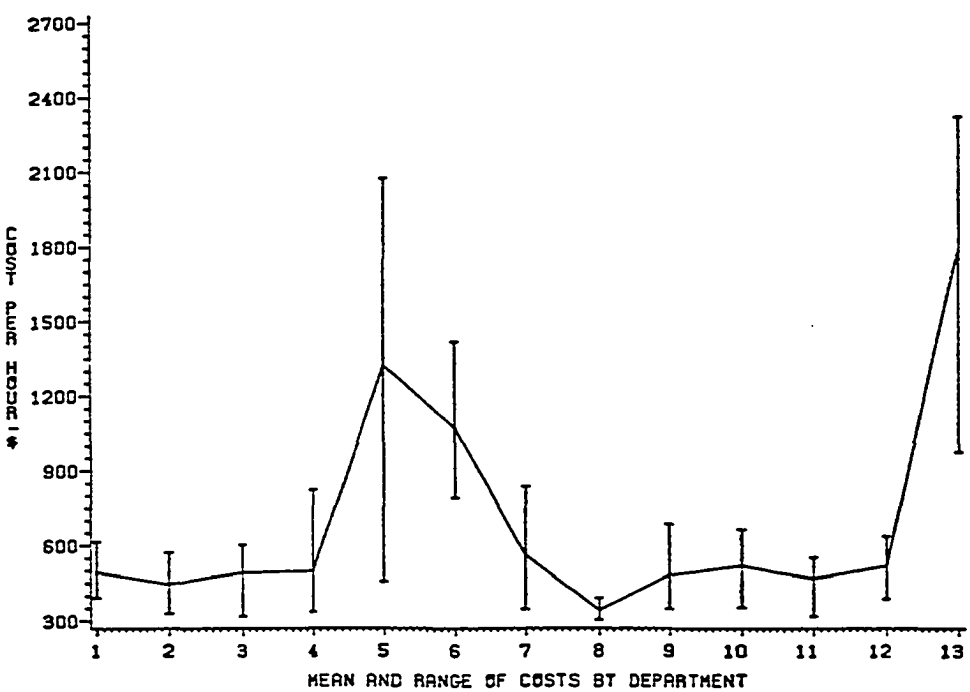
[2]See appendix B p. 146.

[3]See appendix B p. 146.

Figure 9. Measured usages of cost per hour for each department.



(A) Direct cost.



(B) Direct cost minus income.

Indirect costs from the HSC budget for computer usage, library, and HSC administration was apportioned previously by five methods. Then these five indirect cost totals were assigned to each department by either Method A or Method B. By the same methods, building depreciation, education, and administrative student support were determined. These also are listed in the appendix.[1] The total costs for each department were finalized by combining direct costs with indirect costs, reported in Table 22 of the appendix.[2] To arrive at the net cost, total net income was subtracted from the total net costs.[3] These totals were used for cost per student and cost per hour calculations.

The influence of indirect costs on cost per student and cost per hour are reported in Tables 6 and 7. Observations common to both costs per student and hour are:

- The addition of indirect costs increases the cost when compared to direct cost only or direct cost minus income.
- Method A produces higher costs per student and hour when compared to Method B.
- As previously suggested, generally Methods 2 and 4 yield higher costs per student and hour, irrespective of departmental indirect cost assignment by Method A or

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[1]See appendix B p. 146.

[2]See appendix B p. 146.

[3]See appendix B p. 146.

Method B.

- In FY 77-78 there is a reduction in cost per student, but not in costs per hour.
- By adding indirect costs, cost per student decreases when compared to previous methods. However, cost per hour increases beginning in FY 80-81, irrespective of the methods used.

As seen in previous calculations, the Department of Dental Hygiene has a large cost per student, but a comparable cost per hour to other departments.

Data from Table 6 were used to calculate the means for each department, combining fiscal years (Figure 10). The objective was to compare average costs per student and ranges for the seven different methods used. Four typical departments were selected; (A) and (B) are clinical departments with (C) and (D) representing non-clinical departments. The seven methods (on the horizontal axis, Figure 10) are the different cost factors divided by number of students. These are

1 - direct costs

2 - direct costs minus income

3 - Method 1 (Method A)

4 - Method 2 (Method A)

5 - Method 3 (Method A)

6 - Method 4 (Method A)

7 - Method 5 (Method A)

TABLE 6

COST PER STUDENT

INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
PEDODONTICS									
	METHOD 1	2,373	982	1,033	956	1,066	1,449	1,700	1,541
	METHOD 2	2,884	1,081	1,130	1,030	1,160	1,558	1,850	1,704
A	METHOD 3	2,513	1,004	1,053	962	1,081	1,466	1,712	1,563
	METHOD 4	3,178	1,166	1,246	1,102	1,249	1,699	1,992	1,797
	METHOD 5	2,427	993	1,045	965	1,077	1,462	1,718	1,560
	METHOD 1	2,049	924	996	959	1,046	1,461	1,688	1,516
	METHOD 2	2,325	989	1,061	1,036	1,127	1,579	1,130	1,657
B	METHOD 3	2,125	938	1,009	966	1,059	1,480	1,700	1,535
	METHOD 4	2,483	1,045	1,140	1,111	1,202	1,731	1,966	1,738
	METHOD 5	1,435	958	1,030	966	1,068	1,468	1,711	1,546
ORTHODONTICS									
	METHOD 1	1,269	874	951	946	1,089	1,485	1,633	1,712
	METHOD 2	1,427	947	1,036	1,043	1,212	1,618	1,820	1,913
A	METHOD 3	1,321	893	968	955	1,109	1,507	1,650	1,739
	METHOD 4	1,567	1,036	1,138	1,137	1,328	1,789	1,997	2,030
	METHOD 5	1,288	883	961	958	1,103	1,501	1,657	1,735
	METHOD 1	1,097	857	949	893	985	1,432	1,503	1,591
	METHOD 2	1,153	913	1,018	943	1,035	1,527	1,608	1,695
B	METHOD 3	1,115	872	963	897	993	1,448	1,512	1,605
	METHOD 4	1,202	982	1,102	991	1,082	1,649	1,708	1,756
	METHOD 5	1,155	879	971	945	1,054	1,475	1,577	1,667

TABLE 6 (CONTINUED--PAGE TWO)
COST PER STUDENT
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
PERIODONTICS									
	METHOD 1	1,343	988	1,232	1,341	1,257	1,669	2,300	2,192
	METHOD 2	1,526	1,072	1,329	1,445	1,390	1,811	2,504	2,412
A	METHOD 3	1,403	1,010	1,251	1,350	1,279	1,691	2,318	2,222
	METHOD 4	1,688	1,175	1,448	1,546	1,515	1,995	2,698	2,540
	METHOD 5	1,364	998	1,243	1,354	1,273	1,686	2,325	2,218
	METHOD 1	1,229	959	1,234	1,339	1,180	1,651	2,282	2,146
	METHOD 2	1,344	1,015	1,348	1,441	1,258	1,780	2,474	2,330
B	METHOD 3	1,267	974	1,257	1,348	1,193	1,671	2,298	2,172
	METHOD 4	1,446	1,084	1,487	1,541	1,332	1,948	2,656	2,437
	METHOD 5	1,277	991	1,233	1,353	1,237	1,677	2,314	2,192
ORAL DIAGNOSIS									
	METHOD 1	1,836	1,103	1,070	1,112	1,283	1,684	2,346	2,155
	METHOD 2	2,031	1,192	1,174	1,195	1,388	1,797	2,573	2,401
A	METHOD 3	1,900	1,126	1,091	1,119	1,300	1,702	2,365	2,189
	METHOD 4	2,204	1,302	1,301	1,275	1,487	1,943	2,789	2,543
	METHOD 5	1,859	1,114	1,083	1,123	1,295	1,698	2,374	2,184
	METHOD 1	1,775	1,080	1,067	1,110	1,263	1,731	2,271	2,049
	METHOD 2	1,934	1,148	1,146	1,190	1,355	1,877	2,452	2,208
B	METHOD 3	1,827	1,098	1,083	1,117	1,278	1,754	2,287	2,070
	METHOD 4	2,074	1,231	1,241	1,269	1,441	2,066	2,624	2,300
	METHOD 5	1,812	1,108	1,098	1,122	1,286	1,721	2,329	2,124

TABLE 6 (CONTINUED--PAGE THREE)
COST PER STUDENT
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

	FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
	DEPARTMENT/METHOD								
	ORAL PATHOLOGY								
	METHOD 1	778	502	670	681	803	935	1,009	966
	METHOD 2	860	540	714	710	840	975	1,056	1,017
A	METHOD 3	805	512	679	684	809	941	1,013	973
	METHOD 4	933	856	767	739	875	1,027	1,101	1,046
	METHOD 5	788	507	675	685	807	940	1,015	972
	METHOD 1	774	498	671	706	842	977	1,073	1,017
	METHOD 2	853	532	729	757	907	1,048	1,160	1,108
B	METHOD 3	800	507	683	710	852	989	1,081	1,029
	METHOD 4	923	574	798	807	968	1,139	1,244	1,162
	METHOD 5	785	506	667	691	826	961	1,054	1,000
	DENT SERV ADMIN								
	METHOD 1	946	520	579	1,202	1,430	1,558	1,734	1,647
	METHOD 2	1,129	604	677	1,357	1,535	1,671	1,836	1,757
A	METHOD 3	1,006	542	599	1,403	1,447	1,576	1,743	1,662
	METHOD 4	1,291	707	795	1,342	1,634	1,816	1,932	1,821
	METHOD 5	967	530	591	1,221	1,443	1,571	1,747	1,660
	METHOD 1	1,011	535	582	1,222	1,448	1,542	1,897	1,701
	METHOD 2	1,234	634	700	1,397	1,565	1,643	2,101	1,854
B	METHOD 3	1,084	561	605	1,448	1,467	1,558	1,915	1,722
	METHOD 4	1,430	754	844	1,380	1,675	1,774	2,295	1,943
	METHOD 5	1,018	534	578	1,221	1,451	1,563	1,846	1,691

TABLE 6 (CONTINUED--PAGE FOUR)
COST PER STUDENT
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

	FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
	DEPARTMENT/METHOD								
	ORAL SURGERY								
	METHOD 1	987	699	744	671	777	652	879	805
	METHOD 2	1,092	747	800	712	830	708	974	908
A	METHOD 3	1,022	712	755	675	786	661	887	819
	METHOD 4	1,185	806	867	753	879	781	1,064	967
	METHOD 5	999	705	750	676	784	659	890	817
	METHOD 1	911	695	745	693	783	626	801	773
	METHOD 2	971	739	814	752	839	664	848	849
B	METHOD 3	931	707	759	698	792	632	805	783
	METHOD 4	1,024	793	898	811	893	713	892	894
	METHOD 5	941	704	743	682	786	646	843	799
	FIXED PROSTHODONTICS								
	METHOD 1	2,195	1,388	1,517	1,453	1,648	1,984	1,444	2,378
	METHOD 2	2,465	1,512	1,661	1,593	1,827	2,175	1,741	2,665
A	METHOD 3	2,284	1,421	1,546	1,465	1,677	2,014	1,469	2,417
	METHOD 4	2,704	1,664	1,835	1,729	1,995	2,423	2,022	2,830
	METHOD 5	2,227	1,403	1,534	1,470	1,669	2,006	1,480	2,412
	METHOD 1	2,089	1,351	1,513	1,428	1,589	1,933	1,412	2,262
	METHOD 2	2,295	1,440	1,628	1,546	1,726	2,089	1,621	2,455
B	METHOD 3	2,157	1,375	1,536	1,438	1,612	1,958	1,429	2,288
	METHOD 4	2,478	1,548	1,767	1,661	1,855	2,290	1,818	2,567
	METHOD 5	2,145	1,395	1,552	1,464	1,642	1,981	1,496	2,346

TABLE 6 (CONTINUED--PAGE FIVE)
COST PER STUDENT
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
OPERATIVE DENTISTRY									
	METHOD 1	2,053	1,259	1,331	1,291	1,526	1,711	2,322	2,110
	METHOD 2	2,262	1,356	1,442	1,394	1,658	1,854	2,508	2,311
A	METHOD 3	2,121	1,285	1,353	1,300	1,548	1,734	2,338	2,137
	METHOD 4	2,447	1,473	1,577	1,495	1,783	2,037	2,685	2,428
	METHOD 5	2,077	1,271	1,344	1,303	1,542	1,728	2,345	2,134
	METHOD 1	2,148	1,267	1,331	1,311	1,575	1,779	2,363	2,133
	METHOD 2	2,413	1,371	1,448	1,432	1,742	1,970	2,576	2,354
B	METHOD 3	2,235	1,294	1,355	1,321	1,602	1,810	2,381	2,163
	METHOD 4	2,649	1,498	1,589	1,550	1,900	2,217	2,778	2,481
	METHOD 5	2,150	1,273	1,347	1,309	1,565	1,762	2,370	2,147
REMOVABLE PROSTHODONTICS									
	METHOD 1	1,806	1,114	1,317	1,262	1,606	2,023	2,381	2,206
	METHOD 2	2,011	1,208	1,427	1,375	1,751	2,178	2,583	2,423
A	METHOD 3	1,873	1,138	1,339	1,272	1,630	2,048	2,399	2,235
	METHOD 4	2,193	1,323	1,560	1,485	1,887	2,379	2,774	2,549
	METHOD 5	1,830	1,125	1,331	1,276	1,624	2,041	2,406	2,231
	METHOD 1	1,754	1,095	1,318	1,250	1,586	2,024	2,390	1,272
	METHOD 2	1,929	1,172	1,433	1,353	1,717	2,179	2,597	2,362
B	METHOD 3	1,812	1,115	1,341	1,259	1,608	2,049	2,408	2,197
	METHOD 4	2,083	1,265	1,572	1,452	1,840	2,380	2,794	2,471
	METHOD 5	1,790	1,121	1,327	1,273	1,614	2,042	2,412	2,212

TABLE 6 (CONTINUED--PAGE SIX)
COST PER STUDENT
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
ENDODONTICS									
	METHOD 1	789	463	513	600	541	643	839	832
	METHOD 2	880	505	562	639	590	697	913	912
A	METHOD 3	819	474	523	603	549	652	845	843
	METHOD 4	962	557	621	676	637	765	983	958
	METHOD 5	799	468	519	605	547	650	848	842
	METHOD 1	708	437	512	610	535	645	819	821
	METHOD 2	752	454	548	658	581	699	880	892
B	METHOD 3	722	442	518	614	543	654	824	831
	METHOD 4	790	475	592	705	624	769	938	932
	METHOD 5	737	462	527	607	544	651	836	835
OCCLUSION									
	METHOD 1	720	516	574	598	671	738	867	872
	METHOD 2	816	560	625	649	736	808	955	966
A	METHOD 3	752	527	584	602	681	749	875	884
	METHOD 4	901	614	687	698	797	898	1,038	1,021
	METHOD 5	731	521	580	604	678	746	878	883
	METHOD 1	652	509	574	592	649	712	849	838
	METHOD 2	708	546	624	638	699	764	925	906
B	METHOD 3	670	518	584	596	657	712	855	847
	METHOD 4	757	592	684	683	746	831	997	945
	METHOD 5	679	519	581	602	668	733	867	864

TABLE 6 (CONTINUED--PAGE SEVEN)
COST PER STUDENT
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
DENTAL MATERIALS									
	METHOD 1	469	425	473	493	512	610	678	1,325
	METHOD 2	496	438	487	508	532	632	705	1,354
A	METHOD 3	477	428	476	494	515	614	680	1,329
	METHOD 4	520	453	505	524	551	660	731	1,371
	METHOD 5	472	427	475	495	514	613	681	1,329
	METHOD 1	490	447	476	514	545	646	728	1,528
	METHOD 2	529	481	514	548	588	693	786	1,721
B	METHOD 3	503	456	483	517	552	653	733	1,554
	METHOD 4	564	523	560	581	629	754	841	1,833
	METHOD 5	488	432	460	500	530	631	712	1,351
DENTAL HYGIENE									
	METHOD 1	10,058	10,335	7,717	11,078	13,629	15,040	22,395	22,042
	METHOD 2	11,702	11,513	7,841	12,436	15,372	16,945	25,340	25,289
A	METHOD 3	10,598	10,643	7,742	11,194	13,911	15,345	22,649	22,484
	METHOD 4	13,157	12,952	7,991	13,758	17,018	19,404	28,140	27,167
	METHOD 5	10,250	10,478	7,732	11,246	13,837	15,266	22,760	22,423
	METHOD 1	8,533	9,336	8,493	9,422	11,085	12,496	16,945	16,524
	METHOD 2	9,419	10,010	9,107	10,116	11,845	13,363	17,747	17,385
B	METHOD 3	8,824	9,512	8,616	9,481	11,209	12,635	17,014	16,641
	METHOD 4	10,203	10,833	9,851	10,793	12,562	14,481	18,510	17,883
	METHOD 5	9,017	9,876	8,154	10,152	12,027	13,441	18,640	18,194

TABLE 6 (CONTINUED--PAGE EIGHT)
COST PER STUDENT
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

	FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
	DEPARTMENT/METHOD								
	BASIC SCIENCE*								
	METHOD 1	2,485	1,702	1,386	1,578	1,909	2,018	2,531	2,160
	METHOD 2	3,041	1,978	1,702	1,763	2,146	2,273	2,859	2,516
A	METHOD 3	2,231	1,436	1,047	1,380	1,691	1,796	2,263	1,911
	METHOD 4	2,368	1,521	1,057	1,440	1,763	1,889	2,388	2,016
	METHOD 5	2,213	1,430	1,047	1,381	1,689	1,794	2,266	1,910

TABLE 7

COST PER HOUR

INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

	FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
	DEPARTMENT/METHOD								
	PEDODONTICS								
	METHOD 1	415	649	680	919	1,009	1,234	1,300	1,203
	METHOD 2	504	715	744	990	1,098	1,327	1,415	1,329
A	METHOD 3	439	663	693	925	1,024	1,249	1,310	1,220
	METHOD 4	556	771	821	1,059	1,183	1,447	1,524	1,403
	METHOD 5	424	656	688	927	1,020	1,245	1,315	1,218
	METHOD 1	358	611	656	922	991	1,244	1,291	1,183
	METHOD 2	406	654	699	996	1,067	1,345	1,401	1,293
B	METHOD 3	371	620	664	928	1,003	1,261	1,301	1,198
	METHOD 4	434	691	750	1,068	1,138	1,475	1,504	1,357
	METHOD 5	381	633	678	928	1,011	1,250	1,309	1,207
	ORTHODONTICS								
	METHOD 1	599	659	715	695	788	1,043	1,005	1,074
	METHOD 2	674	714	778	766	877	1,136	1,120	1,200
A	METHOD 3	624	674	728	701	802	1,057	1,015	1,091
	METHOD 4	740	781	855	835	961	1,256	1,229	1,273
	METHOD 5	608	666	722	704	798	1,054	1,019	1,089
	METHOD 1	518	647	713	656	713	1,005	925	998
	METHOD 2	544	689	765	692	749	1,071	989	1,064
B	METHOD 3	527	658	724	659	718	1,016	930	1,007
	METHOD 4	568	741	828	728	783	1,157	1,050	1,101
	METHOD 5	545	663	729	694	763	1,035	970	1,046

TABLE 7 (CONTINUED--PAGE TWO)
COST PER HOUR
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
PERIODONTICS									
	METHOD 1	548	644	800	915	845	1,088	1,294	1,258
	METHOD 2	623	699	864	986	934	1,181	1,409	1,384
A	METHOD 3	573	659	813	921	860	1,103	1,304	1,275
	METHOD 4	689	766	941	1,055	1,019	1,302	1,518	1,458
	METHOD 5	557	651	808	924	856	1,099	1,309	1,273
	METHOD 1	502	626	802	914	793	1,077	1,284	1,232
	METHOD 2	549	662	876	984	846	1,161	1,392	1,337
B	METHOD 3	517	635	817	920	802	1,090	1,293	1,246
	METHOD 4	590	707	966	1,052	896	1,271	1,495	1,398
	METHOD 5	521	647	801	924	831	1,094	1,302	1,258
ORAL DIAGNOSIS									
	METHOD 1	703	675	652	960	1,091	1,389	1,184	1,110
	METHOD 2	778	729	716	1,031	1,180	1,482	1,299	1,236
A	METHOD 3	728	689	665	966	1,105	1,404	1,194	1,127
	METHOD 4	844	796	792	1,100	1,264	1,602	1,408	1,310
	METHOD 5	712	681	660	969	1,101	1,400	1,199	1,125
	METHOD 1	680	661	650	958	1,074	1,427	1,147	1,055
	METHOD 2	740	703	698	1,027	1,152	1,548	1,238	1,137
B	METHOD 3	700	672	660	964	1,087	1,447	1,155	1,066
	METHOD 4	794	753	756	1,095	1,225	1,704	1,325	1,184
	METHOD 5	694	678	669	968	1,094	1,419	1,176	1,094

TABLE 7 (CONTINUED--PAGE THREE)
COST PER HOUR
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
ORAL PATHOLOGY									
	METHOD 1	709	731	971	1,649	1,914	2,163	2,459	2,401
	METHOD 2	784	786	1,035	1,720	2,004	2,256	2,574	2,528
A	METHOD 3	734	746	984	1,655	1,929	2,178	2,469	2,419
	METHOD 4	850	853	1,111	1,789	2,088	2,376	2,683	2,601
	METHOD 5	718	738	979	1,658	1,925	2,174	2,473	2,416
	METHOD 1	705	726	974	1,709	2,008	2,261	2,616	2,527
	METHOD 2	777	775	1,057	1,833	2,163	2,424	2,829	2,756
B	METHOD 3	729	739	990	1,720	2,033	2,287	2,234	2,558
	METHOD 4	841	836	1,157	1,954	2,309	2,636	3,031	2,888
	METHOD 5	715	737	967	1,673	1,969	2,223	2,569	2,487
DENT SERV ADMIN									
	METHOD 1	386	339	376	1,037	1,216	1,285	1,961	1,900
	METHOD 2	461	394	440	1,171	1,305	1,378	2,075	2,026
A	METHOD 3	411	353	389	1,211	1,230	1,300	1,971	1,917
	METHOD 4	527	461	516	1,158	1,389	1,498	2,185	2,099
	METHOD 5	395	346	384	1,054	1,227	1,296	1,975	1,915
	METHOD 1	413	349	378	1,055	1,231	1,272	2,145	1,962
	METHOD 2	504	413	455	1,205	1,330	1,356	2,376	2,138
B	METHOD 3	443	366	393	1,249	1,247	1,285	2,165	1,986
	METHOD 4	584	492	548	1,191	1,424	1,464	2,595	2,241
	METHOD 5	415	348	376	1,054	1,234	1,289	2,087	1,949

TABLE 7 (CONTINUED--PAGE FOUR)
COST PER HOUR
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
ORAL SURGERY									
	METHOD 1	704	796	844	1,159	1,322	1,076	1,060	991
	METHOD 2	778	851	907	1,230	1,412	1,169	1,175	1,118
A	METHOD 3	728	811	856	1,165	1,337	1,091	1,070	1,008
	METHOD 4	845	918	984	1,299	1,496	1,289	1,284	1,191
	METHOD 5	712	803	851	1,168	1,333	1,087	1,074	1,006
	METHOD 1	650	972	845	1,196	1,332	1,033	967	951
	METHOD 2	692	842	924	1,299	1,428	1,095	1,023	1,045
B	METHOD 3	664	805	861	1,204	1,348	1,043	972	964
	METHOD 4	730	904	1,018	1,399	1,518	1,176	1,077	1,100
	METHOD 5	671	802	843	1,147	1,338	1,066	1,017	983
FIXED PROSTHODONTICS									
	METHOD 1	608	614	668	737	824	962	624	1,049
	METHOD 2	682	669	731	808	913	1,055	753	1,176
A	METHOD 3	632	628	681	743	838	977	635	1,066
	METHOD 4	749	736	808	877	997	1,175	875	1,249
	METHOD 5	616	621	676	746	834	973	640	1,064
	METHOD 1	578	598	667	725	794	937	611	998
	METHOD 2	635	637	717	784	863	1,013	701	1,083
B	METHOD 3	597	608	677	730	806	950	618	1,010
	METHOD 4	686	685	778	843	927	1,110	787	1,133
	METHOD 5	594	617	683	743	821	961	647	1,035

TABLE 7 (CONTINUED--PAGE FIVE)
COST PER HOUR
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

	FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
	DEPARTMENT/METHOD								
	OPERATIVE DENTISTRY								
	METHOD 1	733	719	756	883	1,029	1,119	1,428	1,324
	METHOD 2	808	773	820	954	1,118	1,212	1,543	1,450
A	METHOD 3	758	733	769	889	1,043	1,134	1,438	1,341
	METHOD 4	874	841	896	1,023	1,202	1,332	1,652	1,523
	METHOD 5	742	725	764	892	1,039	1,130	1,442	1,338
	METHOD 1	767	723	757	897	1,062	1,163	1,454	1,338
	METHOD 2	862	782	823	980	1,175	1,288	1,584	1,477
B	METHOD 3	798	739	770	904	1,080	1,183	1,465	1,357
	METHOD 4	946	855	903	1,061	1,281	1,450	1,709	1,557
	METHOD 5	768	726	762	895	1,055	1,152	1,458	1,347
	REMOVABLE PROSTHODONTICS								
	METHOD 1	657	647	763	792	993	1,213	1,358	1,283
	METHOD 2	732	702	826	863	1,082	1,306	1,473	1,410
A	METHOD 3	682	662	776	798	1,007	1,228	1,368	1,300
	METHOD 4	798	769	903	932	1,166	1,426	1,582	1,483
	METHOD 5	666	654	770	800	1,003	1,224	1,372	1,298
	METHOD 1	638	637	763	784	980	1,213	1,363	1,263
	METHOD 2	702	681	830	848	1,061	1,306	1,481	1,374
B	METHOD 3	659	648	777	789	993	1,228	1,373	1,278
	METHOD 4	758	736	910	911	1,137	1,427	1,593	1,438
	METHOD 5	651	652	769	798	997	1,224	1,376	1,287

TABLE 7 (CONTINUED--PAGE SIX)
COST PER HOUR
INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT
BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
ENDODONTICS									
	METHOD 1	643	603	665	1,099	976	1,126	1,308	1,324
	METHOD 2	717	658	729	1,170	1,065	1,220	1,423	1,451
A	METHOD 3	667	617	678	1,105	990	1,141	1,318	1,341
	METHOD 4	783	725	806	1,239	1,149	1,340	1,532	1,524
	METHOD 5	651	610	673	1,108	987	1,138	1,322	1,339
	METHOD 1	577	569	663	1,118	966	1,129	1,277	1,306
	METHOD 2	612	591	710	1,205	1,048	1,224	1,373	1,418
B	METHOD 3	589	575	673	1,125	979	1,144	1,286	1,321
	METHOD 4	644	618	767	1,291	1,126	1,347	1,463	1,483
	METHOD 5	601	601	683	1,112	982	1,139	1,304	1,329
OCCLUSION									
	METHOD 1	560	641	710	831	918	980	1,140	1,168
	METHOD 2	635	696	774	902	1,007	1,073	1,255	1,295
A	METHOD 3	584	655	723	837	933	995	1,150	1,186
	METHOD 4	701	763	851	971	1,092	1,193	1,364	1,368
	METHOD 5	569	649	718	839	929	991	1,154	1,183
	METHOD 1	507	632	710	823	889	946	1,116	1,124
	METHOD 2	550	679	772	887	957	1,015	1,125	1,214
B	METHOD 3	521	644	723	828	900	957	1,124	1,136
	METHOD 4	589	735	846	949	1,022	1,104	1,310	1,266
	METHOD 5	528	645	719	837	915	974	1,139	1,158

TABLE 7 (CONTINUED--PAGE SEVEN)

COST PER HOUR

INDIRECT HSC AND O.U.D.S. COSTS ASSIGNED BY METHOD 1 TO METHOD 5, THEN ASSIGNED TO EACH DEPARTMENT

BY METHOD A (DEPARTMENT HOURS ÷ TOTAL O.U.D.S. CURRICULUM HOURS) OR METHOD B (DEPARTMENT FTE ÷ TOTAL O.U.D.S. FTE)

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
DENTAL MATERIALS									
	METHOD 1	1,289	1,869	2,070	2,227	2,280	2,636	2,885	5,752
	METHOD 2	1,364	1,924	2,133	2,298	2,369	2,729	3,000	5,879
A	METHOD 3	1,314	1,883	2,083	2,233	2,294	2,651	2,895	5,769
	METHOD 4	1,430	1,991	2,210	2,367	2,453	2,849	3,109	5,952
	METHOD 5	1,298	1,876	2,078	2,236	2,290	2,647	2,900	5,767
	METHOD 1	1,347	1,967	2,083	2,322	2,427	2,789	3,098	6,631
	METHOD 2	1,456	2,116	2,250	2,476	2,620	2,993	3,345	7,468
B	METHOD 3	1,383	2,006	2,116	2,335	2,458	2,822	3,119	6,745
	METHOD 4	1,553	2,299	2,452	2,626	2,802	3,256	3,581	7,953
	METHOD 5	1,342	1,899	2,015	2,260	2,360	2,724	3,029	6,262
DENTAL HYGIENE									
	METHOD 1	457	481	394	579	697	735	873	859
	METHOD 2	532	536	401	650	786	828	988	986
A	METHOD 3	482	496	395	585	711	750	883	876
	METHOD 4	598	603	408	719	870	948	1,097	1,059
	METHOD 5	466	488	395	588	708	746	887	874
	METHOD 1	388	435	434	493	567	611	660	644
	METHOD 2	428	466	465	529	606	653	692	678
B	METHOD 3	401	443	440	496	573	617	663	649
	METHOD 4	464	505	503	564	642	708	721	697
	METHOD 5	410	460	417	531	615	657	726	709

BASIC SCIENCE*									
	METHOD 1	333	338	278	603	718	735	886	769
	METHOD 2	408	392	341	674	807	828	1,001	896
A	METHOD 3	299	285	210	527	636	654	792	680
	METHOD 4	317	302	212	550	663	688	836	718
	METHOD 5	297	284	210	528	635	653	793	680

(Note: If Method B were used, the means might be somewhat lower.)

The two non-clinical departments have higher costs per student when direct costs minus income were used (Method 2); influenced by lack of clinic income. However, when both indirect costs and income are assigned, their respective costs per student are more comparable with the clinical departments.

Again, using data from Tables 6 and 7, means were calculated, but by fiscal years irrespective of department. The means of cost per student are seen in Figure 11, for fiscal years 1976-77 to 1983-84; the means of cost per hour in Figure 12. The means for both costs parallel previous observations about the methods of cost assignment.

An additional cost factor, cost per square foot by department, was done.[1] Each department's cost per square foot was determined, depending on its involvement in the educational, administrative, and clinical costs based on either Method (A) or (B). (See Table 8). There was a general escalation of cost per square foot, influenced by increases in class size and inflation.

In an attempt to determine an output quality measure, National Board Examinations, sponsored yearly by the American Dental Association, were used. The means for the eight year survey are reported in Figure 13. The average

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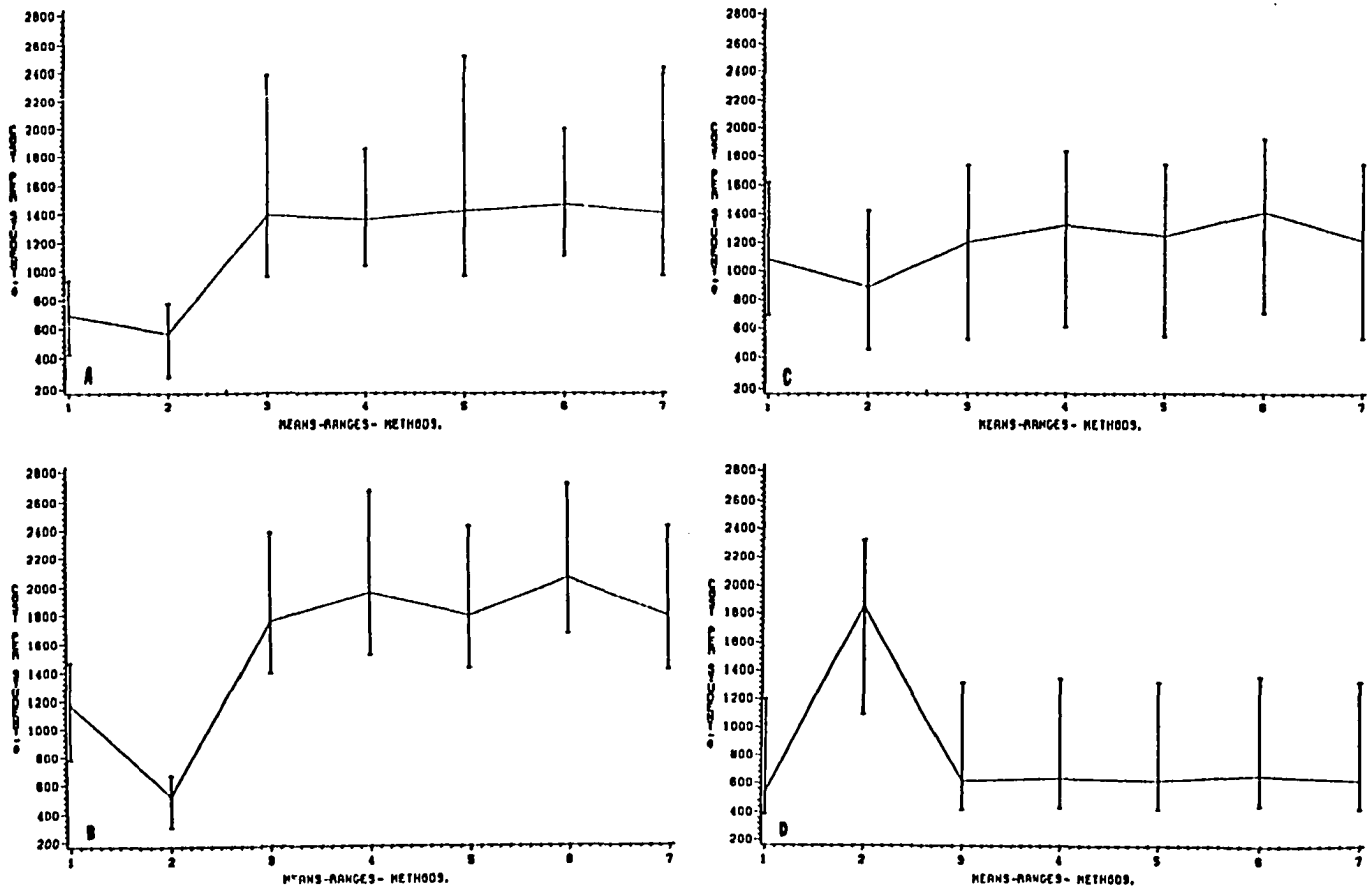
[1]See appendix B p. 146.

Figure 10. Comparison of selected departments: two clinical (A and B) and two non-clinical (C and D).



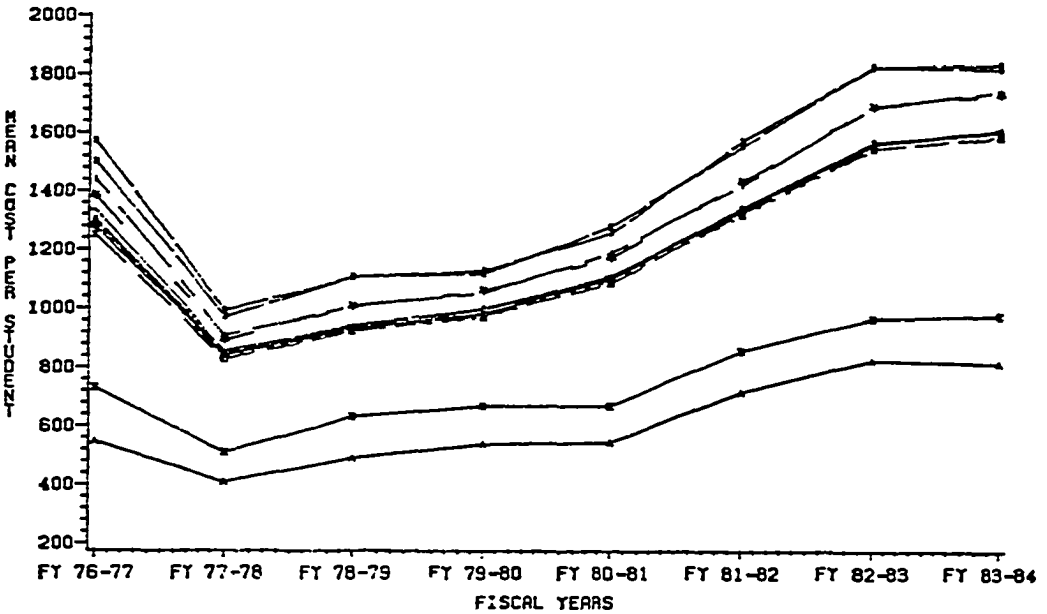


Figure 11. Comparison of department means, cost per student, for fiscal years 1976-77 to 1983-84.

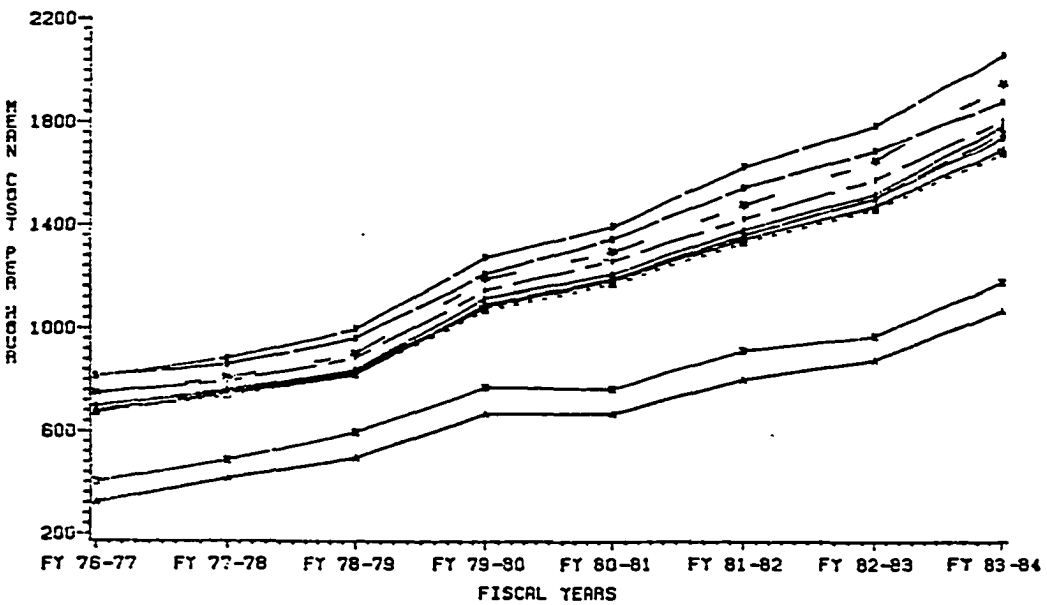


Figure 12. Comparison of department means, cost per hour, for fiscal years 1976-77 to 1983-84.

TABLE 8

COMPARISON OF DEPARTMENTAL COST PER SQUARE FOOT

BASED ON O.U.D.S. SQUARE FOOTAGE, EDUCATIONAL SQUARE FOOTAGE, AND

ADMINISTRATION SQUARE FOOTAGE

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT								
PEDODONTICS	5.79	5.84	7.12	7.50	8.20	9.23	10.56	10.51
ORTHODONTICS	4.73	5.59	6.81	7.77	8.49	9.42	10.85	10.80
PERIODONTICS	4.86	5.74	6.99	7.89	8.61	9.56	11.07	11.02
ORAL DIAGNOSIS	5.35	6.31	7.69	8.07	8.82	9.79	12.59	12.54
ORAL PATHOLOGY	5.89	6.96	8.48	8.40	9.17	10.18	11.22	11.17
DENT SERV ADMIN	5.06	5.98	7.28	4.17	8.52	9.46	9.98	9.93
ORAL SURGERY	5.04	5.95	7.25	7.56	8.26	9.17	10.97	11.14
FIXED PROSTHODONTICS	5.33	6.29	7.66	8.49	9.27	10.29	11.88	11.83
OPERATIVE DENTISTRY	5.03	5.93	7.23	7.92	8.65	9.60	10.89	10.84
REMOVABLE PROSTHODONTICS	5.00	5.90	7.19	8.08	8.02	9.79	11.08	11.03
ENDODONTICS	4.56	5.38	6.55	7.03	7.68	8.52	9.71	9.66
OCCLUSION	8.15	9.62	11.72	13.30	14.52	16.12	17.98	17.90
DENTAL MATERIALS	4.38	5.17	6.30	7.04	7.69	8.54	9.61	9.55
DENTAL HYGIENE	5.79	6.84	5.85	9.38	10.25	11.38	13.70	13.64

quintile ranking for each department over this period illustrates some departments with consistently higher scores (Departments 1, 2 and 14), while several have rather low scores (Departments 12 and 15). (Note: Departments 6 and 13 are not included in the National Board Examination program).

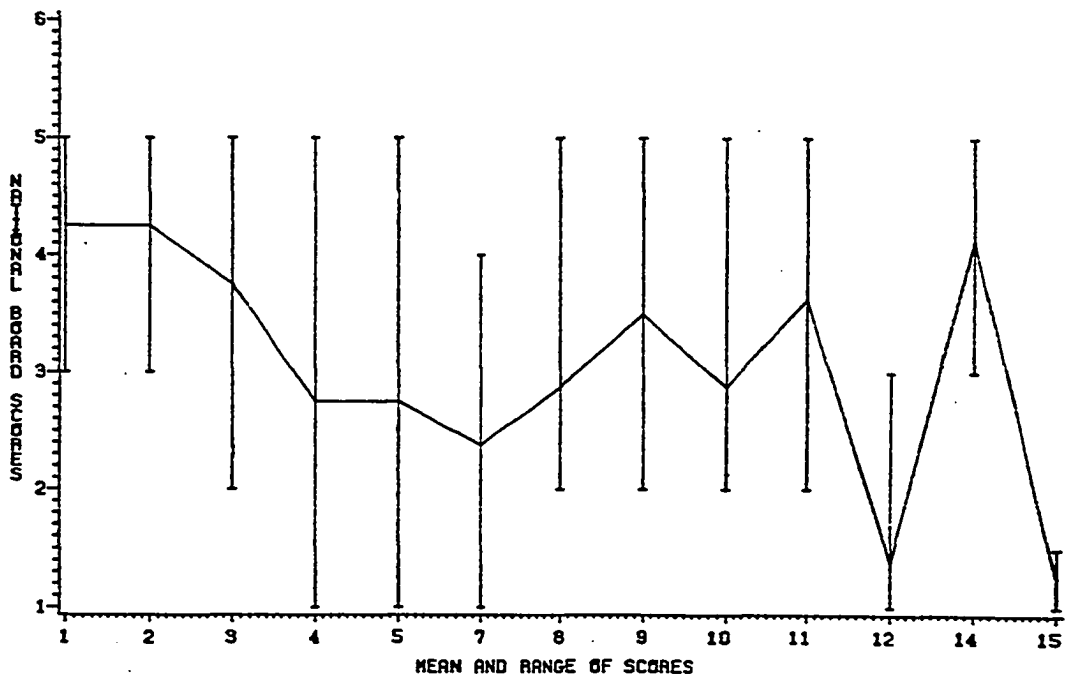


Figure 13

The regression procedure with the maximum R^2 improvement technique was used in an attempt to determine relationships between independent cost variables and the dependent (response) variables.[1] This method ideally produces the best "fit", yielding the highest R^2 values for each relationship.

Part II.

Five colleges of dentistry responded to the budget request for cost information.[2] Because of accounting, budgetary, and descriptive differences, some cost values were missing from these reports.[3] They are summarized as follows:

---

[1]See Draper and Smith, Applied Regression Analysis, p. 164; SAS Users Guide: Statistics, p. 101.

[2]See appendix A p. 142.

[3]See appendix A p. 143.

	College				
Cost Variable Missing (M)	2	3	4	5	6
Building Depreciation	M			M	M
Equipment Replacement	M			M	
Health Science Center Square Footage				M	
Dental School Square Footage				M	M
Capitation Income	M	M		M	M
Grant Income	M	M	M	M	
Applicataion Fees	M	M		M	
Student Store Income		M		M	
Dental Hygiene Tuition		M			
Dental Student Instruments		M			
Dental Hygiene Instruments		M	M		M
Total Number Campus FTE					M
Department Clinic Hours	M		M		
Department Benefits		M			
National Board Scores	M			M	M

Because of these missing values, variances in the final cost per student and cost per hour calculations become apparent. The results, at both the college and departmental level, are not comparable between colleges using the model designed with the cost data base from O.U.D.S.

At the departmental level, twenty-one different departments were identified by the responding colleges. Nine departments were common (in title) to each of the six colleges. Yet, within these departments, curricula and

objectives may vary. For example, is Oral Pathology, Oral Radiology, or Oral Medicine included in the Oral Diagnosis curricula? Several colleges have a large single department incorporating several typical restorative dentistry disciplines.

When the data were requested from the colleges, a statement assured the respondees that the data would be kept confidential. Therefore, only the results of the cost analysis will be reported, with each college of dentistry remaining incognito.

The cost determinations for the responding colleges in FY 83-84 are summarized in Table 9. Because of missing budget and cost center values, indirect costs and income were not assignable to several concepts of the O.U.D.S. model. As a result, Colleges 2 and 6 have several missing costs per student and hour. The indirect budget data of maintenance, building depreciation, and equipment replacement were not received from College 5. Because these indirect cost factors are vital to the O.U.D.S. cost model, final cost determinations are not possible for College 5. Also, some of the final cost results should be disregarded, but are reported to illustrate the dependence of the indirect cost variabales on the final outcome. College 6 has an approximate cost per student of $72,000 (1) and a cost per hour of $8,200 (3) for Method 2 without or with building depreciation. Because of absent cost information,

TABLE 9

COMPARISONS OF COST PER STUDENT (1) AND COST PER HOUR (2) BY DIRECT COSTS (A), DIRECT COSTS MINUS INCOME (B), OR DIRECT COST PLUS INCOME (C). Indirect Costs, assigned by Methods 1 - 5, were determined without budding depreciation (D) and then with depreciation (E).

			COLLEGE					
			1	2	3	4	5	6
(A)		(1)	17,435	22,250	9,696	35,661	22,344	22,211
		(2)	1,010	1,920	726	2,932	1,541	2,651
(B)		(1)	12,568	18,481	7,957	9,227	16,260	17,392
		(2)	728	1,595	596	759	1,121	2,076
(C)		(1)	22,303	26,018	11,435	62,094	28,427	27,029
		(2)	1,292	2,245	856	5,105	1,960	3,226
	Method 1	(1)	17,706	25,347	16,423	10,312		20,615
		(2)	1,026	2,187	1,229	848		2,461
	Method 2	(1)	19,890	26,558	16,962	10,331		72,872
		(2)	1,152	2,292	1,270	849		8,699
(D)	Method 3	(1)	18,003	24,024	14,602	10,667		
		(2)	1,043	2,073	1,093	877		
	Method 4	(1)	21,154		14,602	10,667		
		(2)	1,225		1,093	877		
	Method 5	(1)	17,963	25,635	14,602	10,667		20,700
		(2)	1,041	2,212	1,093	877		2,471
	Method 1	(1)	19,312	25,347	17,176	11,097		20,724
		(2)	1,119	2,187	1,286	912		2,474
	Method 2	(1)	21,497	26,558	17,715	11,116		72,981
		(2)	1,245	2,292	1,326	914		8,712
(E)	Method 3	(1)	19,609	24,024	15,355	11,451		
		(2)	1,136	2,073	1,149	941		
	Method 4	(1)	22,760		15,355	11,451		
		(2)	1,318		1,149	941		
	Method 5	(1)	19,569	25,635	15,355	11,451		20,809
		(2)	1,134	2,212	1,149	941		2,484

this is an obvious exaggeration of the outcome and should be ignored. Again, College 2, because of its reporting information, has the same costs when comparing cost outcome without and with building depreciation. Reviewing Table 9, the following observations are noted:

- In general, costs for all colleges are lower when income is subtracted from the colleges' direct costs (budget).
- When building depreciation and equipment replacement are included, costs increase.
- College 3, reporting a comparatively lower direct cost (budget) and a larger number of students, has a lower initial cost. Yet, when indirect costs are assigned, costs increase by approximately 44 percent.
- College 4, because of a large capitation income, income credited as an indirect assignment has a dramatic decrease in overall costs when indirect methods were applied.

Similar to the calculations of O.U.D.S. model, departmental costs per student and per hour were completed. Nine departments, where comparative data were available, were used and summarized in Table 10. Again, as in Table 9, certain results are missing due to lack of initial budget and cost center data, plus certain cost irregularities. Obviously, these exaggerations are due to input omissions in the cost model. College 4, due to curriculum design, has a cost per hour in the Department of

TABLE 10

DEPARTMENTAL COMPARISONS OF COST PER STUDENT (1) AND COST PER HOUR (2) BY DIRECT COSTS (DC), OR DIRECT COST MINUS INCOME (DCI). Direct Costs were assigned by Method 1 to Method 5, the assigned by Method A (Department Hours ÷ Total OUDS Curriculum Hours) or Method B (Departmental FTE ÷ Total OUDS FTE)

			COLLEGE					
			1	2	3	4	5	6
PEDODONTICS								
(DC)		(1)	$ 906	$ 1,904	$ 1,102	$ 2,431	$ 1,409	$ 836
		(2)	707	19,808	3,158	15,725	1,521	2,173
(DCI)		(1)	634	1,745	1,102	2,297	1,035	709
		(2)	495	17,974	3,158	14,862	1,117	1,843
(A)	Method 1	(1)	1,542	1,811	1,392	2,151	19,090	4,070
	Method 1	(2)	1,203	18,656	3,989	13,913	20,605	10,578
(B)	Method 1	(1)	1,516	1,939	1,493	823	18,926	4,353
	Method 1	(2)	1,183	19,975	4,278	5,323	20,429	11,268
(A)	Method 2	(1)	1,704	1,821	1,406	2,151	19,085	6,470
	Method 2	(2)	1,330	18,760	4,030	13,914	20,600	16,816
(B)	Method 2	(1)	1,657	2,000	1,521	825	18,922	10,077
	Method 2	(2)	1,293	120,599	4,359	5,344	20,424	26,189
(A)	Method 3	(1)	1,564	1,800	1,344	2,155	19,078	
	Method 3	(2)	1,221	18,542	3,853	13,942	20,593	
(B)	Method 3	(1)	1,535	1,873	1,397	856	18,916	
	Method 3	(2)	1,198	19,292	4,005	5,536	20,417	
(A)	Method 4	(1)	1,798					
	Method 4	(2)	1,403					
(B)	Method 4	(1)	1,739					
	Method 4	(2)	1,357					
(A)	Method 5	(1)	1,561	1,814	1,407	2,155	19,089	4,074
	Method 5	(2)	1,218	18,681	4,033	13,944	20,604	10,588
(B)	Method 5	(1)	1,547	1,867	1,455	850	18,928	4,345
	Method 5	(2)	1,207	19,226	4,169	5,498	20,430	11,292

TABLE 10 (Continued--Page Two)
Departmental Comparisons of Cost Per Student (1) and Cost Per Hour (2)
By Direct Costs (DC), or Direct Cost Minus Income (DCI).
Direct Costs were assigned by Method 1 to Method 5,
the assigned by Method A (Department Hours ÷ Total OUDS Curriculum Hours)
or Method B (Departmental FTE ÷ Total OUDS FTE)

			COLLEGE					
			1	2	3	4	5	6
ORTHODONTICS								
(DC)		(1)	742	765	837	1,757	820	751
		(2)	465	4,865	9,152	5,743	4,374	3,561
(DCI)		(1)	710	672	837	1,275	462	517
		(2)	445	1,272	9,152	4,166	2,465	2,450
(A)	Method 1	(1)	1,712	746	930	877	17,092	3,680
	Method 1	(2)	1,074	4,745	10,161	2,866	91,159	17,447
(B)	Method 1	(1)	1,592	757	997	2	17,771	3,771
	Method 1	(2)	999	4,875	10,899	7	94,779	17,877
(A)	Method 2	(1)	1,914	763	933	877	17,091	5,357
	Method 2	(2)	1,201	4,985	10,271	2,867	91,153	25,398
(B)	Method 2	(1)	1,696	778	1,010	4	17,768	6,904
	Method 2	(2)	1,064	4,682	11,043	12	94,763	32,728
(A)	Method 3	(1)	1,740	728	917	886	17,090	
	Method 3	(2)	1,091	4,631	10,024	2,895	91,146	
(B)	Method 3	(1)	1,606	735	953	30	17,764	
	Method 3	(2)	1,008	4,671	10,413	98	94,743	
(A)	Method 4	(1)	2,030					
	Method 4	(2)	1,274					
(B)	Method 4	(1)	1,756					
	Method 4	(2)	1,102					
(A)	Method 5	(1)	1,736	750	934	886	17,092	3,683
	Method 5	(2)	1,089	4,770	10,205	2,897	91,159	17,460
(B)	Method 5	(1)	1,668	775	965	26	17,761	3,776
	Method 5	(2)	1,047	4,799	10,558	86	94,726	17,901

TABLE 10 (Continued--Page Three)
Departmental Comparisons of Cost Per Student (1) and Cost Per Hour (2)
By Direct Costs (DC), or Direct Cost Minus Income (DCI).
Direct Costs were assigned by Method 1 to Method 5,
the assigned by Method A (Department Hours ÷ Total OUDS Curriculum Hours)
or Method B (Departmental FTE ÷ Total OUDS FTE)

		COLLEGE					
		1	2	3	4	5	6
PERIODONTICS							
(DC)	(1)	1,129	2,389	1,113	2,129	1,436	986
	(2)	648	13,825	4,433	11,064	1,621	2,336
(DCI)	(1)	1,034	1,450	1,113	1,998	1,180	829
	(2)	593	8,391	4,433	10,385	1,332	1,966
(A) Method 1	(1)	2,192	1,546	1,318	1,740	19,237	4,122
Method 1	(2)	1,258	8,946	5,248	9,044	21,712	9,712
(B) Method 1	(1)	2,147	1,683	1,425	445	19,666	4,216
Method 1	(2)	1,232	9,741	5,677	2,313	22,195	9,994
(A) Method 2	(1)	2,413	1,564	1,328	1,741	19,232	7,476
Method 2	(2)	1,385	9,051	5,289	9,046	21,706	17,722
(B) Method 2	(1)	2,331	1,756	1,450	447	19,660	9,075
Method 2	(2)	1,338	10,158	5,777	2,323	22,189	21,511
(A) Method 3	(1)	2,222	1,526	1,283	1,746	19,226	
Method 3	(2)	1,276	8,832	5,112	9,073	21,699	
(B) Method 3	(1)	2,172	1,604	1,340	478	19,652	
Method 3	(2)	1,427	9,284	5,337	2,487	22,180	
(A) Method 4	(1)	2,540					
Method 4	(2)	1,458					
(B) Method 4	(1)	2,437					
Method 4	(2)	1,399					
(A) Method 5	(1)	2,218	1,550	1,329	1,746	19,236	4,128
Method 5	(2)	1,273	8,971	5,292	9,075	29,710	9,784
(B) Method 5	(1)	2,193	1,607	1,379	473	19,659	4,224
Method 5	(2)	1,259	9,299	5,494	2,457	22,187	10,012

TABLE 10 (Continued--Page Four)
Departmental Comparisons of Cost Per Student (1) and Cost Per Hour (2)
By Direct Costs (DC), or Direct Cost Minus Income (DCI).
Direct Costs were assigned by Method 1 to Method 5,
the assigned by Method A (Department Hours ÷ Total OUDS Curriculum Hours)
or Method B (Departmental FTE ÷ Total OUDS FTE)

			COLLEGE					
			1	2	3	4	5	6
ORAL DIAGNOSIS								
(DC)		(1)	1,114	2,193	305	2,889	1,129	962
		(2)	574	9,571	956	1,662	1,264	132
(DCI)		(1)	951	1,500	305	2,889	950	805
		(2)	490	6,547	956	1,662	1,063	1,785
(A)	Method 1	(1)	2,156	1,598	502	633	19,016	4,178
	Method 1	(2)	1,110	6,976	1,572	364	21,285	9,261
(B)	Method 1	(1)	2,049	1,727	469	512	18,915	4,254
	Method 1	(2)	1,055	7,535	1,469	295	21,172	9,428
(A)	Method 2	(1)	2,401	1,622	515	636	19,011	7,765
	Method 2	(2)	1,237	7,080	1,612	366	21,280	17,211
(B)	Method 2	(1)	2,208	1,801	477	515	18,910	9,048
	Method 2	(2)	1,138	7,860	1,495	296	21,167	20,055
(A)	Method 3	(1)	2,189	1,572	458	684	19,005	
	Method 3	(2)	1,128	6,862	1,435	393	21,273	
(B)	Method 3	(1)	2,071	1,645	441	565	18,904	
	Method 3	(2)	1,067	7,180	1,382	325	21,160	
(A)	Method 4	(1)	2,543					
	Method 4	(2)	1,310					
(B)	Method 4	(1)	2,301					
	Method 4	(2)	1,185					
(A)	Method 5	(1)	2,185	1,604	516	687	19,015	4,184
	Method 5	(2)	1,125	7,001	1,616	395	21,284	9,274
(B)	Method 5	(1)	2,125	1,657	500	568	18,915	4,261
	Method 5	(2)	1,094	7,232	1,567	327	21,172	9,445

TABLE 10 (Continued--Page Five)

Departmental Comparisons of Cost Per Student (1) and Cost Per Hour (2)
By Direct Costs (DC), or Direct Cost Minus Income (DCI).
Direct Costs were assigned by Method 1 to Method 5,
the assigned by Method A (Department Hours ÷ Total OUDS Curriculum Hours)
or Method B (Departmental FTE ÷ Total OUDS FTE)

			COLLEGE					
			1	2	3	4	5	6
DENT SERV ADMIN								
(DC)		(1)	1,202	996	1,258	2,308	549	704
		(2)	1,386	3,564	1,375	5,996	5,336	2,631
(DCI)		(1)	1,202	223	1,258	2,308	593	685
		(2)	1,386	3,300	1,375	5,996	5,761	2,562
(A)	Method 1	(1)	1,650	1,010	1,845	1,796	15,863	3,913
	Method 1	(2)	1,902	3,611	2,017	4,667	154,100	14,624
(B)	Method 1	(1)	1,741	1,025	1,931	1,041	16,220	4,028
	Method 1	(2)	2,008	3,665	2,110	2,706	157,563	15,052
(A)	Method 2	(1)	1,759	1,039	1,882	1,797	15,863	6,041
	Method 2	(2)	2,029	3,715	2,057	4,668	154,095	22,575
(B)	Method 2	(1)	1,925	1,060	1,980	1,037	16,218	7,991
	Method 2	(2)	2,220	3,791	2,164	2,696	157,548	29,865
(A)	Method 3	(1)	1,665	978	1,720	1,807	15,862	
	Method 3	(2)	1,919	3,496	1,880	4,696	154,088	
(B)	Method 3	(1)	1,766	986	1,765	969	16,216	
	Method 3	(2)	2,037	3,527	1,930	2,519	157,528	
(A)	Method 4	(1)	1,823					
	Method 4	(2)	2,102					
(B)	Method 4	(1)	2,031					
	Method 4	(2)	2,343					
(A)	Method 5	(1)	1,663	1,017	1,885	1,808	15,863	3,917
	Method 5	(2)	1,917	3,635	2,060	4,697	154,099	14,637
(B)	Method 5	(1)	1,714	1,023	1,925	- 982	16,215	4,034
	Method 5	(2)	1,977	3,658	2,105	-2,551	157,513	15,076

TABLE 10 (Continued--Page Six)

Departmental Comparisons of Cost Per Student (1) and Cost Per Hour (2)
By Direct Costs (DC), or Direct Cost Minus Income (DCI).
Direct Costs were assigned by Method 1 to Method 5,
the assigned by Method A (Department Hours ÷ Total OUDS Curriculum Hours)
or Method B (Departmental FTE ÷ Total OUDS FTE)

			COLLEGE					
			1	2	3	4	5	6
ORAL SURGERY								
(DC)		(1)	516	2,164	1,041	2,435	1,252	1,192
		(2)	635	7,634	2,984	6,953	3,275	2,964
(DCI)		(1)	398	1,966	1,041	2,395	931	1,026
		(2)	490	6,934	2,984	6,839	2,434	2,551
(A)	Method 1	(1)	807	2,055	1,262	1,956	17,953	4,384
	Method 1	(2)	994	7,249	3,615	5,587	46,955	10,896
(B)	Method 1	(1)	775	2,137	1,352	1,023	19,228	4,607
	Method 1	(2)	954	7,537	3,874	2,921	50,290	11,450
(A)	Method 2	(1)	910	2,285	1,276	1,960	17,951	7,583
	Method 2	(2)	1,120	7,354	3,656	5,598	46,950	18,847
(B)	Method 2	(1)	852	2,198	1,378	1,034	19,223	11,384
	Method 2	(2)	1,048	7,755	3,950	2,954	50,275	28,293
(A)	Method 3	(1)	821	2,023	1,214	1,962	17,949	
	Method 3	(2)	1,011	7,135	3,479	5,602	46,943	
(B)	Method 3	(1)	785	2,069	1,261	1,039	19,215	
	Method 3	(2)	967	7,299	3,615	2,966	50,255	
(A)	Method 4	(1)	970					
	Method 4	(2)	1,193					
(B)	Method 4	(1)	896					
	Method 4	(2)	1,103					
(A)	Method 5	(1)	819	2,062	1,277	1,968	17,953	4,389
	Method 5	(2)	1,009	7,274	3,659	5,620	46,954	10,909
(B)	Method 5	(1)	801	2,096	1,319	999	19,210	4,618
	Method 5	(2)	986	7,393	3,781	2,853	50,241	11,478

TABLE 10 (Continued--Page Seven

Departmental Comparisons of Cost Per Student (1) and Cost Per Hour (2)
By Direct Costs (DC), or Direct Cost Minus Income (DCI).
Direct Costs were assigned by Method 1 to Method 5,
the assigned by Method A (Department Hours ÷ Total OUDS Curriculum Hours)
or Method B (Departmental FTE ÷ Total OUDS FTE)

			COLLEGE					
			1	2	3	4	5	6
REMOVABLE PROSTHODONTICS								
(DC)		(1)	1,393	2,026	1,415	2,521	1,491	1,382
		(2)	811	3,610	1,449	3,699	707	1,138
(DCI)		(1)	1,063	2,026	1,415	2,320	965	1,011
		(2)	618	3,610	1,449	3,404	457	832
(A)	Method 1	(1)	2,206	2,238	2,335	1,479	21,561	5,155
	Method 1	(2)	1,284	3,989	2,391	2,170	10,217	4,243
(B)	Method 1	(1)	2,172	2,268	2,269	640	19,683	4,872
	Method 1	(2)	1,264	4,042	2,324	940	9,327	4,010
(A)	Method 2	(1)	2,424	2,297	2,375	1,480	21,550	14,813
	Method 2	(2)	1,410	4,093	2,432	2,172	10,212	12,194
(B)	Method 2	(1)	2,362	2,339	2,300	649	19,677	9,986
	Method 2	(2)	1,374	4,168	2,355	943	9,324	8,220
(A)	Method 3	(1)	2,236	2,174	2,202	1,498	21,535	
	Method 3	(2)	1,301	3,875	2,255	2,199	10,205	
(B)	Method 3	(1)	2,198	2,191	2,168	678	19,669	
	Method 3	(2)	1,279	3,905	2,220	995	9,320	
(A)	Method 4	(1)	2,549					
	Method 4	(2)	1,483					
(B)	Method 4	(1)	2,472					
	Method 4	(2)	1,438					
(A)	Method 5	(1)	2,432	2,252	2,378	1,500	21,558	5,171
	Method 5	(2)	1,298	4,014	2,435	2,201	10,216	4,256
(B)	Method 5	(1)	2,212	2,265	2,347	675	19,706	4,880
	Method 5	(2)	1,287	4,036	2,403	991	9,338	4,017

TABLE 10 (Continued--Page Eight)
Departmental Comparisons of Cost Per Student (1) and Cost Per Hour (2)
By Direct Costs (DC), or Direct Cost Minus Income (DCI).
Direct Costs were assigned by Method 1 to Method 5,
the assigned by Method A (Department Hours ÷ Total OUDS Curriculum Hours)
or Method B (Departmental FTE ÷ Total OUDS FTE)

			COLLEGE					
			1	2	3	4	5	6
ENDODONTICS								
(DC)		(1)	502	1,039	780	1,381	880	767
		(2)	798	5,814	1,674	4,920	1,909	2,110
(DCI)		(1)	344	967	780	1,311	800	679
		(2)	547	5,410	1,674	4,669	1,909	1,868
(A)	Method 1	(1)	833	1,048	1,159	962	17,862	4,029
	Method 1	(2)	1,324	5,867	2,487	3,426	42,619	11,091
(B)	Method 1	(1)	822	1,070	1,320	110	18,242	4,124
	Method 1	(2)	1,306	5,987	2,833	391	43,525	11,352
(A)	Method 2	(1)	913	1,067	1,178	962	17,860	6,917
	Method 2	(2)	1,451	5,971	2,528	3,427	42,613	19,041
(B)	Method 2	(1)	892	1,097	1,362	111	18,239	8,535
	Method 2	(2)	1,419	6,139	2,922	396	43,517	23,495
(A)	Method 3	(1)	844	1,028	1,096	970	17,857	
	Method 3	(2)	1,342	5,753	2,351	3,455	42,606	
(B)	Method 3	(1)	831	1,040	1,180	136	18,234	
	Method 3	(2)	1,322	5,821	2,533	485	43,506	
(A)	Method 4	(1)	959					
	Method 4	(2)	1,524					
(B)	Method 4	(1)	933					
	Method 4	(2)	1,483					
(A)	Method 5	(1)	842	1,053	1,179	970	17,862	4,034
	Method 5	(2)	1,339	5,892	2,531	3,457	42,617	11,104
(B)	Method 5	(1)	836	1,061	1,255	133	18,236	4,131
	Method 5	(2)	1,329	5,942	2,694	472	43,511	11,372

TABLE 10 (Continued--Page Nine)

Departmental Comparisons of Cost Per Student (1) and Cost Per Hour (2)
By Direct Costs (DC), or Direct Cost Minus Income (DCI).
Direct Costs were assigned by Method 1 to Method 5,
the assigned by Method A (Department Hours ÷ Total OUDS Curriculum Hours)
or Method B (Departmental FTE ÷ Total OUDS FTE)

COLLEGE

			1	2	3	4	5	6
DENTAL HYGIENE								
(DC)		(1)	4,254	950	567	788	835	750
		(2)	114	562	168	139		189
(DCI)		(1)	4,065	1,901	3,553	3,916	5,279	5,695
		(2)	108	120	168	133		176
(A)	Method 1	(1)	22,042	5,452	19,548	29,495	108,182	65,141
	Method 1	(2)	859	345	927	1,000		2,019
(B)	Method 1	(1)	16,524	2,410	15,447	2,005	112,891	46,271
	Method 1	(2)	644	152	732	68		1,434
(A)	Method 2	(1)	25,289	7,104	20,398	29,449	108,182	321,695
	Method 2	(2)	986	449	967	998		9,969
(B)	Method 2	(1)	17,385	2,978	15,777	2,012	112,878	104,461
	Method 2	(2)	678	188	748	68		3,237
(A)	Method 3	(1)	22,484	3,646	16,672	28,635	108,182	
	Method 3	(2)	876	230	790	970		
(B)	Method 3	(1)	16,641	1,790	14,330	2,138	112,862	
	Method 3	(2)	649	113	679	72		
(A)	Method 4	(1)	27,167					
	Method 4	(2)	1,059					
(B)	Method 4	(1)	17,883					
	Method 4	(2)	697					
(A)	Method 5	(1)	20,519	2,487	17,498	28,710	108,181	63,946
	Method 5	(2)	800	157	830	973		1,982
(B)	Method 5	(1)	16,801	2,190	15,776	2,222	112,791	46,000
	Method 5	(2)	655	138	748	75		1,425

Pedodontics of $15,725, which is excessive. Yet, the cost per student is comparable to the other five colleges. Observations from Table 10 are as follows:

- Assessment of college indirect costs and assignment of college indirect income can influence the final cost.
- Clinical departments, when assigned respective clinic incomes, have lower costs than nonclinical departments, i.e.: Departments of Pedodontics compared to Departments of Dental Service Administration.
- Assessment of indirect costs and assignment of indirect income by Method A yields higher costs than Method B.
- Because of curricula reporting methods, Colleges 2 and 4 have exaggerated cost per hours. This is due to the philosophy of "block" clinic assignments where departmental clinic hours are difficult, if not impossible, to determine.
- The Departments of Dental Hygiene have a similar high cost per student because of a high faculty:low student ratio. Yet, because of the number of hours taught by these departments, the cost per hour is comparable to other departments within the colleges of dentistry.

Chapter V

Discussion

"Costs are opinions, prices are facts"[1]

> "Under most circumstances, policy information requires reasonable accuracy rather than absolute precision, since to make effective decisions, administrators must avoid bogging down in a search for artificial precision".[2]

Current reductions in appropriations to higher education, not restricted to the State of Oklahoma, have placed severe financial restraints on undergraduate dental education, resulting in the closure of some colleges of dentistry. It is imperative for each dental institution to have a rational estimate of costs to assist in the decision support system to reallocate these reduced monies. Accompanying these financial restrictions in dental education is the reduction in the number of qualified applicants. Additional external interest by the private practice sector of the dental society has influenced the reduction of class size.

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[1]George Weathersby quoted in Bernard S. Shehan and Warren W. Gulko, "The Fundamental Cost Model" New Directions Institutional Res Spring 1976, p. 56.

[2]Ibid, p. 72.

The objective of this study was to create a reliable, optimum, but pragmatic model of cost analysis in undergraduate dental education. By defining the various cost factors, the model could be used to determine comparative costs per student and costs per hour, both for the institution and for individual departments. A second objective was to apply the cost analysis model to several other colleges of dentistry to evaluate the validity of the cost variables between institutions. To date, despite the published need for cost analysis in dental education, a current method does not exist.

This cost analysis model would be of assistance in redirecting budget resources. The Oklahoma Regents for Higher Education uses a formula, programatic budget approach. The formula, applied to O.U.D.S., is based on faculty and staff FTE, average salaries, and percentages for fringe benefits-operating expenses.[1] While no actual data are available on credited income "an estimate is made to the amount of income--and is subtracted from the institutional budget requirement."[2] For example, if the class size were reduced by twenty students (approximately 25 percent), this would not only influence the budget formula, but reduce the estimated income assigned to the budget for

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[1]Oklahoma State System of Higher Education. 1984-85 Operating Budget Needs, p. 14.

[2]Ibid, p. 15.

O.U.D.S. To make logical budget adjustments, a cost analysis model would be of administrative assistance to accommodate the reduced budget-income deficit.

In an attempt to clarify questions about the budget determination method used by the Oklahoma Regents for Higher Education, three different assumptions were compared.[1] 1) Direct costs only were used, assuming that income in the general fund was estimated and subtracted from the formula determined budget; 2) direct cost minus income assumed that income was not identifiable and should be subtracted from the budget; and 3) direct cost plus income (which was identifiable) and the total costs were reflected as a total of the O.U.D.S. budget plus income. The resultant cost per student or hour illustrates this difference depending on the interpretation of the State of Oklahoma and O.U.D.S. budget data sources.[2]

As previously reported, the cost per student and cost per hour increases by 16 to 33 percent when the three methods are compared. The corrected A.A.D.S. study of 1966 is somewhat comparable to the direct cost minus income equation in this study.[3] That study incorporated indirect costs, but failed to outline the mechanism used. (The

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[1]See Table 3A p. 57 above.

[2]See Figure 2 p. 59 above.

[3]Norwood, Cost Study in Dental Education, p. 20.

I.O.M. report is not comparable because of methodology used in the cost determination.)[1]

The most recent financial report of the American Dental Association outlines mean costs for student by source of funding-private versus public or research versus nonresearch.[2] Cost per student was computed by dividing each institution's total expenditures by the number of undergraduate dental students equivalent. Two categories are described, resultant cost per student, with or without inclusion of sponsored research. The mean cost per student, including sponsored research, was $30,342 ranging from $14,208 to $65,092. Excluding the research costs reduced the mean to $28,065, with a range of $14,078 to $54,919. The mean cost per student for O.U.D.S. in this report, was approximately $15,000 between the direct cost and the direct cost minus income methods.[3]

The philosophy of the A.D.A. financial reports excludes indirect costs. Previous studies, such as the A.A.D.S. study in 1966 and the I.O.M. study in 1974, either reported indirect costs but failed to state the method used or failed to include them. This study demonstrated that

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[1]See p. 39 above.

[2]American Dental Association, Analysis of Dental School Finances FYE, June 1984 (Chicago, American Dental Association, 1985, p. 4.

or failed to include them. This study demonstrated that

[3]Because of the confidentiality of this report, exact data are not available for publication.

indirect costs do significantly contribute to a more sophisticated cost per student and cost per hour measurement. Indirect costs can be justified as those services provided necessary for function of the College of Dentistry. Because faculty, students, and staff are provided these services through the HSC library and computer centers in the HSC budget, it is equitable to allocate these costs proportionately to the College of Dentistry. Previously reported methods were used to assign these costs.[1] These indirect costs do contribute to the final cost values.[2] However, this may be misleading since these methods used were related to HSC faculty FTE, and student FTE comparisons with O.U.D.S. faculty and student FTE. Since the Board of Regents of Higher Education for the State of Oklahoma utilizes a formula dependent on student and faculty FTE, this relationship becomes obvious. Yet this is a logical means of assessment of these costs. The HSC administration provides the College of Dentistry with personnel and academic management services, assisting in mission accomplishment. Again, it is logical to assign some of these indirect costs to the recipient of the service, i.e., the College of Dentistry.

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[1]See p. 50 above.

[2]See p. 154 above.

Maintenance costs were prorated on the basis of the percentage of net square footage in the College of Dentistry compared to the HSC campus. A means to determine this indirect cost should be included because of the high utility usage in colleges of dentistry. With the equipment used in laboratories and large clinics, high velocity vacuum systems, water usage and temperature control of those large clinical areas, maintenance should be an identifiable indirect cost item. In two of the five responding colleges of dentistry this was not possible because of lack of needed information.

Building depreciation and equipment replacement, especially in colleges of dentistry, should be included in any long range cost analysis and reported annually as a cost item. As mentioned previously, several authors have advocated planning such depreciation expenses, both for buildings and laboratory equipment.[1] In colleges of dentistry, this becomes more apparent because of its technical training methods and current scientific advances indicating the need to improve facilities and install new equipment.

The means to assign the costs from the extensive laboratory and clinical facilities was to use the ratio of

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[1]See page 25 above.

departmental laboratory and clinical hours:total curriculum laboratory and clinical hours. Thus, clinic support supply costs and equipment replacement costs were assigned. By utilizing departmental square footage, the indirect maintenance costs from the H.S.C. budget can be reassigned to each department. For comparative reasons, the cost per square foot per department was done.

With the departmental mission to train the undergraduate student to practice dentistry, as part of the overall mission of the college, it is equitable to assign, as a credit, income generated by the institution. This was done using the ratio of departmental hours:total curriculum hours as suggested by Larimore.[1] A similar method is to distribute costs and income by the ratio of departmental FTE:O.U.D.S. FTE. This method produced lower costs, though not significantly, than the departmental hours:total curriculum hours method. It would seem that the two methods should be comparable since a department with a larger percentage of the curriculum would have a comparable FTE when cost per student and cost per hour, on the departmental level, are compared, indirect cost assessments and income assignments do influence the cost. These are related to the budget formula of the Oklahoma Board of Regents of Higher Education which uses faculty and student FTE. However, the

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[1]Larimore, "Break Even Analysis for Higher Education," p. 276.

previous A.A.D.S. study of 1966 and the annual A.D.A. financial survey cannot be criticized for their lack of indirect cost usage. The limited experience in this study confirms the problems in establishing interinstitutional cost analysis studies. These are:

1. Colleges of dentistry, though comparable in output, are not comparable in the internal process of curriculum design and cost center identification.
2. Lack of agreement on methods of accounting and budget terms.
3. Lack of communication and independence of thought. The letter of inquiry requested National Board Scores, but three of the five colleges failed to return the requested data.
4. Clarification of the method used to determine the overall budget of the institution. Is income considered as part of the budget, subtracting this from the gross budget cost? Or is this done formula basis disregarding income?

This study included two cost output factors, both cost per student and cost per hour. Both methods were reported in the literature with professional schools using the cost per student and the traditional academic programs using cost per hour or unit cost. A cost per hour comparison is of use in colleges of dentistry in the non-clinical departments and Departments of Dental Hygiene.

Because of the curricula structure in colleges of dentistry, all departments have contact with the complete undergraduate population, the cost per student would reflect this uniformity. However, a non-clinical department may have a greater or lesser curriculum hour content which would be reflected in the cost per hour. Costs per hour might be an improved means to evaluate departments of basic science, dental hygiene, and non-clinical departments, eliminating cost per student on a comparative criteria.

Departments of Dental Hygiene have a high faculty:student ratio, but a large number of student contact hours. Non-clinical departments, lacking clinical income, might have a disproportionate cost per student. However, the non-clinical department with a large academic program would compare favorably on a cost per hour basis.

Both the O.U.D.S. data base and cost data from other institutions requested information from the Departments of Basic Sciences. In colleges of dentistry, Basic Science represents a difficult cost analysis problem because 1) the department may or may not be located physically or budgetarily within the colleges of dentistry or 2) the basic science courses may be taught on a contract basis within the Health Science Center. The costs allocated to the departments of basic sciences, might not reflect a full time FTE commitment, a percentage FTE only or only an agreement to assume responsibility for specific course content.

The use of National Board Scores as an output measure of quality, while an idea with merit, is not predictive. The evaluation of the cost data would suggest that a department with high cost doesn't necessarily produce National Board Scores in the higher quintiles. Despite this lack of significance, a department with historical high costs, either per student or hour, but medicore National Board results might be reviewed for a plan to reverse this trend.

Initially, this study was conceptualized as a descriptive, qualitative study of a cost analysis model to be used in undergraduate dental education. Yet, an attempt was made to quantify the cost data used in the longitudinal data base. This was done to identify reliable input cost variables. If an administrator or budget officer needed to make a decision using costs per student or hour, those significant or reliable costs would be known improving confidence in the decision process. Regression methods with the maximum R^2 improvement technique was the means used in this part of the study.

The use of the regression methods in this study did not produce results which were of statistical reliability. Several authors have discussed the problems, defects and flaws which are related to the use of regressions analysis

and these are applicable to problems encountered in this study.[1] These are:

1. The need to examine all possible computations which creates an enormous computer calculation;
2. The failure to examine past data or experiences;
3. Often the major computations, irrespective of the definitions of the dependent and independent variables, produces co-efficients which are meaningless, outlandish or non-reproducible, which is the major flaw of the regression analysis in this study. This study produced results with obtuse, negative values which could not be rationalized; and
4. Many investigators have difficulty comprehending the use of complex regression analysis. "The ultimate outcome is that people who know what the results mean cannot articulate them, whereas the people who might articulate the meaning do not know what it is."[2]

Despite the warnings of misuse or abuse of costs per student or hour (unit cost), those responsible for financial decisions must have a logical mechanism. Such a cost data base, once established in a college of dentistry, could be used to eliminate the yearly hysteria accompanying the

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[1]Morgan, J.N. and Sonquist, J.A., "Problems in the Analysis of Survey Data and a Proposal," quoted in Alvan R. Feinstein. Clinical Biostatistics. (St. Louis, Mosby, 1977) p. 392.

[2]Ibid, p. 393.

budget process. Use of such historical data could be used as a forecasting tool to plan the long range mission of the institution. In this computer era, computer assistance could minimize the time to do a cost analysis process while maximizing the use of scarce resources. Wallhaus, describing the need for "allocative efficiency" and improved productivity, encouraged higher education to develop means to determine the most favorable mix of inputs e.g. resources, with more favorable outputs for higher education.[1] A model of cost analysis in dental undergraduate education would assist in "preference efficiency." Or to answer Wallhaus' question: Was the money spent wisely?[2]

The following are conclusions from this cost study model of undergraduate dental education.

1. There is a relationship between indirect and direct costs in the final cost per student and cost per hour. Assignment of indirect income is an integral part of the cost analysis method.
2. A useable model can be developed within an institution-wide longitudinal yearly costs per student on an institution-wide basis and interdepartmentally. Reliable factors can be

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[1]Wallhaus, "The Many Dimensions of Productivity," p. 3.

[2]Ibid, p. 4.

determined which assist in the validity of final outcomes.

3. A cost analysis model developed within a college of dentistry may have limited application to other colleges of dentistry. This is due to variances in description costs, budget and accounting methods. Departmental comparisons between institutions are limited because of different departmental curricular structures.

4. Within a college of dentistry, the use of National Board Examinations is not an accurate predictor of efficient or effective use of budget resources.

Future investigations might focus on the following topics:

- What is the professional management background of those involved in the cost decision process in dental education?
- What cost centers can be identified which are applicable to several colleges of dentistry?
- Once a cost model is developed as part of the decision support system, what factors influence its use (or lack of use)?
- Why the limited use of cost analysis methods in undergraduate dental education?
- How does the political climate and the suboptimization process influence the decision

support system involving cost analysis, especially on the departmental level?

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APPENDIX A

A description of the variables included in the cost analysis.

COST ANALYSIS - A means of reporting those costs that can be assigned to an educational unit (college or department).

DIRECT COSTS - Specific costs identified with an educational objective.

INDIRECT COSTS - Costs which are used to support the educational unit.

A. Budget

FISCAL YEAR - The year of the budgetary data.

COLLEGE - The college of dentistry providing budget data.

HEALTH SCIENCE CENTER BUDGET - Refers to the complete budget of the campus unit.

HEALTH SCIENCE CENTER MAINTENANCE BUDGET - The budget for heating, cleaning, grounds, etc.

HEALTH SCIENCE CENTER ADMINISTRATION BUDGET - Money appropriated for the Provost/Chancellor.

LIBRARY BUDGET - Appropriations for the library and its operation.

COMPUTER BUDGET - Money allocated for campus-wide or institutional computer use and supplies.

DENTAL - TOTAL BUDGET - Complete budget for the college of dentistry.

DENTAL - SALARIES - That part of the budget allocated for salaries of faculty/staff including fringe benefits.

DENTAL - ADMINISTRATION - Costs for student, faculty, educational, and administration support of the institution. Includes square footage used in dental administration.

DENTAL - CLINIC COSTS - Costs of supplies, salaries to manage the dental preclinic and clinic programs.

DENTAL - NET SQUARE FOOTAGE - Square footage of the college of dentistry.

DEPRECIATION - Using the initial cost of the building and thirty-five years straight line depreciation to determine replacement of building.

EQUIPMENT REPLACEMENT - Using the initial estimated cost of the equipment and fifteen year straight line depreciation.

B. Income

CLINIC INCOME - Money generated from patient care.

CAPITATION - Federal support for dental health programs.

STUDENT STORE - Income generated from student store or support laboratories.

GRANT INCOME - Federal, state, or foundation money used to support undergraduate dental education.

DENTAL STUDENT-DENTAL HYGIENE STUDENT TUITION - Income generated from tuition and fees.

DENTAL STUDENT-DENTAL HYGIENE STUDENT INSTRUMENT FEES - Purchase and rental fee income from student instruments.

APPLICATION FEES - Income from application of dental and dental hygiene students to the dental program.

C. Curriculum

TOTAL CURRICULUM CLOCK HOURS - Number of hours in dental educational program.

TOTAL DIDACTIC CLOCK HOURS - Number of lecture hours in the dental program.

TOTAL CLINIC CLOCK HOURS - Number of hours allocated for clinical patient care in the dental curriculum.

TOTAL LABORATORY CLOCK HOURS - Preclinical and laboratory hours in the curriculum.

NATIONAL BOARD SCORES - The quintile ranking for each year by department.

D. Faculty/Students

TOTAL NUMBER OF STUDENTS - The number of students enrolled on the Health Science Center campus.

NUMBER OF DENTAL STUDENTS - Number of undergraduate dental students in the program for the fiscal year.

NUMBER OF DENTAL HYGIENE STUDENTS - Number of dental hygiene students for the fiscal year.

TOTAL NUMBER OF FACULTY - The number of full-time faculty equivalence (FTE/on the Health Science Center Campus).

FACULTY - F.T.E. - Faculty employed on a full-time basis, College of Dentistry.

FACULTY - P.T.E. - Faculty employed less than 1.0 F.T.E., College of Dentistry.

E. Department

DEPARTMENT - The department unit within the College of Dentistry.

DEPARTMENT FACULTY SALARIES - Salaries for all full-time and part-time faculty.

DEPARTMENT SUPPORT SALARIES - Staff and research salaries.

DEPARTMENT SQUARE FOOTAGE - Includes clinic, laboratory, and office space assigned to the department; plus square footage for educational and administration support use.

DEPARTMENTAL TOTAL CURRICULUM HOURS - The number of total hours of departmental obligation.

DEPARTMENT CLINIC HOURS - Hours assigned for departmental care of patients.

DEPARTMENT LABORATORY HOURS - Preclinical or laboratory hours for each department.

DEPARTMENT LECTURE HOURS - Hours devoted to didactic programs.

DEPARTMENT CLINIC COSTS - Supplies and salaries needed to manage the departmental clinic.

DEPARTMENT CLINIC INCOME - Income derived from undergraduate departmental student:patient care.

INCOME OTHER SOURCES - Income from grants, subsidies, etc.

FULL-TIME FACULTY - F.T.E. - Faculty in the Department, employed on a full-time basis.

PART-TIME FACULTY - P.T.E. - Faculty in the Department, employed on a part-time basis.

Colleges Surveyed

1. COLORADO (public funds)
   University of Colorado School of Dentistry
   4200 E. Ninth Avenue Box C-284
   Denver, Colorado 80262
   Dean: Lawrence H. Meskin, D.D.S.

2. NEBRASKA (private funds)
   Boyne School of Dental Science
   Creighton University
   2500 California Street
   Omaha, Nebraska 68178
   Robert V. Vining, D.D.S.

2. NORTH CAROLINA (public funds)
   School of Dentistry
   University of North Carolina at Chapel Hill
   104 Brauer Hall 211H
   Chapel Hill, North Carolina 27514
   Associate Dean: J. Bernard Machen, D.D.S.

4. OKLAHOMA (private funds)
   Michael Cardone, Sr., School of Dentistry
   Oral Roberts University
   7777 S. Lewis Avenue
   Tulsa, Oklahoma 74171
   Dean: Robert G. Hansen, D.D.S.

5. OREGON (public funds)
   School of Dentistry, Oregon Health Sciences University
   611 S.W. Campus Drive
   Portland, Oregon 97201
   Dean: Henry Van Hassell, D.D.S.

6. TEXAS
   Baylor College of Dentistry (private funds)
   3302 Gaston Avenue
   Dallas, Texas 75246
   Dean: Richard E. Bradley, D.D.S.

7. University of Texas Health Science Center at Houston, Dental Branch (public funds)
   P.O. Box 20068
   Houston, Texas 77225
   Dean: Don L. Allen, D.D.S.

8. University of Texas Health Science Center at San Antonio, Dental School (public funds)
   7703 Floyd Curl Drive
   San Antonio, Texas 78284
   Dean: Dominick P. DePaola, D.D.S.

FORMS USED FOR DATA COLLECTION

COST DATA INFORMATION
FISCAL YEAR 1983-84

COLLEGE OF DENTISTRY _____

DATA - COLLEGE OF DENTISTRY

BUDGET DATA

1. HEALTH SCIENCE CENTER BUDGET $_____
   (INCLUDES COLLEGES OF MEDICINE, PUBLIC HEALTH, NURSING, ETC.)

2. HEALTH SCIENCE CENTER ADMINISTRATION BUDGET $_____
   (VICE-PRESIDENT'S, CHANCELLOR'S OR PROVOST'S OFFICE)

3. HEALTH SCIENCE CENTER MAINTENANCE BUDGET $_____
   (HEATING, COOLING, AND PHYSICAL PLANT SUPPORT)

4. HEALTH SCIENCE CENTER LIBRARY BUDGET
   CAMPUS (A) $_____
   COLLEGE OF DENTISTRY (B) $_____

5. HEALTH SCIENCE CENTER COMPUTER BUDGET
   CAMPUS (A) $_____
   COLLEGE OF DENTISTRY (B) $_____

6. COLLEGE OF DENTISTRY SALARIES/WAGES/BENEFITS $_____
   (FACULTY, STAFF)

7. COLLEGE OF DENTISTRY ADMINISTRATION COSTS $_____

8. CLINIC SUPPLIES - SUPPORT COSTS $_____

9. BUILDING DEPRECIATION/REPLACEMENT $_____
   (ONE YEAR - STRAIGHT LINE - 33 YEARS)

10. EQUIPMENT REPLACEMENT/DEPRECIATION $_____
    (ONE YEAR - STRAIGHT LINE - 15 YEARS)

11. SQUARE FOOTAGE NET TOTALS
    CAMPUS (A) _____
    COLLEGE OF DENTISTRY (B) _____

INCOME DATA

1. COLLEGE OF DENTISTRY CLINIC INCOME $_____

2. CAPITATION INCOME $_____

3. STUDENT STORE, INSTRUMENT SALES $_____

4. GRANTS (FOR UNDERGRADUATE EDUCATION) $_____

5. DENTAL STUDENT TUITION $_____

6. DENTAL HYGIENE TUITION $_____

7. DENTAL STUDENT INSTRUMENT FEES $_____

8. DENTAL HYGIENE INSTRUMENT FEES $_____

9. APPLICATION FEES $_____

FORMS USED FOR DATA COLLECTION (CONT'D)

STUDENT FACULTY DATA

1. TOTAL NUMBER OF STUDENTS - CAMPUS (NURSING, MEDICAL, GRADUATE, DENTAL, ETC.) _____

2. NUMBER OF UNDERGRADUATE DENTAL STUDENTS FY83-84 _____

3. NUMBER OF DENTAL HYGIENE STUDENTS _____

4. TOTAL NUMBER OF FACULTY (FTE) - CAMPUS (STATE SUPPORTED) _____

5. COLLEGE OF DENTISTRY TOTAL FTE (STATE SUPPORTED) _____

CURRICULUM DATA

1. TOTAL CURRICULUM CLOCK HOURS _____

2. TOTAL CURRICULUM LECTURE CLOCK HOURS _____

3. TOTAL CURRICULUM LABORATORY CLOCK HOURS _____

4. TOTAL CURRICULUM CLINIC CLOCK HOURS _____

DATA BY DEPARTMENT*

*INCLUDE ALL BASIC SCIENCES AS ONE DEPARTMENT; INCLUDE DENTAL HYGIENE AS A DEPARTMENT

DEPARTMENT									
FACULTY SALARIES									
STAFF SALARIES									
BENEFITS									
OPERATION EXPENSES									
FULL-TIME FACULTY									
PART-TIME FACULTY									
TOTAL CURRICULUM CLOCK HOURS									
TOTAL LECTURE CLOCK HOURS									
TOTAL LABORATORY CLOCK HOURS									
TOTAL CLINIC CLOCK HOURS									
DEPARTMENT CLINIC INCOME									
OTHER INCOME (GRANTS, ETC.)									
DEPARTMENT SQUARE FOOTAGE									

Appendix B

Summary of cost data calculations

TABLE 11

SUMMARY OF COST DATA USED TO ASSIGN COSTS

FISCAL YEARS 1976-77 TO 1983-84

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
HSC BUDGET	$ 23,799,796	24,457,113	28,100,748	31,578,448	36,163,647	41,515,756	48,962,492	48,008,378
COLLEGE BUDGETS	8,902,603	10,415,662	11,005,747	13,371,117	15,307,706	15,279,257	18,553,020	20,273,156
O.U.D.S. BUDGET	2,577,911	2,930,524	3,305,711	3,713,808	4,288,161	4,791,756	5,199,995	5,178,278
HSC ADMINISTRATION BUDGET	2,496,518	2,570,031	2,697,187	2,934,542	3,461,519	3,483,778	3,995,707	4,026,221
O.U.D.S. ADMINISTRATION BUDGET	325,654	330,721	372,695	397,008	443,665	452,054	483,353	480,192
DATA PROCESSING	570,322	585,135	604,455	678,500	778,500	788,500	1,153,500	1,218,500
LIBRARY	512,463	557,826	588,960	694,260	818,946	877,375	1,153,500	1,096,215
MAINTENANCE BUDGET	3,484,490	4,112,355	5,011,187	5,493,750	5,999,911	6,660,641	7,496,485	7,464,114
CLINIC EXPENSES	637,007	747,681	914,425	1,078,972	1,315,109	1,401,504	1,405,054	1,409,812
BUILDING DEPRECIATION	336,257	336,257	336,257	336,257	336,257	336,257	336,257	336,257
EQUIPMENT REPLACEMENT	140,733	140,733	140,733	140,733	140,733	140,733	140,733	140,733
HSC SQ FOOTAGE	898,486	898,486	898,486	898,486	898,486	898,486	898,486	898,486
O.U.D.S. SQ FOOTAGE	112,000	112,000	112,000	112,000	112,000	112,000	112,000	112,000

TABLE 12

INCOME SOURCES FOR FISCAL YEARS 1976-77 TO 1983-84.

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
O.U.D.S. CLINIC INCOME	161,041	189,399	316,976	405,019	425,235	464,289	467,442	546,722
STUDENT TUITION	106,079	240,000	371,701	404,765	469,259	451,614	489,637	628,270
HYGIENE TUITION	22,320	25,374	27,608	24,568	25,125	27,422	29,355	29,800
STUDENT RENTAL FEES	61,000	80,000	101,884	119,936	106,800	87,102	100,401	102,400
HYGIENE RENTAL FEES	4,000	4,750	5,180	2,300	13,640	2,150	2,050	2,050
APPLICATION FEES	2,735	3,365	5,576	3,840	3,745	3,540	3,975	3,900
CAPITATION	128,099	170,019	269,755	348,028	154,178	130,921	0	0
STUDENT STORE	21,722	20,438	58,111	54,098	83,154	47,256	68,529	66,251
INCOME GRANTS	21,722	33,558	28,650	43,468	34,636	138,412	50,934	66,251
TOTAL	528,718	766,903	1,185,441	1,406,042	1,315,772	1,352,706	1,212,323	1,445,644

TABLE 13

COST CENTERS FOR FISCAL YEARS 1976-77 TO 1983-4

WHICH INCLUDE CURRICULUM, FACULTY, AND STUDENTS.

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
TOTAL CURRICULUM HOURS	5,576	5,576	5,576	5,146	5,146	5,146	5,127	5,127
TOTAL LECTURE HOURS	2,060	2,060	2,060	1,022	1,022	1,022	1,706	1,706
TOTAL LAB HOURS	1,112	1,112	1,112	774	774	774	934	934
TOTAL CLINIC HOURS	2,404	2,404	2,404	3,380	3,380	3,380	2,474	2,474
HSC STUDENT TOTAL	2,766	2,922	2,917	2,872	3,004	3,004	2,975	3,162
HSC FTE	325	371	396	404	407	405	420	412
NO. DENTAL STUDENTS	154	246	245	271	267	259	251	256
NO. DENTAL HYGIENE	40	41	45	46	45	43	41	41
O.U.D.S. FTE	68	73	75	78	79	78	80	82

TABLE 14
SUMMARY OF INDIRECT COST CONTRIBUTIONS
TO COST PER STUDENT AND COST PER HOUR
BY METHOD 1 TO METHOD 5.

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
1. NO. DS + DH/HSC STUDENTS								
COMPUTER; LIBRARY; HSC ADMINISTRATION	$ 251,043	364,692	386,793	475,423	525,432	517,708	618,619	595,591
% MAINTENANCE BUDGET--O.U.D.S. SQ. FT.	434,356	512,622	624,665	684,819	747,914	830,276	934,468	930,433
BUILDING DEPRECIATION	336,257	336,257	336,257	336,257	336,257	336,257	336,257	336,257
EQUIPMENT REPLACEMENT	140,733	140,733	140,733	140,733	140,733	140,733	140,733	140,733
SUBTOTAL	$1,162,389	1,354,304	1,488,448	1,637,232	1,750,336	1,824,975	2,030,077	2,003,013
O.U.D.S. BUDGET	2,577,911	2,930,524	3,305,711	3,713,808	4,288,161	4,791,756	5,199,995	5,178,278
TOTALS	$3,740,300	4,284,828	4,794,159	5,351,040	6,038,497	6,616,731	7,230,072	7,181,291
2. DS FTE/HSC FTE								
COMPUTER; LIBRARY; HSC ADMINISTRATION	$ 749,719	730,015	740,273	840,579	984,205	996,625	1,207,157	1,244,412
% MAINTENANCE BUDGET--O.U.D.S. SQ. FT.	434,356	512,622	624,665	684,819	747,914	830,276	934,468	930,433
BUILDING DEPRECIATION	336,257	336,257	336,257	336,257	336,257	336,257	336,257	336,257
EQUIPMENT REPLACEMENT	140,733	140,733	140,733	140,733	140,733	140,733	140,733	140,733
SUBTOTAL	$1,661,065	1,719,627	1,841,929	2,002,388	2,209,109	2,303,891	2,618,614	2,651,835
O.U.D.S. BUDGET	2,577,911	2,930,524	3,305,711	3,713,808	4,288,161	4,791,756	5,199,995	5,178,278
TOTALS	$4,238,976	4,650,151	5,147,640	5,716,196	6,497,270	7,095,647	7,818,609	7,830,113

TABLE 14 (CONTINUED--PAGE TWO)
SUMMARY OF INDIRECT COST CONTRIBUTIONS
TO COST PER STUDENT AND COST PER HOUR
BY METHOD 1 TO METHOD 5.

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
3. O.U.D.S. BUDGET/HSC BUDGET								
COMPUTER; LIBRARY; HSC ADMINISTRATION	$ 387,698	444,902	457,682	506,564	599,875	594,374	669,370	683,946
% MAINTENANCE BUDGET--O.U.D.S. SQ. FT.	434,356	512,622	624,665	684,819	747,914	830,276	934,468	930,433
BUILDING DEPRECIATION	336,257	336,257	336,257	336,257	336,257	336,257	336,257	336,257
EQUIPMENT REPLACEMENT	140,733	140,733	140,733	140,733	140,733	140,733	140,733	140,733
SUBTOTAL	$1,299,044	1,434,514	1,559,337	1,668,372	1,824,778	1,901,640	2,080,828	2,091,369
O.U.D.S. BUDGET	2,577,911	2,930,524	3,305,711	3,713,808	4,288,161	4,791,756	5,199,995	5,178,278
TOTALS	$3,876,955	4,365,038	4,865,048	5,382,180	6,112,939	6,693,396	7,280,823	7,269,647
4. O.U.D.S. BUDGET/OTHER BUDGETS								
COMPUTER; LIBRARY; HSC ADMINISTRATION	$1,036,452	1,044,678	1,168,590	1,196,347	1,417,172	1,614,992	1,766,507	1,619,636
% MAINTENANCE BUDGET--O.U.D.S. SQ. FT.	134,356	512,622	624,665	684,819	747,914	830,276	934,468	930,433
BUILDING DEPRECIATION	336,257	336,257	336,257	336,257	336,257	336,257	336,257	336,257
EQUIPMENT REPLACEMENT	140,733	140,733	140,733	140,733	140,733	140,733	140,733	140,733
SUBTOTAL	$1,947,799	2,034,290	2,270,245	2,358,155	2,642,076	2,922,259	3,177,965	3,027,059
O.U.D.S. BUDGET	2,577,911	2,930,524	3,305,711	3,713,808	4,288,161	4,791,756	5,199,995	5,178,278
TOTALS	$4,525,710	4,964,814	5,575,956	6,071,963	6,930,237	7,714,015	8,377,960	8,205,337

TABLE 14 (CONTINUED--PAGE THREE)
SUMMARY OF INDIRECT COST CONTRIBUTIONS
TO COST PER STUDENT AND COST PER HOUR
BY METHOD 1 TO METHOD 5.

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
5. NO. DS + DDS FTE/HSC STUDENTS + HSC FTE								
COMPUTER; LIBRARY; HSC ADMINISTRATION	$ 303,562	405,929	429,119	520,484	580,184	574,617	691,473	671,891
% MAINTENANCE BUDGET--O.U.D.S. SQ. FT.	434,356	512,622	624,665	684,819	747,914	830,276	934,468	930,433
BUILDING DEPRECIATION	336,257	336,257	336,257	336,257	336,257	336,257	336,257	336,257
EQUIPMENT REPLACEMENT	140,733	140,733	140,733	140,733	140,733	140,733	140,733	140,733
SUBTOTAL	$1,214,908	1,395,541	1,530,774	1,682,292	1,805,088	1,881,884	2,102,931	2,079,313
O.U.D.S. BUDGET	2,577,911	2,930,524	3,305,711	3,713,808	4,288,161	4,791,756	5,199,995	5,178,278
TOTALS	$3,792,819	4,326,065	4,836,485	5,396,100	6,093,249	6,673,640	7,302,926	7,257,591

TABLE 15

SUMMARY OF DIRECT COSTS AND INCOME BY DEPARTMENT FOR FISCAL YEARS 1976-77 TO 1983-84.

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT								
PEDODONTICS								
COST	$100,737	103,821	123,244	164,126	156,016	234,183	233,592	231,905
INCOME	17,736	20,216	37,888	47,480	45,571	47,443	50,831	69,691
ORTHODONTICS								
COST	80,677	110,132	128,302	112,765	111,119	196,529	240,899	189,846
INCOME	3,401	3,107	5,141	6,149	5,633	8,966	7,122	8,170
PERIODONTICS								
COST	67,224	115,148	178,631	218,955	142,750	234,792	292,873	288,912
INCOME	6,119	7,197	15,866	25,272	16,715	25,585	23,586	24,236
ORAL DIAGNOSIS								
COST	160,359	169,189	170,626	203,893	207,200	293,096	298,775	285,073
INCOME	18,073	24,544	35,503	36,877	31,153	33,756	31,088	41,596
ORAL PATHOLOGY								
COST	77,409	89,306	133,290	152,641	173,859	199,175	213,890	210,707
INCOME	60	5	0	0	0	0	0	0
DENT SERV ADMIN								
COST	249,753	169,480	188,159	258,572	277,727	292,397	315,237	307,779
INCOME	212,839	134,272	134,717	9,333	8,771	9,333	0	0
ORAL SURGERY								
COST	75,455	111,674	134,417	142,244	152,054	113,725	129,681	131,994
INCOME	440	9,596	22,839	22,071	20,607	26,092	21,318	29,992
FIXED PROSTHODONTICS								
COST	169,092	191,273	243,089	305,972	304,603	354,995	357,148	374,725
INCOME	43,456	45,662	72,042	143,537	151,866	145,957	157,181	165,931
OPERATIVE DENTISTRY								
COST	165,288	177,110	203,731	226,167	234,427	271,228	340,707	326,061
INCOME	14,567	20,208	34,672	50,660	42,151	56,839	60,194	77,495
REMOVABLE PROSTHODONTICS								
COST	151,883	165,090	230,832	246,641	273,214	349,224	364,045	356,728
INCOME	35,173	40,103	60,834	93,924	78,520	74,097	70,436	84,712

TABLE 15 (CONTINUED--PAGE TWO)

SUMMARY OF DIRECT COSTS AND INCOME BY DEPARTMENT FOR FISCAL YEARS 1976-77 TO 1983-84.

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT								
ENDODONTICS								
COST	50,630	49,015	76,111	110,155	77,658	103,829	120,968	128,505
INCOME	7,791	9,415	28,429	28,178	30,451	41,387	39,827	40,509
OCCLUSION								
COST	52,795	77,188	93,212	99,553	99,304	107,397	111,833	122,133
INCOME	352	157	41	60	104	400	324	302
DENTAL MATERIALS								
COST	61,705	96,110	106,029	112,511	110,663	133,702	137,341	307,779
INCOME	7,000	6,950	5,500	415	0	2,980	0	0
DENTAL HYGIENE								
COST	100,737	134,339	107,876	123,034	136,843	151,118	109,406	174,438
INCOME	5,110	6,920	9,019	9,914	7,673	6,321	7,756	7,759
BASIC SCIENCE								
COST	294,570	413,376	451,356	479,383	544,989	564,339	654,336	591,906

TABLE 16

SUMMARY OF INCOME ASSIGNED TO EACH DEPARTMENT
BY EITHER (A) DEPT HOURS/TOTAL CURRICULUM OR
(B) DEPT FTE/O.U.D.S. FTE

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT								
PEDODONTICS								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	851,772	858,845	713,476	854,092
METHOD A	53,872	36,518	55,751	53,382	46,677	50,736	45,644	55,471
METHOD B	29,030	23,961	37,633	55,559	39,792	54,773	43,429	48,228
ORTHODONTICS								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	19,242	49,660	71,131	69,851	61,149	61,584	56,777	67,967
METHOD B	6,756	38,345	58,012	35,804	24,764	43,818	31,907	35,113
PERIODONTICS								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	22,252	57,429	82,258	75,151	65,789	66,257	62,065	74,297
METHOD B	13,994	38,345	96,687	74,078	38,762	60,250	58,496	61,965
ORAL DIAGNOSIS								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	23,727	61,237	87,713	59,440	52,034	52,405	69,162	82,793
METHOD B	19,303	46,479	66,069	58,028	45,222	67,918	54,950	53,703
ORAL PATHOLOGY								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	9,975	25,744	36,874	21,201	18,560	18,692	14,333	17,158
METHOD B	9,651	23,239	48,343	37,039	32,302	32,864	26,589	30,982

TABLE 16 (CONTINUED--PAGE TWO)

SUMMARY OF INCOME ASSIGNED TO EACH DEPARTMENT
BY EITHER (A) DEPT HOURS/TOTAL CURRICULUM OR
(B) DEPT FTE/O.U.D.S. FTE

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT								
DENT SERV ADMIN								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	22,252	57,429	82,258	59,623	52,034	52,405	30,893	36,982
METHOD B	27,024	67,394	99,909	66,876	58,143	47,105	62,041	51,638
ORAL SURGERY								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	12,749	32,903	47,129	29,720	26,017	26,202	28,945	34,650
METHOD B	7,238	30,211	58,012	43,212	27,995	17,527	14,180	25,819
FIXED PROSTHODONTICS								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	1,519,918	854,092
METHOD A	32,817	84,696	121,315	101,086	88,492	89,122	171,943	96,620
METHOD B	25,094	60,422	96,687	85,190	67,834	72,300	120,838	65,063
OPERATIVE DENTISTRY								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	25,439	65,655	94,041	74,962	65,623	66,090	56,777	67,967
METHOD B	32,333	70,880	98,298	87,659	82,908	88,732	64,700	74,358
REMOVABLE PROSTHODONTICS								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	24,967	64,436	92,295	81,777	71,589	72,098	61,230	73,298
METHOD B	21,233	52,288	96,687	74,078	64,603	72,300	62,927	64,031

TABLE 16 (CONTINUED--PAGE THREE)

SUMMARY OF INCOME ASSIGNED TO EACH DEPARTMENT
BY EITHER (A) DEPT HOURS/TOTAL CURRICULUM OR
(B) DEPT FTE/O.U.D.S. FTE

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT								
ENDODONTICS								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	11,155	28,790	41,238	28,016	24,525	24,700	22,404	26,820
METHOD B	5,308	11,619	30,617	34,570	22,611	35,195	18,612	23,753
OCCLUSION								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	11,686	30,161	43,202	36,913	32,314	32,544	26,579	31,818
METHOD B	6,756	25,563	41,897	33,335	24,764	24,100	23,043	22,720
DENTAL MATERIALS								
INCOME O.U.D.S.	329,122	849,404	1,216,645	974,135	852,772	858,845	713,476	854,092
METHOD A	3,305	8,530	12,218	11,358	9,942	10,013	8,210	9,828
METHOD B	4,825	23,239	32,229	24,692	21,534	21,909	17,726	65,063
DENTAL HYGIENE								
INCOME O.U.D.S.	188,363	559,528	699,352	476,302	315,478	349,701	154,843	155,272
METHOD A	29,727	88,304	11,037	81,450	53,948	59,801	31,772	31,860
METHOD B	16,019	50,518	54,651	41,653	23,501	27,208	8,655	8,448
BASIC SCIENCE								
INCOME O.U.D.S.	188,363	559,528	699,352	476,302	315,478	349,701	154,843	155,272
METHOD A	48,813	145,000	181,235	76,730	50,822	56,335	25,188	25,257
METHOD B	18,781	63,530	76,882	44,068	29,874	31,669	0	11,828

TABLE 17

TOTAL OF INDIRECT COST ASSESSMENTS TO EACH DEPARTMENT BY
(A) CLINIC SUPPORT, (B) EQUIPMENT REPLACEMENT AND (C) MAINTENANCE

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT								
PEDODONTICS								
(A)	$113,052	71,025	86,865	67,792	82,629	88,057	111,728	112,107
(B)	24,976	13,368	13,368	8,842	8,842	8,842	11,190	11,190
(C)	36,377	32,373	39,448	43,247	47,232	52,433	59,013	58,758
TOTAL	174,406	116,767	139,683	119,883	138,704	149,334	181,932	182,056
ORTHODONTICS								
(A)	38,771	45,507	55,656	64,416	78,514	83,671	33,527	116,657
(B)	8,565	8,565	8,565	8,401	8,401	8,401	3,358	11,645
(C)	30,121	35,549	43,319	47,491	51,866	57,578	64,803	64,523
TOTAL	77,458	89,622	107,541	120,309	138,782	149,652	101,689	192,826
PERIODONTICS								
(A)	55,982	65,709	80,363	79,741	97,192	103,578	146,772	147,269
(B)	12,368	12,368	12,368	10,400	10,400	10,400	14,701	14,701
(C)	30,261	35,714	43,520	47,711	52,106	57,845	65,104	64,822
TOTAL	98,612	113,792	136,252	137,853	159,700	171,824	226,577	226,793
ORAL DIAGNOSIS								
(A)	56,163	65,921	80,623	66,494	81,046	86,371	166,974	167,539
(B)	12,408	12,408	12,408	8,673	8,673	8,673	16,724	16,724
(C)	21,663	25,567	31,155	34,155	37,302	41,410	46,606	46,405
TOTAL	90,235	103,897	124,187	109,323	127,022	136,454	230,305	230,669
ORAL PATHOLOGY								
(A)	12,138	14,247	17,425	11,168	13,613	14,507	5,771	5,791
(B)	2,681	2,681	2,681	1,456	1,456	1,456	578	578
(C)	6,631	7,826	9,537	10,455	11,419	12,676	14,267	14,205
TOTAL	21,452	24,756	29,644	23,081	26,489	28,641	20,617	20,575

TABLE 17 (CONTINUED—PAGE TWO)

TOTAL OF INDIRECT COST ASSESSMENTS TO EACH DEPARTMENT BY
(A) CLINIC SUPPORT, (B) EQUIPMENT REPLACEMENT AND (C) MAINTENANCE

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT								
DENT SERV ADMIN								
(A)	29,893	35,087	42,912	8,341	27,226	29,015	23,087	23,165
(B)	6,604	6,604	6,604	1,088	2,913	2,913	2,312	2,312
(C)	25,153	29,686	36,174	21,183	43,312	48,081	54,115	53,882
TOTAL	61,651	71,378	85,691	30,613	73,452	80,010	79,516	79,360
ORAL SURGERY								
(A)	28,987	34,024	41,612	23,117	28,176	30,027	38,754	38,885
(B)	6,404	6,404	6,404	3,015	3,015	3,015	3,881	3,881
(C)	14,675	17,319	21,104	23,137	25,268	28,051	31,571	28,943
TOTAL	50,067	57,747	69,121	49,269	56,460	61,094	74,207	71,710
FIXED PROSTHODONTICS								
(A)	92,217	108,239	132,378	124,417	151,646	161,608	63,844	222,145
(B)	20,373	20,373	20,373	16,228	16,228	16,228	6,394	22,175
(C)	30,366	35,837	43,670	47,876	52,287	58,045	65,329	65,047
TOTAL	142,957	164,451	196,423	188,521	220,161	235,881	135,569	309,367
OPERATIVE DENTISTRY								
(A)	67,034	78,680	96,227	84,676	103,208	109,988	148,833	149,337
(B)	14,809	14,809	14,809	11,044	11,044	11,044	14,907	14,907
(C)	29,706	35,059	42,722	46,836	51,152	56,785	63,910	63,635
TOTAL	111,551	128,550	153,760	142,557	165,404	177,818	227,652	227,880
REMOVABLE PROSTHODONTICS								
(A)	64,497	75,703	92,586	95,325	116,188	123,821	145,123	145,614
(B)	14,249	14,249	14,249	12,433	12,433	12,433	14,535	14,535
(C)	29,776	35,142	42,823	46,946	51,272	56,918	64,061	63,784
TOTAL	108,524	125,095	149,659	154,796	179,894	193,173	223,720	223,935

TABLE 17 (CONTINUED--PAGE THREE)

TOTAL OF INDIRECT COST ASSESSMENTS TO EACH DEPARTMENT BY
(A) CLINIC SUPPORT, (B) EQUIPMENT REPLACEMENT AND (C) MAINTENANCE

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT								
ENDODONTICS								
(A)	27,176	31,897	39,011	30,389	37,040	39,474	48,236	48,400
(B)	6,003	6,003	6,003	3,963	3,963	3,963	4,831	4,831
(C)	21,865	25,805	31,696	34,473	37,649	41,795	47,040	46,837
TOTAL	55,045	63,706	76,711	68,827	78,654	85,233	100,109	100,069
OCCLUSION								
(A)	24,639	28,920	35,370	36,364	44,322	47,234	57,719	57,914
(B)	5,443	5,443	5,443	4,743	4,743	4,743	5,781	5,781
(C)	3,668	4,329	5,276	5,784	6,317	7,012	7,892	7,858
TOTAL	33,752	38,694	46,090	46,891	55,382	58,990	71,393	71,554
DENTAL MATERIALS								
(A)	1,449	1,701	2,080	2,597	3,165	2,699	3,298	3,309
(B)	320	320	320	338	338	271	330	330
(C)	8,756	10,334	12,593	13,806	15,078	16,739	18,505	18,758
TOTAL	10,526	12,356	14,994	16,742	18,583	19,709	22,134	22,398
DENTAL HYGIENE								
(A)	113,052	132,694	162,287	162,080	197,551	210,529	318,281	319,359
(B)	24,976	24,976	24,976	21,140	21,140	21,140	31,879	31,879
(C)	36,377	42,932	52,315	57,353	62,637	69,535	78,261	77,923
TOTAL	174,406	200,603	239,579	240,574	281,329	301,205	428,422	429,162
15								
(A)	83,521	98,032	120,155	60,779	74,081	78,948	99,359	99,696
(B)	18,452	18,452	18,492	7,927	7,927	7,927	9,952	9,952
(C)*	.	.	.	.	.	.	.	.
TOTAL	101,973	116,484	138,647	68,706	82,008	86,875	109,331	109,648

TABLE 18A

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF DENTAL STUDENTS/HSC STUDENTS (METHOD 1) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
PEDODONTICS	COMPUTER	1	39,619	24,330	25,804	26,053	28,793	30,583	39,576	38,102
	BLDG DEPRECIATION	1	53,067	22,433	22,433	18,426	18,426	19,864	21,512	21,512
	ADMIN SQ FT	1	8,611	4,296	5,235	4,714	5,148	6,161	7,510	7,477
	EDUC SQ FT	1	9,338	4,659	5,677	5,112	5,583	6,681	8,144	8,109
	ADMIN STUDENT SPT	1	51,394	22,063	24,864	21,756	24,312	26,705	30,922	30,720
TOTAL METHOD 1A			162,032	77,782	84,014	76,062	82,265	89,996	107,665	105,922
	COMPUTER	1	21,349	15,964	17,418	27,115	24,546	33,017	37,655	33,128
	BLDG DEPRECIATION	1	28,596	14,719	15,142	19,178	15,709	21,445	20,467	18,703
	ADMIN SQ FT	1	4,640	2,819	3,533	4,906	4,389	6,652	7,145	6,501
	EDUC SQ FT	1	5,032	3,057	3,832	5,320	4,760	7,213	7,748	7,050
	ADMIN STUDENT SPT	1	27,694	14,477	16,783	22,643	20,726	28,830	29,421	26,709
TOTAL METHOD 1B			87,314	51,038	56,711	79,164	70,131	97,157	102,439	92,093
ORTHODONTICS	COMPUTER	1	14,677	21,321	22,613	34,090	37,684	37,122	49,228	47,396
	BLDG DEPRECIATION	1	19,659	19,659	19,659	24,111	24,111	24,111	26,758	26,758
	ADMIN SQ FT	1	3,190	3,765	4,587	6,168	6,737	7,479	9,341	9,301
	EDUC SQ FT	1	3,459	4,082	4,975	6,689	7,306	8,110	10,130	10,087
	ADMIN STUDENT SPT	1	19,039	19,335	21,789	28,467	31,813	32,415	35,973	38,213
TOTAL METHOD 1A			60,025	68,164	73,625	99,529	107,653	109,240	131,434	131,757
	COMPUTER	1	5,153	16,463	18,443	17,474	15,261	26,413	27,664	24,486
	BLDG DEPRECIATION	1	6,902	15,179	16,033	12,359	9,765	17,156	15,037	13,824
	ADMIN SQ FT	1	1,120	2,907	3,741	3,162	2,728	5,321	5,249	4,805
	EDUC SQ FT	1	1,214	3,152	4,057	3,429	2,958	5,770	5,693	5,211
	ADMIN STUDENT SPT	1	6,684	14,929	17,770	14,592	12,884	23,064	20,216	19,741
TOTAL METHOD 1B			21,075	52,633	60,046	51,016	43,598	77,726	73,861	68,069
PERIODONTICS	COMPUTER	1	16,973	24,657	26,151	36,677	40,543	39,939	53,813	51,810
	BLDG DEPRECIATION	1	22,734	22,734	22,734	25,941	25,941	25,941	29,251	29,251
	ADMIN SQ FT	1	3,689	4,354	5,305	6,637	7,248	8,046	10,212	10,167
	EDUC SQ FT	1	4,000	4,721	5,753	7,197	7,860	8,726	11,074	11,026
	ADMIN STUDENT SPT	1	22,017	22,360	25,198	30,628	34,227	34,874	39,324	41,772
TOTAL METHOD 1A			69,415	78,828	85,144	107,081	115,822	117,529	143,676	144,028

TABLE 18A (CONTINUED--PAGE TWO)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF DENTAL STUDENTS/HSC STUDENTS (METHOD 1) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
PERIODONTICS (cont)	COMPUTER	1	10,674	16,463	30,738	36,153	23,888	36,318	50,719	43,210
	BLDG DEPRECIATION	1	14,298	15,179	26,722	25,570	15,284	23,589	27,568	24,395
	ADMIN SQ FT	1	2,320	2,907	6,236	6,542	4,270	7,317	9,624	8,480
	EDUC SQ FT	1	2,516	3,152	6,762	7,094	4,631	7,935	10,437	9,196
	ADMIN STUDENT SPT	1	13,847	14,929	29,618	30,190	20,166	31,713	37,062	34,838
TOTAL METHOD 1B			43,657	52,633	100,078	105,552	68,241	106,873	135,413	120,122
ORAL DIAGNOSIS	COMPUTER	1	18,098	26,292	27,885	29,009	32,067	31,589	59,967	57,735
	BLDG DEPRECIATION	1	24,242	24,242	24,242	20,517	20,517	20,517	32,596	32,596
	ADMIN SQ FT	1	3,933	4,642	5,657	5,249	5,733	6,364	11,379	11,330
	EDUC SQ FT	1	4,266	5,034	6,135	5,692	6,217	6,901	12,340	12,287
	ADMIN STUDENT SPT	1	23,477	23,843	26,869	24,224	27,071	27,583	43,821	46,548
TOTAL METHOD 1A			74,019	84,055	90,790	84,694	91,607	92,957	160,105	160,498
	COMPUTER	1	14,723	19,955	21,004	28,320	27,869	40,941	47,645	37,449
	BLDG DEPRECIATION	1	19,721	18,399	18,260	20,030	17,831	26,591	25,898	21,143
	ADMIN SQ FT	1	3,200	3,523	4,261	5,124	4,982	8,248	9,041	7,349
	EDUC SQ FT	1	3,470	3,821	4,621	5,557	5,403	8,944	9,804	7,970
	ADMIN STUDENT SPT	1	19,099	18,096	20,239	23,649	23,527	35,749	34,816	30,193
TOTAL METHOD 1B			60,216	63,797	69,386	82,682	79,614	120,476	127,206	104,106
ORAL PATHOLOGY	COMPUTER	1	7,608	11,053	11,723	10,347	11,438	11,267	12,427	11,965
	BLDG DEPRECIATION	1	10,191	10,191	10,191	7,318	7,318	7,318	6,755	6,755
	ADMIN SQ FT	1	1,653	1,951	2,378	1,872	2,044	2,270	2,358	2,348
	EDUC SQ FT	1	1,793	2,116	2,579	2,030	2,217	2,461	2,557	2,546
	ADMIN STUDENT SPT	1	9,870	10,023	11,295	8,640	9,656	9,838	9,081	9,646
TOTAL METHOD 1A			31,117	35,336	38,168	30,209	32,675	33,156	33,180	33,262
	COMPUTER	1	7,361	9,977	15,369	18,076	19,906	19,810	23,054	21,605
	BLDG DEPRECIATION	1	9,860	9,199	13,361	12,785	12,737	12,867	12,531	12,198
	ADMIN SQ FT	1	1,600	1,761	3,118	3,271	3,558	3,991	4,374	4,240
	EDUC SQ FT	1	1,735	1,910	3,381	3,547	3,859	4,328	4,744	4,598
	ADMIN STUDENT SPT	1	9,549	9,048	14,809	15,095	16,805	17,298	16,846	17,419
TOTAL METHOD 1B			30,108	31,898	50,039	52,776	56,867	58,294	61,551	60,061

TABLE 18A(CONTINUED--PAGE THREE)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF DENTAL STUDENTS/HSC STUDENTS (METHOD 1) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DENT SERV ADMIN	COMPUTER	1	16,973	24,657	26,151	54,942	32,067	31,589	26,786	25,789
	BLDG DEPRECIATION	1	22,734	22,734	22,734	20,517	20,517	20,517	14,560	14,560
	ADMIN SQ FT	1	3,689	4,354	5,305	2,804	5,733	6,364	5,083	5,061
	EDUC SQ FT	1	4,000	4,721	5,753	3,040	6,217	6,901	5,512	5,488
	ADMIN STUDENT SPT	1	22,017	22,360	25,198	24,224	27,071	27,583	19,574	20,792
TOTAL METHOD 1A			69,415	78,828	85,144	105,530	91,607	92,957	71,515	71,691
	COMPUTER	1	20,613	28,935	31,763	61,625	35,832	28,394	58,792	36,009
	BLDG DEPRECIATION	1	27,610	26,679	27,613	23,013	22,926	18,442	29,239	20,329
	ADMIN SQ FT	1	4,480	5,109	6,444	3,145	6,406	5,720	10,208	7,066
	EDUC SQ FT	1	4,858	5,540	6,988	3,410	6,947	6,203	11,070	7,663
	ADMIN STUDENT SPT	1	26,739	26,240	30,605	27,171	30,249	24,793	39,309	29,032
TOTAL METHOD 1B			84,303	92,506	103,414	118,367	102,362	83,555	143,620	100,102
ORAL SURGERY	COMPUTER	1	9,724	14,127	14,983	14,504	16,033	15,794	25,097	24,162
	BLDG DEPRECIATION	1	13,025	13,025	13,025	10,258	10,258	10,258	13,641	13,641
	ADMIN SQ FT	1	2,113	2,494	3,039	2,624	2,866	3,182	4,762	4,741
	EDUC SQ FT	1	2,292	2,705	3,296	2,846	3,108	3,450	5,164	5,142
	ADMIN STUDENT SPT	1	12,615	12,811	14,437	12,112	13,535	13,791	18,339	19,481
TOTAL METHOD 1A			39,771	45,164	48,782	42,347	45,803	46,478	67,005	67,170
	COMPUTER	1	5,521	12,971	18,443	21,089	17,252	10,565	12,295	18,004
	BLDG DEPRECIATION	1	7,395	11,959	16,033	14,916	11,038	6,862	6,683	10,165
	ADMIN SQ FT	1	1,200	2,290	3,741	3,816	3,084	2,128	2,333	3,533
	EDUC SQ FT	1	1,301	2,483	4,057	4,138	3,344	2,308	2,530	3,831
	ADMIN STUDENT SPT	1	7,162	11,763	17,770	17,611	14,564	9,225	8,994	14,516
TOTAL METHOD 1B			22,581	41,468	60,046	61,572	49,285	31,090	32,827	50,050
FIXED PROSTHODONTICS	COMPUTER	1	25,032	36,364	38,568	49,334	54,534	53,722	78,454	67,377
	BLDG DEPRECIATION	1	33,529	33,529	33,529	34,893	34,893	34,893	38,039	38,039
	ADMIN SQ FT	1	5,440	6,421	7,824	8,927	9,749	10,823	13,280	13,222
	EDUC SQ FT	1	5,900	6,963	8,485	9,681	10,573	11,737	14,401	14,339
	ADMIN STUDENT SPT	1	32,472	32,977	37,162	41,197	46,039	46,909	54,680	54,322
TOTAL METHOD 1A			102,375	116,256	125,570	144,034	155,790	158,087	198,856	187,301

TABLE 18A (CONTINUED--PAGE FOUR)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF DENTAL STUDENTS/HSC STUDENTS (METHOD 1) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
FIXED PROSTHODONTICS (cont)	COMPUTER	1	19,141	25,942	30,738	41,576	41,804	43,582	55,136	35,371
	BLDG DEPRECIATION	1	25,638	23,919	26,722	29,406	26,747	28,307	26,733	25,615
	ADMIN SQ FT	1	4,160	4,580	6,236	7,523	7,473	8.780	9,333	8,904
	EDUC SQ FT	1	4,511	4,967	6,762	8,158	8,104	9,522	10,121	9,656
	ADMIN STUDENT SPT	1	24,829	23,526	29,618	34,719	35,281	38,055	38,428	36,580
TOTAL METHOD 1B			78,281	82,937	100,078	121,385	119,422	128,248	139,752	126,128
OPERATIVE DENTISTRY	COMPUTER	1	19,404	28,189	29,897	36,585	40,441	39,839	49,228	47,396
	BLDG DEPRECIATION	1	25,991	25,991	25,991	25,876	25,876	25,876	26,758	26,758
	ADMIN SQ FT	1	4,217	4,977	6,065	6,620	7,230	8,026	9,341	9,301
	EDUC SQ FT	1	4,573	5,397	6,577	7,179	7,840	8,704	10,130	10,087
	ADMIN STUDENT SPT	1	25,171	25,563	28,807	30,550	34,141	34,786	35,973	38,213
TOTAL METHOD 1A			79,358	90,119	97,339	106,812	115,530	117,233	131,434	131,757
	COMPUTER	1	24,662	30,432	31,250	42,782	51,093	53,487	56,098	51,853
	BLDG DEPRECIATION	1	33,034	28,059	27,167	30,258	32,691	34,740	30,492	29,275
	ADMIN SQ FT	1	5,360	5,373	6,340	7,741	9,134	10,776	10,645	10,176
	EDUC SQ FT	1	5,813	5,827	6,875	8,395	9,905	11,686	11,544	11,035
	ADMIN STUDENT SPT	1	31,992	27,597	30,111	35,725	43,134	46,704	40,993	41,806
TOTAL METHOD 1B			100,863	97,291	101,746	124,904	145,960	157,395	149,775	144,146
REMOVABLE PROSTHODONTICS	COMPUTER	1	19,044	27,665	29,342	39,911	44,118	43,460	53,090	51,113
	BLDG DEPRECIATION	1	25,508	25,508	25,508	28,228	28,228	28,228	28,857	28,857
	ADMIN SQ FT	1	4,139	4,885	5,953	7,222	7,887	8,756	10,074	10,031
	EDUC SQ FT	1	4,488	5,297	6,455	7,831	8,533	9,495	10,925	10,878
	ADMIN STUDENT SPT	1	24,704	25,088	28,273	33,328	37,245	37,949	38,795	41,210
TOTAL METHOD 1A			77,885	88,446	95,532	116,522	126,033	127,890	141,743	142,091
	COMPUTER	1	16,196	22,450	30,738	36,153	39,813	43,582	54,561	44,651
	BLDG DEPRECIATION	1	21,694	20,699	26,722	25,570	25,474	28,307	29,657	25,209
	ADMIN SQ FT	1	3,520	3,964	6,236	6,542	7,117	8,780	10,353	8,762
	EDUC SQ FT	1	3,817	4,299	6,762	7,094	7,718	9,522	11,228	9,502
	ADMIN STUDENT SPT	1	21,009	20,359	29,618	30,190	33,611	38,055	39,870	35,999
TOTAL METHOD 1B			66,238	71,772	100,078	105,552	113,735	128,248	145,671	124,126

TABLE 18A (CONTINUED--PAGE FIVE)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF DENTAL STUDENTS/HSC STUDENTS (METHOD 1) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
ENDODONTICS	COMPUTER	1	8,509	12,361	13,110	13,673	15,114	14,889	19,426	18,703
	BLDG DEPRECIATION	1	11,397	11,397	11,397	9,670	9,670	9,670	10,559	10,559
	ADMIN SQ FT	1	1,849	2,182	2,659	2,475	2,702	2,999	3,686	3,670
	EDUC SQ FT	1	2,005	2,367	2,884	2,683	2,930	3,253	2,997	3,980
	ADMIN STUDENT SPT	1	11,038	11,209	12,632	11,418	12,759	13,001	14,195	15,079
TOTAL METHOD 1A			34,800	39,518	42,684	39,919	43,177	42,814	51,865	51,992
	COMPUTER	1	4,049	4,988	9,733	16,871	13,934	15,187	16,137	16,564
	BLDG DEPRECIATION	1	5,423	4,599	8,462	11,933	8,915	9,864	8,771	9,351
	ADMIN SQ FT	1	880	880	1,974	3,053	2,491	3,059	3,062	3,250
	EDUC SQ FT	1	954	955	2,141	3,310	2,701	3,318	3,320	3,525
	ADMIN STUDENT SPT	1	5,252	4,524	9,379	14,089	11,763	13,261	11,792	13,354
TOTAL METHOD 1B			16,559	15,949	31,691	49,257	39,807	44,692	43,085	46,046
OCCLUSION	COMPUTER	1	8,914	12,950	13,734	18,015	19,914	19,617	23,045	22,188
	BLDG DEPRECIATION	1	11,940	11,940	11,940	12,742	12,742	12,742	12,526	12,526
	ADMIN SQ FT	1	1,937	2,286	2,786	3,259	3,560	3,952	4,373	4,354
	EDUC SQ FT	1	2,101	2,479	3,021	3,535	3,860	4,286	4,742	4,722
	ADMIN STUDENT SPT	1	11,563	11,743	13,234	15,044	16,812	17,129	16,840	17,889
TOTAL METHOD 1A			36,457	41,400	44,717	52,596	56,889	57,728	61,529	61,680
	COMPUTER	1	5,153	10,975	13,320	16,269	15,261	14,527	19,980	15,844
	BLDG DEPRECIATION	1	6,902	10,119	11,579	11,506	9,765	9,435	10,860	8,945
	ADMIN SQ FT	1	1,120	1,938	2,702	2,944	2,728	2,926	3,791	3,109
	EDUC SQ FT	1	1,214	2,101	2,930	3,192	2,958	3,174	4,111	3,371
	ADMIN STUDENT SPT	1	6,684	9,953	12,834	13,585	12,884	12,685	14,600	12,774
TOTAL METHOD 1B			21,075	35,088	43,367	47,498	43,598	42,749	53,344	44,044
DENTAL MATERIALS	COMPUTER	1	2,521	3,662	3,884	5,543	6,127	6,036	7,118	6,853
	BLDG DEPRECIATION	1	3,377	3,377	3,377	3,920	3,920	3,920	3,869	3,869
	ADMIN SQ FT	1	548	646	788	1,003	1,095	1,216	1,350	1,345
	EDUC SQ FT	1	594	701	854	1,087	1,187	1,318	1,464	1,458
	ADMIN STUDENT SPT	1	3,270	3,321	3,742	4,628	5,172	5,270	5,202	5,525
TOTAL METHOD 1A			10,311	11,709	12,647	16,183	17,504	17,762	19,006	19,053

TABLE 18A(CONTINUED--PAGE SIX)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF DENTAL STUDENTS/HSC STUDENTS (METHOD 1) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DENTAL MATERIALS (cont)	COMPUTER	1	3,680	9,977	10,246	12,051	13,271	13,206	15,369	45,371
	BLDG DEPRECIATION	1	4,930	9,199	8,907	8,523	8,491	8,577	8,354	25,615
	ADMIN SQ FT	1	800	1,761	2,078	2,180	2,372	2,660	2,916	8,904
	EDUC SQ FT	1	867	1,910	2,254	2,364	2,572	2,885	3,162	9,656
	ADMIN STUDENT SPT	1	4,744	9,048	9,872	10,063	11,203	11,532	11,231	36,580
TOTAL METHOD 1B			15,054	31,898	33,359	35,184	37,911	38,863	41,034	126,128
DENTAL HYGIENE	COMPUTER	1	39,619	57,555	6,104	81,300	89,870	88,532	126,933	122,208
	BLDG DEPRECIATION	1	53,068	53,068	5,307	57,502	57,502	57,502	68,996	68,996
	ADMIN SQ FT	1	8,612	10,163	1,238	14,712	16,067	17,837	24,088	23,984
	EDUC SQ FT	1	9,339	11,021	1,343	15,954	17,424	19,343	26,121	26,009
	ADMIN STUDENT SPT	1	51,394	52,194	5,882	67,891	75,870	77,304	92,756	98,530
TOTAL METHOD 1A			162,032	184,002	19,874	237,359	256,733	260,517	338,894	339,726
	COMPUTER	1	21,350	32,927	30,226	41,577	39,150	40,281	34,581	32,408
	BLDG DEPRECIATION	1	28,597	30,360	26,277	29,407	25,049	26,163	18,797	18,297
	ADMIN SQ FT	1	4,641	5,814	6,132	7,524	6,999	8,115	6,562	6,360
	EDUC SQ FT	1	5,032	6,305	6,650	8,159	7,590	8,801	7,116	6,897
	ADMIN STUDENT SPT	1	27,695	29,860	29,125	34,719	33,051	35,173	25,270	26,129
TOTAL METHOD 1B			87,314	105,266	98,410	121,385	111,840	118,532	92,327	90,091

TABLE 18B

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF O.U.D.S. FTE/HSC FTE (METHOD 2) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
PEDODONTICS	COMPUTER	2	118,320	48,702	49,387	46,063	53,934	58,875	77,227	79,611
	BLDG DEPRECIATION	2	53,067	22,433	22,433	18,426	18,426	19,864	21,512	21,512
	ADMIN SQ FT	2	8,611	4,296	5,235	4,714	5,148	6,161	7,510	7,477
	EDUC SQ FT	2	9,338	4,659	5,677	5,112	5,583	6,681	8,144	8,109
	ADMIN STUDENT SPT	2	51,394	22,063	24,864	21,756	24,312	26,705	30,922	30,720
TOTAL METHOD 2A			240,733	102,155	107,597	96,073	107,406	118,289	145,317	147,431
	COMPUTER	2	63,759	31,956	33,336	47,941	45,979	63,560	73,479	69,217
	BLDG DEPRECIATION	2	28,596	14,719	15,142	19,178	15,709	21,445	20,467	18,703
	ADMIN SQ FT	2	4,640	2,819	3,533	4,906	4,389	6,652	7,145	6,501
	EDUC SQ FT	2	5,032	3,057	3,832	5,320	4,760	7,213	7,748	7,050
	ADMIN STUDENT SPT	2	27,694	14,477	16,783	22,643	20,726	28,830	29,421	26,709
TOTAL METHOD 2B			129,723	67,030	72,629	99,990	91,564	127,701	138,263	128,183
ORTHODONTICS	COMPUTER	2	39,036	39,220	43,280	60,274	70,587	71,464	96,064	99,028
	BLDG DEPRECIATION	2	19,659	19,659	19,659	24,111	24,111	24,111	26,758	26,758
	ADMIN SQ FT	2	3,190	3,765	4,587	6,168	6,737	7,479	9,341	9,301
	EDUC SQ FT	2	3,459	4,082	4,975	6,689	7,306	8,110	10,130	10,087
	ADMIN STUDENT SPT	2	19,039	19,335	21,789	28,467	31,813	32,415	35,973	38,213
TOTAL METHOD 2A			84,384	86,163	94,292	125,713	140,556	143,581	178,269	183,389
	COMPUTER	2	13,706	30,283	35,297	30,895	28,587	50,848	53,984	51,160
	BLDG DEPRECIATION	2	6,902	15,179	16,033	12,359	9,765	17,156	15,037	13,824
	ADMIN SQ FT	2	1,120	2,907	3,741	3,162	2,728	5,321	5,249	4,805
	EDUC SQ FT	2	1,214	3,152	4,057	3,429	2,958	5,770	5,693	5,211
	ADMIN STUDENT SPT	2	6,684	14,929	17,770	14,592	12,884	23,064	20,216	19,741
TOTAL METHOD 2B			29,628	66,453	76,901	64,438	56,924	102,161	100,181	94,743
PERIODONTICS	COMPUTER	2	45,143	45,355	50,050	64,848	75,943	76,886	105,011	108,252
	BLDG DEPRECIATION	2	22,734	22,734	22,734	25,941	25,941	25,941	29,251	29,251
	ADMIN SQ FT	2	3,689	4,354	5,305	6,637	7,248	8,046	10,212	10,167
	EDUC SQ FT	2	4,000	4,721	5,753	7,197	7,860	8,726	11,074	11,026
	ADMIN STUDENT SPT	2	22,017	22,360	25,198	30,628	34,227	34,874	39,324	41,772
TOTAL METHOD 2A			97,586	99,526	109,043	135,252	151,222	154,476	194,873	200,470

TABLE 18B (CONTINUED—PAGE TWO)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF O.U.D.S. FTE/HSC FTE (METHOD 2) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
PERIODONTICS (cont)	COMPUTER	2	28,389	30,283	58,829	63,922	44,745	69,916	98,971	90,283
	BLDG DEPRECIATION	2	14,298	15,179	26,722	25,570	15,284	23,589	27,568	24,395
	ADMIN SQ FT	2	2,320	2,907	6,236	6,542	4,270	7,317	9,624	8,480
	EDUC SQ FT	2	2,516	3,152	6,762	7,094	4,631	7,935	10,437	9,196
	ADMIN STUDENT SPT	2	13,847	14,929	29,618	30,190	20,166	31,713	37,062	34,838
TOTAL METHOD 2B			61,373	66,453	128,169	133,321	89,098	104,471	183,666	167,195
ORAL DIAGNOSIS	COMPUTER	2	48,137	48,363	53,369	51,290	60,066	60,812	117,019	120,631
	BLDG DEPRECIATION	2	24,242	24,242	24,242	20,517	20,517	20,517	32,596	32,596
	ADMIN SQ FT	2	3,933	4,642	5,657	5,249	5,733	6,364	11,379	11,330
	EDUC SQ FT	2	4,266	5,034	6,135	5,692	6,217	6,901	12,340	12,287
	ADMIN STUDENT SPT	2	23,477	23,843	26,869	24,224	27,071	27,583	43,821	46,548
TOTAL METHOD 2A			104,057	106,127	116,274	106,975	119,606	122,180	217,157	223,393
	COMPUTER	2	39,160	36,707	40,200	50,072	52,203	78,819	92,973	78,246
	BLDG DEPRECIATION	2	19,721	18,399	18,260	20,030	17,831	26,591	25,898	21,143
	ADMIN SQ FT	2	3,200	3,523	4,261	5,124	4,982	8,248	9,041	7,349
	EDUC SQ FT	2	3,470	3,821	4,621	5,557	5,403	8,944	9,804	7,970
	ADMIN STUDENT SPT	2	19,099	18,096	20,239	23,649	23,527	35,749	34,816	30,193
TOTAL METHOD 2B			84,653	80,549	87,582	104,435	103,948	158,349	172,534	144,902
ORAL PATHOLOGY	COMPUTER	2	20,236	20,332	22,436	18,294	21,425	21,691	24,251	24,999
	BLDG DEPRECIATION	2	10,191	10,191	10,191	7,318	7,318	7,318	6,755	6,755
	ADMIN SQ FT	2	1,653	1,951	2,378	1,872	2,044	2,270	2,358	2,348
	EDUC SQ FT	2	1,793	2,116	2,579	2,030	2,217	2,461	2,557	2,546
	ADMIN STUDENT SPT	2	9,870	10,023	11,295	8,640	9,656	9,838	9,081	9,646
TOTAL METHOD 2A			43,745	44,615	48,881	38,156	42,662	43,580	45,004	46,296
	COMPUTER	2	19,580	18,353	29,414	31,961	37,287	38,136	44,987	45,141
	BLDG DEPRECIATION	2	9,860	9,199	13,361	12,785	12,737	12,867	12,531	12,198
	ADMIN SQ FT	2	1,600	1,761	3,118	3,271	3,558	3,991	4,374	4,240
	EDUC SQ FT	2	1,735	1,910	3,381	3,547	3,859	4,328	4,744	4,598
	ADMIN STUDENT SPT	2	9,549	9,048	14,809	15,095	16,805	17,298	16,846	17,419
TOTAL METHOD 2B			42,326	40,274	64,084	66,660	74,248	76,620	83,484	83,597

TABLE 18B(CONTINUED--PAGE THREE)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF O.U.D.S. FTE/HSC FTE (METHOD 2) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DENT SERV ADMIN	COMPUTER	2	45,143	43,355	50,050	97,141	60,066	60,812	52,270	53,883
	BLDG DEPRECIATION	2	22,734	22,734	22,734	20,517	20,517	20,517	14,560	14,560
	ADMIN SQ FT	2	3,689	4,354	5,305	2,804	5,733	6,364	5,083	5,061
	EDUC SQ FT	2	4,000	4,721	5,753	3,040	6,217	6,901	5,512	5,488
	ADMIN STUDENT SPT	2	22,017	22,360	25,198	24,224	27,071	27,583	19,574	20,792
TOTAL METHOD 2A			97,586	99,526	109,043	147,729	119,606	122,180	96,999	99,785
	COMPUTER	2	54,825	53,226	60,790	108,958	67,118	54,661	104,970	75,236
	BLDG DEPRECIATION	2	27,610	26,679	27,613	23,013	22,926	18,442	29,239	20,329
	ADMIN SQ FT	2	4,480	5,109	6,444	3,145	6,406	5,720	10,208	7,066
	EDUC SQ FT	2	4,858	5,540	6,988	3,410	6,947	6,203	11,070	7,663
	ADMIN STUDENT SPT	2	26,739	26,240	30,605	27,171	30,249	24,793	39,309	29,032
TOTAL METHOD 2B			118,515	116,797	132,442	165,700	133,648	109,823	194,797	139,329
ORAL SURGERY	COMPUTER	2	25,864	25,986	28,676	25,645	30,033	30,406	48,973	50,485
	BLDG DEPRECIATION	2	13,025	13,025	13,025	10,258	10,258	10,258	13,641	13,641
	ADMIN SQ FT	2	2,113	2,494	3,039	2,624	2,866	3,182	4,762	4,741
	EDUC SQ FT	2	2,292	2,705	3,296	2,846	3,108	3,450	5,164	5,142
	ADMIN STUDENT SPT	2	12,615	12,811	14,437	12,112	13,535	13,791	18,339	19,481
TOTAL METHOD 2A			55,991	57,023	62,475	53,487	59,803	61,090	90,882	93,492
	COMPUTER	2	14,685	23,860	35,297	37,288	32,316	20,339	23,993	37,618
	BLDG DEPRECIATION	2	7,395	11,959	16,033	14,916	11,038	6,862	6,683	10,165
	ADMIN SQ FT	2	1,200	2,290	3,741	3,816	3,084	2,128	2,333	3,533
	EDUC SQ FT	2	1,301	2,483	4,057	4,138	3,344	2,308	2,530	3,831
	ADMIN STUDENT SPT	2	7,162	11,763	17,770	17,611	14,564	9,225	8,984	14,516
TOTAL METHOD 2B			31,745	52,357	76,901	77,770	64,349	40,864	44,525	69,664
FIXED PROSTHODONTICS	COMPUTER	2	66,577	66,891	73,814	87,226	102,151	103,420	153,094	140,776
	BLDG DEPRECIATION	2	33,529	33,529	33,529	34,893	34,893	34,893	38,039	38,039
	ADMIN SQ FT	2	5,440	6,421	7,824	8,927	9,749	10,823	13,280	13,222
	EDUC SQ FT	2	5,900	6,963	8,485	9,681	10,573	11,737	14,401	14,339
	ADMIN STUDENT SPT	2	32,472	32,977	37,162	41,197	46,039	46,909	54,680	54,322
TOTAL METHOD 2A			143,920	146,782	160,817	181,926	203,407	207,784	273,495	260,700

TABLE 18B (CONTINUED--PAGE FOUR)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF O.U.D.S. FTE/HSC FTE (METHOD 2) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
FIXED PROSTHODONTICS (cont)	COMPUTER	2	50,909	47,720	58,829	73,510	78,304	83,899	107,591	94,798
	BLDG DEPRECIATION	2	25,638	23,919	26,722	29,406	26,747	28,307	26,733	25,615
	ADMIN SQ FT	2	4,160	4,580	6,236	7,523	7,473	8,780	9,333	8,904
	EDUC SQ FT	2	4,511	4,967	6,762	8,158	8,104	9,522	10,121	9,656
	ADMIN STUDENT SPT	2	24,829	23,526	29,618	34,719	35,291	38,055	38,428	36,580
TOTAL METHOD 2B			110,050	104,715	128,169	153,319	155,922	168,565	192,207	175,555
OPERATIVE DENTISTRY	COMPUTER	2	51,609	51,852	57,219	64,685	75,752	76,693	96,064	99,028
	BLDG DEPRECIATION	2	25,991	25,991	25,991	25,876	25,876	25,876	26,758	26,758
	ADMIN SQ FT	2	4,217	4,977	6,065	6,620	7,230	8,026	9,341	9,301
	EDUC SQ FT	2	4,573	5,397	6,577	7,179	7,840	8,704	10,130	10,087
	ADMIN STUDENT SPT	2	25,171	25,563	28,807	30,550	34,141	34,786	35,973	38,213
TOTAL METHOD 2A			111,564	113,783	124,662	134,912	150,841	154,087	178,269	183,389
	COMPUTER	2	65,594	55,979	59,810	75,641	95,705	102,968	109,469	108,341
	BLDG DEPRECIATION	2	33,034	28,059	27,167	30,258	32,691	34,740	30,492	29,275
	ADMIN SQ FT	2	5,360	5,373	6,340	7,741	9,134	10,776	10,645	10,176
	EDUC SQ FT	2	5,813	5,827	6,875	8,395	9,905	11,686	11,544	11,035
	ADMIN STUDENT SPT	2	31,992	27,597	30,111	35,725	43,134	46,704	40,993	41,806
TOTAL METHOD 2B			141,795	122,838	130,306	157,763	190,572	206,875	203,145	200,634
REMOVABLE PROSTHODONTICS	COMPUTER	2	50,651	50,890	56,157	70,565	82,639	83,665	103,598	106,796
	BLDG DEPRECIATION	2	25,508	25,508	25,508	28,228	28,228	28,228	28,857	28,857
	ADMIN SQ FT	2	4,139	4,885	5,953	7,222	7,887	8,756	10,074	10,031
	EDUC SQ FT	2	4,488	5,297	6,455	7,831	8,553	9,495	10,925	10,878
	ADMIN STUDENT SPT	2	24,704	25,088	28,273	33,328	37,245	37,949	38,795	41,210
TOTAL METHOD 2A			109,493	111,671	122,348	147,176	164,554	168,095	192,251	197,773
	COMPUTER	2	43,077	41,296	58,829	63,922	74,575	83,899	106,470	93,293
	BLDG DEPRECIATION	2	21,694	20,699	26,722	25,570	25,474	28,304	29,657	25,209
	ADMIN SQ FT	2	3,520	3,964	6,236	6,542	7,117	8,780	10,353	8,762
	EDUC SQ FT	2	3,817	4,299	6,762	7,094	7,718	9,522	11,228	9,502
	ADMIN STUDENT SPT	2	21,009	20,359	29,618	30,190	33,611	38,055	39,870	35,999
TOTAL METHOD 2B			93,118	90,618	128,169	133,321	148,498	168,565	197,580	172,768

TABLE 18B (CONTINUED--PAGE FIVE)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF O.U.D.S. FTE/HSC FTE (METHOD 2) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
ENDODONTICS	COMPUTER	2	22,631	22,738	25,091	24,175	28,311	28,663	37,904	39,077
	BLDG DEPRECIATION	2	11,397	11,397	11,397	9,670	9,670	9,670	10,559	10,559
	ADMIN SQ FT	2	1,849	2,182	2,659	2,474	2,702	2,999	3,686	3,670
	EDUC SQ FT	2	2,005	2,367	2,884	2,683	2,930	3,253	3,997	3,980
	ADMIN STUDENT SPT	2	11,038	11,209	12,632	11,418	12,759	13,001	14,195	15,079
TOTAL METHOD 2A			48,922	49,895	54,666	50,421	56,374	57,588	70,346	72,366
	COMPUTER	2	10,769	9,176	18,629	29,830	26,101	29,237	31,491	34,608
	BLDG DEPRECIATION	2	5,423	4,599	8,462	11,923	8,915	9,864	8,771	9,351
	ADMIN SQ FT	2	880	880	1,974	3,053	2,491	3,059	3,062	3,250
	EDUC SQ FT	2	954	955	2,141	3,310	2,701	3,318	3,320	3,525
	ADMIN STUDENT SPT	2	5,252	4,524	9,379	14,089	11,763	13,261	11,792	13,354
TOTAL METHOD 2B			23,279	20,137	40,587	62,216	51,974	58,742	58,439	64,091
OCCLUSION	COMPUTER	2	23,709	23,820	26,286	31,852	37,302	37,765	44,971	46,359
	BLDG DEPRECIATION	2	11,940	11,940	11,940	12,742	12,742	12,742	12,526	12,526
	ADMIN SQ FT	2	1,937	2,286	2,786	3,259	3,560	3,952	4,373	4,354
	EDUC SQ FT	2	2,101	2,479	3,021	3,535	3,860	4,286	4,742	4,722
	ADMIN STUDENT SPT	2	11,563	11,743	13,234	15,044	16,812	17,129	16,840	17,889
TOTAL METHOD 2A			51,252	52,271	57,269	66,433	74,277	75,876	83,454	85,851
	COMPUTER	2	13,706	20,189	25,492	28,765	28,587	27,966	38,988	33,104
	BLDG DEPRECIATION	2	6,902	10,119	11,579	11,506	9,765	9,435	10,860	8,945
	ADMIN SQ FT	2	1,120	1,938	2,702	2,944	2,728	2,926	3,791	3,109
	EDUC SQ FT	2	1,214	2,101	2,930	3,192	2,958	3,174	4,111	3,371
	ADMIN STUDENT SPT	2	6,684	9,953	12,834	13,585	12,884	12,685	14,600	12,774
TOTAL METHOD 2B			29,628	44,302	55,540	55,994	56,924	56,188	72,353	61,304
DENTAL MATERIALS	COMPUTER	2	6,705	6,737	7,434	9,800	11,477	11,620	13,891	14,320
	BLDG DEPRECIATION	2	3,377	3,377	3,377	3,920	3,920	3,920	3,869	3,869
	ADMIN SQ FT	2	548	646	788	1,003	1,095	1,216	1,350	1,345
	EDUC SQ FT	2	594	701	854	1,087	1,187	1,318	1,464	1,458
	ADMIN STUDENT SPT	2	3,270	3,321	3,742	4,628	5,172	5,270	5,202	5,525
TOTAL METHOD 2A			14,495	14,783	16,197	20,441	22,854	23,346	25,779	26,519

TABLE 18B (CONTINUED--PAGE SIX)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE NUMBER OF O.U.D.S. FTE/HSC FTE (METHOD 2) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DENTAL MATERIALS (cont)	COMPUTER	2	9,790	18,353	19,609	21,307	24,858	25,424	29,991	94,798
	BLDG DEPRECIATION	2	4,930	9,199	8,907	8,523	8,491	8,577	8,354	25,615
	ADMIN SQ FT	2	800	1,761	2,078	2,180	2,372	2,660	2,916	8,904
	EDUC SQ FT	2	867	1,910	2,254	2,364	2,572	2,885	3,162	9,656
	ADMIN STUDENT SPT	2	4,774	9,048	9,872	10,063	11,203	11,532	11,231	36,580
TOTAL METHOD 2B			21,163	40,274	42,723	44,440	49,499	51,080	55,656	175,555
DENTAL HYGIENE	COMPUTER	2	105,375	105,871	11,683	143,745	168,339	170,429	247,694	255,339
	BLDG DEPRECIATION	2	53,068	53,068	5,307	57,502	57,502	57,502	68,996	68,996
	ADMIN SQ FT	2	8,612	10,163	1,238	14,712	16,067	17,837	24,088	23,984
	EDUC SQ FT	2	9,339	11,021	1,343	15,954	17,424	19,343	26,121	26,009
	ADMIN STUDENT SPT	2	51,394	52,194	5,882	67,891	75,870	77,304	92,756	98,530
TOTAL METHOD 2A			227,787	232,317	25,453	299,803	335,202	342,415	459,655	472,857
	COMPUTER	2	56,783	60,568	57,849	73,511	73,333	77,544	67,481	67,713
	BLDG DEPRECIATION	2	28,597	30,360	26,277	29,407	25,049	26,163	18,797	18,297
	ADMIN SQ FT	2	4,641	5,814	6,132	7,524	6,999	8,115	6,562	6,360
	ADMIN STUDENT SPT	2	27,695	29,860	29,125	34,719	33,051	35,173	25,270	26,129
TOTAL METHOD 2B			122,748	132,907	126,033	153,319	146,023	155,795	125,227	125,396

TABLE 18C

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/HSC BUDGETS (METHOD 3) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
PEDODONTICS	COMPUTER	3	61,186	29,681	30,534	27,759	32,873	35,112	42,823	43,755
	BLDG DEPRECIATION	3	53,067	22,433	22,433	18,426	18,426	19,864	21,512	21,512
	ADMIN SQ FT	3	8,611	4,296	5,235	4,714	5,148	6,161	7,510	7,477
	EDUC SQ FT	3	5,338	4,659	5,677	5,112	5,583	6,681	8,144	8,109
	ADMIN STUDENT SPT	3	51,394	22,063	22,864	21,756	24,312	26,705	30,922	30,720
TOTAL METHOD 3A			183,599	83,133	88,744	77,769	86,345	94,525	110,912	111,575
	COMPUTER	3	32,971	19,475	20,610	28,891	28,024	37,906	40,744	38,042
	BLDG DEPRECIATION	3	28,596	14,719	15,142	19,178	15,709	21,445	20,467	18,703
	ADMIN SQ FT	3	4,640	2,819	3,533	4,906	4,389	6,652	7,145	6,501
	EDUC SQ FT	3	5,032	3,057	3,832	5,320	4,760	7,213	7,748	7,050
	ADMIN STUDENT SPT	3	27,694	14,477	16,783	22,643	20,726	28,830	29,421	26,709
TOTAL METHOD 3B			98,935	54,549	59,903	80,940	73,609	102,047	105,528	97,008
ORTHODONTICS	COMPUTER	3	22,666	26,011	26,758	36,323	43,023	42,620	53,267	54,427
	BLDG DEPRECIATION	3	19,659	19,659	19,659	24,111	24,111	24,111	26,758	26,758
	ADMIN SQ FT	3	3,190	3,765	4,587	6,168	6,737	7,479	9,341	9,301
	EDUC SQ FT	3	3,459	4,082	4,975	6,689	7,306	8,110	10,130	10,087
	ADMIN STUDENT SPT	3	19,039	19,335	21,789	28,467	31,813	32,415	35,973	38,213
TOTAL METHOD 3A			68,015	72,853	77,770	101,762	112,992	114,737	135,473	138,788
	COMPUTER	3	7,958	20,084	21,823	18,618	17,424	30,325	29,934	28,118
	BLDG DEPRECIATION	3	6,902	15,179	16,033	12,359	9,765	17,156	15,037	13,824
	ADMIN SQ FT	3	1,120	2,907	3,741	3,162	2,728	5,321	5,249	4,805
	EDUC SQ FT	3	1,214	3,152	4,057	3,429	2,958	5,770	5,693	5,211
	ADMIN STUDENT SPT	3	6,684	14,929	17,770	14,592	12,884	23,064	20,216	19,741
TOTAL METHOD 3B			23,881	56,254	63,427	52,161	45,760	81,637	76,131	71,701
PERIODONTICS	COMPUTER	3	26,212	30,080	30,944	39,080	46,287	45,854	58,228	59,496
	BLDG DEPRECIATION	3	22,734	22,734	22,734	25,941	25,941	25,941	29,251	29,251
	ADMIN SQ FT	3	3,689	4,354	5,305	6,637	7,248	8,046	10,212	10,167
	EDUC SQ FT	3	4,000	4,721	5,753	7,197	7,860	8,726	11,074	11,026
	ADMIN STUDENT SPT	3	22,017	22,360	25,198	30,628	34,227	34,874	39,324	41,772
TOTAL METHOD 3A			78,655	84,251	89,936	109,484	121,566	123,443	148,091	151,714

TABLE 18C (CONTINUED--PAGE TWO)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/HSC BUDGETS (METHOD 3) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
PERIODONTICS (cont)	COMPUTER	3	16,485	20,084	36,372	38,521	27,272	41,697	54,880	49,621
	BLDG DEPRECIATION	3	14,298	15,179	26,722	25,570	15,284	23,589	27,568	24,395
	ADMIN SQ FT	3	2,320	2,907	6,236	6,542	4,270	7,317	9,624	8,480
	EDUC SQ FT	3	2,516	3,152	6,762	7,094	4,631	7,935	10,437	9,196
	ADMIN STUDENT SPT	3	13,847	14,929	29,618	30,190	20,166	31,713	37,062	34,838
TOTAL METHOD 3B			49,467	56,254	105,712	107,920	71,625	112,252	139,574	126,532
ORAL DIAGNOSIS	COMPUTER	3	27,950	32,075	32,996	30,909	36,610	36,267	64,887	66,300
	BLDG DEPRECIATION	3	24,242	24,242	24,242	20,517	20,517	20,517	32,596	32,596
	ADMIN SQ FT	3	3,933	4,642	5,657	5,249	5,733	6,364	11,379	11,330
	EDUC SQ FT	3	4,266	5,034	6,135	5,692	6,217	6,901	12,340	12,287
	ADMIN STUDENT SPT	3	23,477	23,843	26,869	24,224	27,071	27,583	43,821	46,548
TOTAL METHOD 3A			83,871	89,838	95,900	86,594	96,150	97,635	165,025	169,063
	COMPUTER	3	22,738	24,344	24,854	30,175	31,817	47,004	51,554	43,005
	BLDG DEPRECIATION	3	19,721	18,399	18,260	20,030	17,831	26,591	25,898	21,143
	ADMIN SQ FT	3	3,200	3,523	4,261	5,124	4,982	8,248	9,041	7,349
	EDUC SQ FT	3	3,470	3,821	4,621	5,557	5,403	8,944	9,804	7,970
	ADMIN STUDENT SPT	3	19,099	18,096	20,239	23,649	23,527	35,749	34,816	30,193
TOTAL METHOD 3B			68,231	68,186	72,236	84,537	83,563	126,538	131,115	109,661
ORAL PATHOLOGY	COMPUTER	3	11,750	13,484	13,871	11,025	13,058	12,936	13,447	13,740
	BLDG DEPRECIATION	3	10,191	10,191	10,191	7,318	7,318	7,318	6,755	6,755
	ADMIN SQ FT	3	1,653	1,951	2,378	1,872	2,044	2,270	2,358	2,348
	EDUC SQ FT	3	1,793	2,116	2,579	2,030	2,217	2,461	2,557	2,546
	ADMIN STUDENT SPT	3	9,870	10,023	11,295	8,640	9,656	9,838	9,081	9,646
TOTAL METHOD 3A			35,259	37,767	40,316	30,887	34,295	34,825	34,200	35,037
	COMPUTER	3	11,369	12,172	18,186	19,261	22,727	22,743	24,945	24,810
	BLDG DEPRECIATION	3	9,860	9,199	13,361	12,785	12,737	12,867	12,531	12,198
	ADMIN SQ FT	3	1,600	1,761	3,118	3,271	3,558	3,991	4,374	4,240
	EDUC SQ FT	3	1,735	1,910	3,381	3,547	3,859	4,328	4,744	4,598
	ADMIN STUDENT SPT	3	9,549	9,048	14,809	15,095	16,805	17,298	16,846	17,419
TOTAL METHOD 3B			34,115	34,093	52,855	53,960	59,687	61,228	63,442	63,266

TABLE 18C (CONTINUED--PAGE THREE)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/HSC BUDGETS (METHOD 3)
AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DENT SERV ADMIN	COMPUTER	3	26,212	30,080	30,944	109,437	36,610	36,267	28,983	29,615
	BLDG DEPRECIATION	3	22,734	22,734	22,734	20,517	20,517	20,517	14,560	14,560
	ADMIN SQ FT	3	3,689	4,354	5,305	2,804	5,733	6,364	5,083	5,061
	EDUC SQ FT	3	4,000	4,721	5,753	3,040	6,217	6,901	5,512	5,488
	ADMIN STUDENT SPT	3	22,017	22,360	25,198	24,224	27,071	27,583	19,574	20,792
TOTAL METHOD 3A			78,653	84,251	89,926	160,024	96,150	97,635	73,713	75,517
	COMPUTER	3	31,834	35,300	37,584	122,749	40,908	32,599	58,206	41,351
	BLDG DEPRECIATION	3	27,610	26,679	27,613	23,013	22,926	18,442	29,239	20,329
	ADMIN SQ FT	3	4,480	5,109	6,444	3,145	6,406	5,720	10,208	7,066
	EDUC SQ FT	3	4,858	5,540	6,988	3,410	6,947	6,203	11,070	7,663
	ADMIN STUDENT SPT	3	26,739	26,240	30,605	27,171	30,249	24,793	39,309	29,032
TOTAL METHOD 3B			95,524	98,870	109,236	179,491	107,438	87,760	148,033	105,443
ORAL SURGERY	COMPUTER	3	15,018	17,234	17,729	15,454	18,305	18,133	27,156	27,747
	BLDG DEPRECIATION	3	13,025	13,025	13,025	10,258	10,258	10,258	13,641	13,641
	ADMIN SQ FT	3	2,113	2,494	3,039	2,624	2,866	3,182	4,762	4,741
	EDUC SQ FT	3	2,292	2,705	3,296	2,846	3,108	3,450	5,164	5,142
	ADMIN STUDENT SPT	3	12,615	12,811	14,437	12,112	13,535	13,791	18,339	19,481
TOTAL METHOD 3A			45,065	48,271	51,528	43,297	48,075	48,817	69,064	70,754
	COMPUTER	3	8,527	15,824	21,828	22,471	19,696	12,130	13,304	20,675
	BLDG DEPRECIATION	3	7,395	11,959	16,033	14,916	11,038	6,862	6,683	10,165
	ADMIN SQ FT	3	1,200	2,290	3,741	3,816	3,084	2,128	2,333	3,533
	EDUC SQ FT	3	1,301	2,483	4,057	4,138	3,344	2,308	2,530	3,831
	ADMIN STUDENT SPT	3	7,162	11,763	17,770	17,611	14,567	9,225	8,984	14,516
TOTAL METHOD 3B			25,586	44,321	63,427	62,953	51,729	32,655	33,836	52,721
FIXED PROSTHODONTICS	COMPUTER	3	38,658	44,362	45,636	52,566	62,261	61,678	84,743	77,372
	BLDG DEPRECIATION	3	33,529	33,529	33,529	34,893	34,893	34,893	38,039	38,039
	ADMIN SQ FT	3	5,440	6,421	7,824	8,927	9,749	10,823	13,280	13,222
	EDUC SQ FT	3	5,900	6,963	8,485	9,681	10,573	11,737	14,401	14,339
	ADMIN STUDENT SPT	3	32,472	32,977	37,162	41,197	46,039	46,909	54,680	54,322
TOTAL METHOD 3A			116,001	124,254	132,639	147,267	163,517	166,042	205,145	197,297

TABLE 1-8C (CONTINUED--PAGE FOUR)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/HSC BUDGETS (METHOD 3) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
FIXED PROSTHODONTICS (cont)	COMPUTER	3	29,560	31,648	36,372	44,300	47,726	50,036	59,556	52,102
	BLDG DEPRECIATION	3	25,638	23,919	26,722	29,406	26,747	28,307	26,733	25,615
	ADMIN SQ FT	3	4,160	4,580	6,236	7,523	7,473	8,780	9,333	8,904
	EDUC SQ FT	3	4,511	4,967	6,762	8,158	8,104	9,522	10,121	9,656
	ADMIN STUDENT SPT	3	24,829	23,526	29,618	34,719	35,291	38,055	38,428	36,580
TOTAL METHOD 3B			88,701	88,642	105,712	124,108	125,345	134,702	144,172	132,859
OPERATIVE DENTISTRY	COMPUTER	3	29,967	34,388	35,376	38,981	46,171	45,738	53,267	54,427
	BLDG DEPRECIATION	3	25,991	25,991	25,991	25,876	25,876	25,876	26,758	26,758
	ADMIN SQ FT	3	4,217	4,977	6,065	6,620	7,230	8,026	9,241	9,301
	EDUC SQ FT	3	4,573	5,397	6,577	7,179	7,840	8,704	10,130	10,087
	ADMIN STUDENT SPT	3	25,171	25,563	28,807	30,550	34,141	34,786	35,973	38,213
TOTAL METHOD 3A			89,921	96,319	102,819	109,208	121,260	123,122	135,473	138,788
	COMPUTER	3	38,087	37,125	36,978	45,584	58,332	61,408	60,700	59,545
	BLDG DEPRECIATION	3	33,034	28,059	27,167	30,258	32,691	34,740	30,492	29,275
	ADMIN SQ FT	3	5,360	5,273	6,340	7,741	9,134	10,776	10,645	10,176
	EDUC SQ FT	3	5,813	5,827	6,875	8,395	9,905	11,686	11,544	11,035
	ADMIN STUDENT SPT	3	31,992	27,597	30,111	35,725	43,134	46,704	40,993	41,806
TOTAL METHOD 3B			114,288	103,985	107,474	127,706	153,199	165,316	154,377	151,839
REMOVABLE PROSTHODONTICS	COMPUTER	3	29,411	32,750	34,720	42,525	50,368	49,896	57,445	58,696
	BLDG DEPRECIATION	3	25,508	25,508	25,508	28,228	28,228	28,228	28,857	28,857
	ADMIN SQ FT	3	4,139	4,885	5,953	7,222	7,887	8,756	10,074	10,031
	EDUC SQ FT	3	4,488	5,297	6,455	7,831	8,553	9,495	10,925	10,878
	ADMIN STUDENT SPT	3	24,704	25,088	28,273	33,328	37,245	37,949	38,795	41,210
TOTAL METHOD 3A			88,252	94,531	100,911	119,136	132,283	134,326	146,098	149,693
	COMPUTER	3	25,012	27,387	36,372	38,521	45,454	50,036	59,037	51,275
	BLDG DEPRECIATION	3	21,694	20,699	26,722	25,570	25,474	28,307	29,657	25,209
	ADMIN SQ FT	3	3,520	3,964	6,236	6,542	7,117	8,780	10,353	8,762
	EDUC SQ FT	3	3,817	4,299	6,762	7,094	7,718	9,522	11,228	9,502
	ADMIN STUDENT SPT	3	21,009	20,359	29,618	30,190	33,611	38,055	39,870	35,999
TOTAL METHOD 3B			75,054	76,710	105,712	107,920	119,376	134,702	150,148	130,750

TABLE 18C (CONTINUED--PAGE FIVE)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/HSC BUDGETS (METHOD 3) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
ENDODONTICS	COMPUTER	3	13,141	15,080	15,513	14,568	17,255	17,094	21,019	21,477
	BLDG DEPRECIATION	3	11,397	11,397	11,397	9,670	9,670	9,670	10,559	10,559
	ADMIN SQ FT	3	1,849	2,182	2,659	2,474	2,702	2,999	3,686	3,670
	EDUC SQ FT	3	2,005	2,367	2,884	2,683	2,930	3,253	3,997	3,980
	ADMIN STUDENT SPT	3	11,038	11,209	12,632	11,418	12,759	13,001	14,195	15,079
TOTAL METHOD 3A			39,432	42,237	45,087	40,815	45,319	46,019	53,458	54,766
	COMPUTER	3	6,253	6,086	11,517	17,976	15,908	17,437	17,461	19,021
	BLDG DEPRECIATION	3	5,423	4,599	8,462	11,933	8,915	9,864	8,771	9,351
	ADMIN SQ FT	3	880	880	1,974	3,053	2,491	3,059	3,062	3,250
	EDUC SQ FT	3	954	955	2,141	3,310	2,701	3,318	3,320	3,525
	ADMIN STUDENT SPT	3	5,252	4,524	9,379	14,089	11,763	13,261	11,792	13,354
TOTAL METHOD 3B			18,763	17,046	33,475	50,362	41,781	46,941	44,409	48,504
OCCLUSION	COMPUTER	3	13,766	15,798	16,252	19,195	22,735	22,522	24,936	25,479
	BLDG DEPRECIATION	3	11,940	11,940	11,940	12,742	12,742	12,742	12,526	12,526
	ADMIN SQ FT	3	1,937	2,286	2,786	3,259	3,560	3,952	4,373	4,354
	EDUC SQ FT	3	2,101	2,479	3,021	3,535	3,860	4,286	4,742	4,722
	ADMIN STUDENT SPT	3	11,563	11,743	13,234	15,044	16,812	17,129	16,840	17,889
TOTAL METHOD 3A			41,309	44,248	47,234	53,776	59,711	60,633	63,420	64,971
	COMPUTER	3	7,958	13,389	15,761	17,334	17,424	16,678	21,619	18,194
	BLDG DEPRECIATION	3	6,902	10,119	11,579	11,506	9,765	9,435	10,860	8,945
	ADMIN SQ FT	3	1,120	1,938	2,702	2,944	2,728	2,926	3,791	3,109
	EDUC SQ FT	3	1,214	2,101	2,930	3,192	2,958	3,174	4,111	3,371
	ADMIN STUDENT SPT	3	6,684	9,953	12,834	13,585	12,884	12,685	14,600	12,774
TOTAL METHOD 3B			23,881	37,502	45,808	48,564	45,760	44,900	54,983	46,395
DENTAL MATERIALS	COMPUTER	3	3,893	4,468	4,596	5,906	6,995	6,930	7,702	7,807
	BLDG DEPRECIATION	3	3,377	3,377	3,377	3,920	3,920	3,920	3,869	3,869
	ADMIN SQ FT	3	548	646	788	1,003	1,095	1,216	1,350	1,345
	EDUC SQ FT	3	594	701	854	1,087	1,187	1,318	1,464	1,458
	ADMIN STUDENT SPT	3	3,270	3,321	3,742	4,628	5,172	5,270	5,202	5,525
TOTAL METHOD 3A			11,683	12,514	13,359	16,546	18,372	18,656	19,590	20,069

TABLE 18C(CONTINUED--PAGE SIX)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/HSC BUDGETS (METHOD 3) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DENTAL MATERIALS (cont)	COMPUTER	3	5,684	12,172	12,124	12,840	15,151	15,162	16,630	52,102
	BLDG DEPRECIATION	3	4,930	9,199	8,907	8,523	8,491	8,577	8,354	25,615
	ADMIN SQ FT	3	800	1,761	2,078	2,180	2,372	2,660	2,916	8,904
	EDUC SQ FT	3	867	1,910	2,254	2,364	2,572	2,885	3,162	9,656
	ADMIN STUDENT SPT	3	4,774	9,048	9,872	10,063	11,203	11,532	11,231	36,580
TOTAL METHOD 3B			17,057	34,093	35,237	35,937	39,792	40,818	42,295	132,859
DENTAL HYGIENE	COMPUTER	3	61,186	70,214	7,223	86,626	102,603	101,642	137,347	140,338
	BLDG DEPRECIATION	3	53,068	53,068	5,307	57,502	57,502	57,502	68,996	68,996
	ADMIN SQ FT	3	8,612	10,163	1,238	14,712	16,067	17,837	24,088	23,984
	EDUC SQ FT	3	9,339	11,021	1,343	15,954	17,424	19,343	26,121	26,009
	ADMIN STUDENT SPT	3	51,394	52,194	5,882	67,891	75,870	77,304	92,756	98,530
TOTAL METHOD 3A			183,599	196,661	20,993	242,685	269,466	273,627	349,308	357,855
	COMPUTER	3	32,971	40,169	35,766	44,300	44,696	46,246	37,418	37,216
	BLDG DEPRECIATION	3	28,597	30,360	26,277	29,407	25,049	26,163	18,797	18,297
	ADMIN SQ FT	3	4,641	5,814	6,132	7,525	6,999	8,115	6,562	6,360
	EDUC SQ FT	3	5,032	6,305	6,650	8,159	7,590	8,801	7,116	6,897
	ADMIN STUDENT SPT	3	27,695	29,860	29,125	34,719	33,051	35,173	25,270	26,129
TOTAL METHOD 3B			98,936	112,508	103,950	124,108	117,386	124,497	95,164	94,899

TABLE 18D

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/TOTAL COLLEGE BUDGETS (METHOD 4) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
PEDODONTICS	COMPUTER	4	163,572	69,695	77,961	65,559	77,660	95,405	113,012	103,616
	BLDG DEPRECIATION	4	53,067	22,433	22,433	18,426	18,426	19,864	21,512	21,512
	ADMIN SQ FT	4	8,611	4,296	5,235	4,714	5,148	6,161	7,510	7,477
	EDUC SQ FT	4	9,338	4,659	5,677	5,112	5,583	6,681	8,144	8,109
	ADMIN STUDENT SPT	4	51,394	22,063	24,864	21,756	24,312	26,705	30,922	30,720
TOTAL METHOD 4A			285,985	123,148	136,172	115,569	131,133	154,819	181,101	171,436
	COMPUTER	4	88,144	45,731	52,625	68,232	66,206	102,997	107,527	90,088
	BLDG DEPRECIATION	4	28,596	14,719	15,142	19,178	15,709	21,445	20,467	18,703
	ADMIN SQ FT	4	4,640	2,819	3,533	4,906	4,389	6,652	7,145	6,501
	EDUC SQ FT	4	5,032	3,057	3,832	5,320	4,760	7,213	7,748	7,050
	ADMIN STUDENT SPT	4	27,694	14,477	16,783	22,643	20,726	28,830	29,421	26,709
TOTAL METHOD 4B			154,108	80,805	91,917	120,282	111,791	167,138	172,310	149,054
ORTHODONTICS	COMPUTER	4	60,596	61,076	68,321	85,765	101,640	115,805	140,596	128,889
	BLDG DEPRECIATION	4	19,659	19,659	19,659	24,111	24,111	24,111	26,758	26,758
	ADMIN SQ FT	4	3,190	3,765	4,587	6,168	6,737	7,479	9,341	9,301
	EDUC SQ FT	4	3,459	4,082	4,975	6,689	7,306	8,110	10,130	10,087
	ADMIN STUDENT SPT	4	19,039	19,335	21,789	28,467	31,813	32,415	35,973	38,213
TOTAL METHOD 4A			105,944	107,920	119,333	151,224	171,609	187,922	222,782	213,249
	COMPUTER	4	21,276	47,160	55,720	43,972	41,163	82,397	78,999	66,587
	BLDG DEPRECIATION	4	6,902	15,179	16,033	12,358	9,765	17,156	15,037	13,824
	ADMIN SQ FT	4	1,120	2,907	3,741	3,162	2,728	5,321	5,249	4,805
	EDUC SQ FT	4	1,214	3,152	4,057	3,429	2,958	5,770	5,693	5,211
	ADMIN STUDENT SPT	4	6,684	14,929	17,770	14,592	12,884	23,064	20,216	19,741
TOTAL METHOD 4B			37,198	83,330	97,324	77,514	69,500	133,710	125,196	110,170
PERIODONTICS	COMPUTER	4	70,075	70,631	79,009	92,294	109,353	124,592	153,669	140,893
	BLDG DEPRECIATION	4	22,734	22,734	22,734	25,941	25,941	25,941	29,251	29,251
	ADMIN SQ FT	4	3,689	4,354	5,305	6,637	7,248	8,046	10,212	10,167
	EDUC SQ FT	4	4,000	4,721	5,753	7,197	7,860	8,726	11,074	11,026
	ADMIN STUDENT SPT	4	22,017	22,360	25,198	30,628	34,227	34,874	39,324	41,772
TOTAL METHOD 4A			122,518	124,803	138,002	162,699	184,631	202,181	243,531	233,110

TABLE 18D(CONTINUED--PAGE TWO)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/TOTAL COLLEGE BUDGETS (METHOD 4) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
PERIODONTICS (cont)	COMPUTER	4	44,072	47,160	92,868	90,976	64,429	113,297	144,832	117,507
	BLDG DEPRECIATION	4	14,298	15,197	26,722	25,570	15,284	23,589	27,568	24,395
	ADMIN SQ FT	4	2,320	2,907	6,236	6,542	4,270	7,317	9,624	8,480
	EDUC SQ FT	4	2,516	3,152	6,762	7,094	4,631	7,935	10,437	9,196
	ADMIN STUDENT SPT	4	13,847	14,929	29,618	30,190	20,166	31,713	37,062	34,838
TOTAL METHOD 4B			77,054	83,330	162,208	160,375	108,783	183,851	229,525	194,418
ORAL DIAGNOSIS	COMPUTER	4	74,722	75,315	84,249	72,999	86,490	98,544	171,241	157,004
	BLDG DEPRECIATION	4	24,242	24,242	24,242	20,517	20,517	20,517	32,596	32,596
	ADMIN SQ FT	4	3,933	4,642	5,657	5,249	5,733	6,364	11,379	11,330
	EDUC SQ FT	4	4,266	5,034	6,135	5,692	6,217	6,901	12,340	12,287
	ADMIN STUDENT SPT	4	23,477	23,843	26,869	24,224	27,071	27,583	43,821	46,548
TOTAL METHOD 4A			130,643	133,079	147,154	128,684	146,030	159,912	271,379	259,767
	COMPUTER	4	60,789	57,164	63,459	71,265	75,167	127,716	136,054	101,839
	BLDG DEPRECIATION	4	19,721	18,399	18,260	20,030	17,831	26,591	25,898	21,143
	ADMIN SQ FT	4	3,200	3,523	4,261	5,124	4,982	8,248	9,041	7,349
	EDUC SQ FT	4	3,470	3,821	4,621	5,557	5,403	8,944	9,804	7,970
	ADMIN STUDENT SPT	4	19,099	18,096	20,239	23,649	23,527	35,749	34,816	30,193
TOTAL METHOD 4B			106,282	101,006	110,842	125,627	126,913	207,251	215,615	168,495
ORAL PATHOLOGY	COMPUTER	4	31,413	31,662	35,418	26,037	30,850	35,149	35,488	32,538
	BLDG DEPRECIATION	4	10,191	10,191	10,191	7,318	7,318	7,318	6,755	6,755
	ADMIN SQ FT	4	1,653	1,951	2,378	1,872	2,044	2,270	2,358	2,348
	EDUC SQ FT	4	1,793	2,116	2,579	2,030	2,217	2,461	2,557	2,546
	ADMIN STUDENT SPT	4	9,870	10,023	11,295	8,640	9,656	9,838	9,081	9,646
TOTAL METHOD 4A			54,922	55,946	61,863	45,899	52,087	57,038	56,241	53,834
	COMPUTER	4	30,394	28,582	46,434	45,488	53,691	61,798	65,832	58,753
	BLDG DEPRECIATION	4	9,860	9,199	13,361	12,785	12,737	12,867	12,531	12,198
	ADMIN SQ FT	4	1,600	1,761	3,118	3,271	3,558	3,991	4,374	4,240
	EDUC SQ FT	4	1,735	1,910	3,381	3,547	3,859	4,328	4,744	4,598
	ADMIN STUDENT SPT	4	9,549	9,048	14,089	15,095	16,805	17,298	16,846	17,419
TOTAL METHOD 4B			53,140	50,503	81,103	80,187	90,652	100,283	104,330	97,208

TABLE 18D (CONTINUED--PAGE THREE)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/TOTAL COLLEGE BUDGETS (METHOD 4) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DENT SERV ADMIN	COMPUTER	4	70,075	70,631	79,009	93,053	86,490	98,544	76,490	70,130
	BLDG DEPRECIATION	4	22,734	22,734	22,734	20,517	20,517	20,517	14,560	14,560
	ADMIN SQ FT	4	3,689	4,354	5,305	2,804	5,733	6,364	5,083	5,061
	EDUC SQ FT	4	4,000	4,721	5,753	3,040	6,217	6,901	5,512	5,488
	ADMIN STUDENT SPT	4	22,017	22,360	25,198	24,224	27,071	27,583	19,574	20,792
TOTAL METHOD 4A			122,518	124,803	138,002	143,641	146,030	159,912	121,220	116,033
	COMPUTER	4	85,104	82,888	95,963	104,374	96,644	88,577	153,609	97,922
	BLDG DEPRECIATION	4	27,610	26,679	27,613	23,013	22,926	18,442	29,239	20,329
	ADMIN SQ FT	4	4,480	5,109	6,444	3,145	6,406	5,720	10,208	7,066
	EDUC SQ FT	4	4,858	5,540	6,988	3,410	6,947	6,203	11,070	7,663
	ADMIN STUDENT SPT	4	26,739	26,240	30,605	27,171	30,249	24,793	39,309	29,032
TOTAL METHOD 4B			148,794	146,459	167,615	161,115	163,174	143,738	243,436	162,015
ORAL SURGERY	COMPUTER	4	40,149	40,468	45,268	36,499	43,245	49,272	71,666	65,707
	BLDG DEPRECIATION	4	13,025	13,025	13,025	10,258	10,258	10,258	13,641	13,641
	ADMIN SQ FT	4	2,113	2,494	3,039	2,624	2,866	3,182	4,762	4,741
	EDUC SQ FT	4	2,292	2,705	3,296	2,846	3,108	3,450	5,164	5,142
	ADMIN STUDENT SPT	4	12,615	12,811	14,437	12,112	13,535	13,791	18,339	19,481
TOTAL METHOD 4A			70,196	71,505	79,067	64,341	73,015	79,955	113,575	108,715
	COMPUTER	4	22,795	37,156	55,720	53,069	46,532	32,959	35,110	48,961
	BLDG DEPRECIATION	4	7,395	11,959	16,033	14,916	11,038	6,862	6,683	10,165
	ADMIN SQ FT	4	1,200	2,290	3,741	3,816	3,084	2,128	2,333	3,533
	EDUC SQ FT	4	1,301	2,483	4,057	4,138	3,344	2,308	2,530	3,831
	ADMIN STUDENT SPT	4	7,162	11,763	17,770	17,611	14,564	9,225	8,984	14,516
TOTAL METHOD 4B			39,855	65,654	97,324	93,552	78,565	53,484	55,642	81,007
FIXED PROSTHODONTICS	COMPUTER	4	103,348	104,168	116,524	124,145	147,089	167,588	223,644	183,224
	BLDG DEPRECIATION	4	33,529	33,529	33,529	34,983	34,893	34,893	38,039	38,039
	ADMIN SQ FT	4	5,440	6,421	7,824	8,927	9,749	10,823	13,280	13,222
	EDUC SQ FT	4	5,900	6,963	8,485	9,681	10,573	11,737	14,401	11,339
	ADMIN STUDENT SPT	4	32,472	32,977	37,162	41,197	46,039	46,909	54,680	54,322
TOTAL METHOD 4A			180,690	184,059	203,526	218,844	248,344	271,952	344,045	303,148

TABLE 18D (CONTINUED--PAGE FOUR)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/TOTAL COLLEGE BUDGETS (METHOD 4) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
FIXED PROSTHODONTICS (cont)	COMPUTER	4	79,625	74,313	92,868	104,623	112,752	135,956	157,172	123,382
	BLDG DEPRECIATION	4	25,638	23,919	26,722	29,406	26,747	28,307	26,733	25,615
	ADMIN SQ FT	4	4,160	4,580	6,236	7,523	7,473	8,780	9,333	8,904
	EDUC SQ FT	4	4,511	4,967	6,762	8,158	8,104	9,522	10,121	9,656
	ADMIN STUDENT SPT	4	24,829	23,526	29,618	34,719	35,291	38,055	38,428	36,580
TOTAL METHOD 4B			138,166	131,308	162,208	184,432	109,270	220,622	241,788	204,139
OPERATIVE DENTISTRY	COMPUTER	4	80,113	80,749	90,326	92,062	109,077	124,278	140,576	128,889
	BLDG DEPRECIATION	4	25,991	25,991	25,991	25,876	25,876	25,876	26,758	26,758
	ADMIN SQ FT	4	4,217	4,977	6,065	6,620	7,230	8,026	9,341	9,301
	EDUC SQ FT	4	4,573	5,397	6,577	7,179	7,840	8,704	10,130	10,087
	ADMIN STUDENT SPT	4	25,171	25,563	28,807	30,550	34,141	34,176	35,973	38,213
TOTAL METHOD 4A			140,067	142,679	157,769	162,289	184,165	201,672	222,782	213,249
	COMPUTER	4	101,822	87,175	94,415	107,656	137,808	166,855	160,193	141,008
	BLDG DEPRECIATION	4	33,034	28,059	27,167	30,258	32,691	34,740	30,492	29,275
	ADMIN SQ FT	4	5,360	5,373	6,340	7,741	9,134	10,776	10,645	10,176
	EDUC SQ FT	4	5,813	5,827	6,875	8,395	9,905	11,686	11,544	11,035
	ADMIN STUDENT SPT	4	31,992	27,597	30,111	35,725	43,134	46,704	40,993	41,806
TOTAL METHOD 4B			178,022	154,035	164,911	189,778	232,674	270,763	253,869	233,301
REMOVABLE PROSTHODONTICS	COMPUTER	4	78,626	79,250	88,650	100,432	118,993	135,576	151,602	138,997
	BLDG DEPRECIATION	4	25,508	25,508	25,508	28,228	28,228	28,228	28,857	28,857
	ADMIN SQ FT	4	4,139	4,885	5,953	7,922	7,887	8,756	10,074	10,031
	EDUC SQ FT	4	4,488	5,297	6,455	7,831	8,553	9,495	10,925	10,878
	ADMIN STUDENT SPT	4	24,704	25,088	28,273	33,328	37,245	37,949	38,795	41,210
TOTAL METHOD 4A			137,468	140,031	154,841	177,042	200,908	220,006	240,255	229,974
	COMPUTER	4	66,867	64,309	92,868	90,976	107,383	135,956	155,804	121,424
	BLDG DEPRECIATION	4	21,694	20,699	26,722	25,570	25,474	28,307	29,657	25,209
	ADMIN SQ FT	4	3,520	3,964	6,236	6,542	7,117	8,780	10,353	8,762
	EDUC SQ FT	4	3,817	4,299	6,762	7,094	7,718	9,522	11,228	9,502
	ADMIN STUDENT SPT	4	21,009	20,359	29,618	30,190	33,611	38,055	39,870	35,999
TOTAL METHOD 4B			116,910	113,632	162,208	160,375	181,305	220,622	246,914	200,898

TABLE 18D (CONTINUED--PAGE FIVE)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/TOTAL COLLEGE BUDGETS (METHOD 4) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
ENDODONTICS	COMPUTER	4	35,130	35,409	39,609	34,407	40,766	46,447	55,472	50,860
	BLDG DEPRECIATION	4	11,397	11,397	11,397	9,670	9,670	9,670	10,559	10,559
	ADMIN SQ FT	4	1,849	2,182	2,659	2,474	2,702	2,999	3,686	3,670
	EDUC SQ FT	4	2,005	2,367	2,884	2,683	2,930	3,253	3,997	3,980
	ADMIN STUDENT SPT	4	11,038	11,209	12,632	11,418	12,759	13,001	14,195	15,079
TOTAL METHOD 4A			61,421	62,566	69,184	60,653	68,829	75,372	87,911	84,149
	COMPUTER	4	16,717	14,291	29,408	42,555	37,584	47,378	46,082	45,044
	BLDG DEPRECIATION	4	5,423	4,599	8,462	11,933	8,915	9,864	8,771	9,351
	ADMIN SQ FT	4	880	880	1,974	3,053	2,491	3,059	3,062	3,250
	EDUC SQ FT	4	954	955	2,141	3,310	2,701	3,318	3,320	3,525
	ADMIN STUDENT SPT	4	5,252	4,524	9,379	14,089	11,763	13,261	11,792	13,354
TOTAL METHOD 4B			29,227	25,251	51,365	74,841	63,456	76,883	73,030	74,526
OCCLUSION	COMPUTER	4	36,803	37,095	41,495	45,333	53,712	61,197	65,809	60,337
	BLDG DEPRECIATION	4	11,940	11,940	11,940	12,742	12,742	12,742	12,526	12,526
	ADMIN SQ FT	4	1,937	2,286	2,786	3,259	3,560	3,952	4,373	4,354
	EDUC SQ FT	4	2,101	2,479	3,021	3,535	3,860	4,286	4,742	4,722
	ADMIN STUDENT SPT	4	11,563	11,743	13,234	15,044	16,812	17,129	16,840	17,889
TOTAL METHOD 4A			64,346	65,546	72,478	79,915	90,687	99,308	104,292	99,829
	COMPUTER	4	21,276	31,440	40,242	40,939	41,163	45,318	57,054	43,085
	BLDG DEPRECIATION	4	6,902	10,119	11,579	11,506	9,765	9,435	10,860	8,945
	ADMIN SQ FT	4	1,120	1,938	2,702	2,944	2,728	2,926	3,791	3,109
	EDUC SQ FT	4	1,214	2,101	2,930	3,192	2,958	3,194	4,111	3,371
	ADMIN STUDENT SPT	4	6,684	9,953	12,834	13,585	12,884	12,685	14,600	12,774
TOTAL METHOD 4B			37,198	55,553	70,290	72,168	69,500	73,540	90,419	71,286
DENTAL MATERIALS	COMPUTER	4	10,409	10,491	11,736	13,948	16,526	18,830	20,328	18,638
	BLDG DEPRECIATION	4	3,377	3,377	3,377	3,920	3,920	3,920	3,869	3,869
	ADMIN SQ FT	4	548	646	788	1,003	1,095	1,216	1,350	1,345
	EDUC SQ FT	4	594	701	854	1,087	1,187	1,318	1,464	1,458
	ADMIN STUDENT SPT	4	3,270	3,321	3,742	4,628	5,172	5,270	5,202	5,525
TOTAL METHOD 4A			18,199	18,538	20,499	24,589	27,903	30,556	32,216	30,837

TABLE 18D (CONTINUED--PAGE SIX)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE O.U.D.S. BUDGET/TOTAL COLLEGE BUDGETS (METHOD 4) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DENTAL MATERIALS (cont)	COMPUTER	4	15,197	28,582	30,956	30,325	35,794	41,198	43,888	123,382
	BLDG DEPRECIATION	4	4,930	9,199	8,907	8,523	8,491	8,577	8,354	25,615
	ADMIN SQ FT	4	800	1,761	2,078	2,180	2,372	2,660	2,916	8,904
	EDUC SQ FT	4	867	1,910	2,254	2,364	2,572	2,885	3,162	9,656
	ADMIN STUDENT SPT	4	4,774	9,048	9,872	10,063	11,203	11,532	11,231	36,580
TOTAL METHOD 4B			26,570	50,503	54,069	53,458	60,434	66,855	69,553	204,139
DENTAL HYGIENE	COMPUTER	4	163,572	164,870	18,443	204,583	242,394	276,174	362,466	332,330
	BLDG DEPRECIATION	4	53,068	53,068	5,307	57,502	57,502	57,502	68,996	68,996
	ADMIN SQ FT	4	8,612	10,163	1,238	14,712	16,067	17,837	24,088	23,984
	EDUC SQ FT	4	9,339	11,021	1,343	15,954	17,424	19,343	26,121	26,009
	ADMIN STUDENT SPT	4	51,394	52,194	5,882	67,891	75,870	77,304	92,956	98,530
TOTAL METHOD 4A			285,985	291,317	32,213	360,642	409,257	448,160	574,428	549,848
	COMPUTER	4	88,144	94,321	91,320	104,623	105,593	125,656	98,749	88,130
	BLDG DEPRECIATION	4	28,597	30,360	26,277	29,407	25,049	26,163	18,797	18,297
	ADMIN SQ FT	4	4,641	5,814	6,132	7,524	6,999	8,115	6,562	6,360
	EDUC SQ FT	4	5,032	6,305	6,650	8,159	7,590	8,801	7,116	6,897
	ADMIN STUDENT SPT	4	27,695	29,860	29,125	34,719	33,051	35,173	25,270	26,129
TOTAL METHOD 4B			154,108	166,660	159,504	184,432	178,283	203,908	156,495	145,813

TABLE 18E

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE OUDS FTE+NO. DENTAL STUDENTS/HSC FTE+HSC STUDENTS (METHOD 5) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
PEDODONTICS	COMPUTER	5	47,908	27,081	28,628	28,522	31,794	33,945	44,237	42,984
	BLDG DEPRECIATION	5	53,067	22,433	22,433	18,426	18,426	19,864	21,512	21,512
	ADMIN SQ FT	5	8,611	4,296	5,235	4,714	5,148	6,161	7,510	7,477
	EDUC SQ FT	5	9,338	4,659	5,677	5,112	5,583	6,681	8,144	8,109
	ADMIN STUDENT SPT	5	51,394	22,063	24,864	21,756	24,312	26,705	30,922	30,720
TOTAL METHOD 5A			170,320	80,533	86,838	78,532	85,266	93,358	112,326	110,803
	COMPUTER	5	41,224	24,215	25,774	28,893	30,313	34,819	43,451	40,935
	BLDG DEPRECIATION	5	28,596	14,719	15,142	19,178	15,709	21,445	20,467	18,703
	ADMIN SQ FT	5	4,640	2,819	3,533	4,906	4,389	6,652	7,145	6,501
	EDUC SQ FT	5	5,032	3,057	3,832	5,320	4,760	7,213	7,748	7,050
	ADMIN STUDENT SPT	5	27,694	14,447	16,783	22,643	20,726	28,830	29,421	26,709
TOTAL METHOD 5B			107,189	59,288	65,067	80,941	75,898	98,959	108,235	99,900
ORTHODONTICS	COMPUTER	5	17,521	23,498	25,088	37,321	41,611	41,203	55,026	53,468
	BLDG DEPRECIATION	5	19,659	19,659	19,659	24,111	24,111	24,111	26,758	26,658
	ADMIN SQ FT	5	3,190	3,765	4,587	6,168	6,737	7,479	9,341	9,301
	EDUC SQ FT	5	3,459	4,082	4,975	6,689	7,306	8,110	10,130	10,087
	ADMIN STUDENT SPT	5	19,039	19,335	21,789	28,467	31,813	32,415	35,973	38,213
TOTAL METHOD 5A			62,869	70,341	76,100	102,760	111,580	113,320	137,232	137,829
	COMPUTER	5	14,081	21,850	23,669	31,524	33,789	37,358	46,203	44,033
	BLDG DEPRECIATION	5	6,902	15,179	16,033	12,359	9,765	17,156	15,037	13,824
	ADMIN SQ FT	5	1,120	2,907	3,741	3,162	2,728	5,321	5,249	4,805
	EDUC SQ FT	5	1,214	3,152	4,057	3,429	2,958	5,770	5,693	5,211
	ADMIN STUDENT SPT	5	6,684	14,929	17,770	14,592	12,884	23,064	20,216	19,741
TOTAL METHOD 5B			30,004	58,020	65,272	65,066	62,126	88,670	92,400	87,616
PERIODONTICS	COMPUTER	5	20,262	27,174	29,013	40,153	44,768	44,330	60,151	58,448
	BLDG DEPRECIATION	5	22,734	22,734	22,734	25,941	25,941	25,941	29,251	29,251
	ADMIN SQ FT	5	3,689	4,453	5,305	6,637	7,248	8,046	10,212	10,167
	EDUC SQ FT	5	4,000	4,721	5,753	7,197	7,860	8,726	11,074	11,026
	ADMIN STUDENT SPT	5	22,017	22,360	25,198	30,628	34,227	34,874	39,324	41,772
TOTAL METHOD 5A			72,704	81,345	88,005	110,558	120,046	121,919	150,013	150,666

TABLE 18E (CONTINUED--PAGE TWO)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE OUDS FTE+NO. DENTAL STUDENTS/HSC FTE+HSC STUDENTS (METHOD 5) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
PERIODONTICS (cont)	COMPUTER	5	17,987	24,394	30,574	39,971	38,958	43,030	58,885	54,906
	BLDG DEPRECIATION	5	14,298	15,179	26,722	25,570	15,284	23,589	27,568	24,395
	ADMIN SQ FT	5	2,320	2,907	6,236	6,542	4,270	7,317	9,624	4,480
	EDUC SQ FT	5	2,516	3,152	6,762	7,094	4,631	7,935	10,437	9,196
	ADMIN STUDENT SPT	5	13,847	14,929	29,618	30,190	20,166	31,713	37,062	34,838
TOTAL METHOD 5B			50,969	60,564	99,914	109,370	83,311	113,585	143,579	131,818
ORAL DIAGNOSIS	COMPUTER	5	21,605	28,976	30,937	31,759	35,408	35,062	67,029	65,131
	BLDG DEPRECIATION	5	24,242	24,242	24,242	20,517	20,517	20,517	32,596	32,596
	ADMIN SQ FT	5	3,933	4,642	5,657	5,249	5,733	6,364	11,379	11,330
	EDUC SQ FT	5	4,266	5,034	6,135	5,692	6,217	6,901	12,340	12,287
	ADMIN STUDENT SPT	5	23,477	23,843	26,869	24,224	27,071	27,583	43,821	46,548
TOTAL METHOD 5A			77,526	86,739	93,841	87,443	94,948	96,429	167,167	167,894
	COMPUTER	5	20,386	26,827	28,595	31,518	33,944	38,419	61,988	56,777
	BLDG DEPRECIATION	5	19,721	18,399	18,260	20,030	17,831	26,591	25,898	21,143
	ADMIN SQ FT	5	3,200	3,523	4,261	5,124	4,982	8,248	9,041	7,349
	EDUC SQ FT	5	3,470	3,821	4,621	5,557	5,403	8,944	9,804	7,970
	ADMIN STUDENT SPT	5	19,099	18,096	20,239	23,649	23,527	35,749	34,816	30,193
TOTAL METHOD 5B			65,879	70,669	75,977	85,880	85,689	117,954	141,549	123,434
ORAL PATHOLOGY	COMPUTER	5	9,082	12,181	13,005	11,328	12,629	12,506	13,891	13,498
	BLDG DEPRECIATION	5	10,191	10,191	10,191	7,318	7,318	7,318	6,755	6,755
	ADMIN SQ FT	5	1,653	1,951	2,378	1,872	2,044	2,270	2,358	2,348
	EDUC SQ FT	5	1,793	2,116	2,579	2,030	2,217	2,461	2,557	2,546
	ADMIN STUDENT SPT	5	9,870	10,023	11,295	8,640	9,656	9,838	9,081	9,646
TOTAL METHOD 5A			32,591	36,465	39,450	31,190	33,867	34,395	34,644	34,795
	COMPUTER	5	8,993	11,816	14,246	14,025	15,583	15,573	18,239	17,468
	BLDG DEPRECIATION	5	9,860	9,199	13,361	12,785	12,737	12,867	12,531	12,198
	ADMIN SQ FT	5	1,600	1,761	3,118	3,271	3,558	3,991	4,374	4,240
	EDUC SQ FT	5	1,735	1,910	3,381	3,547	3,859	4,328	4,744	4,598
	ADMIN STUDENT SPT	5	9,549	9,048	14,809	15,095	16,805	17,298	16,846	17,419
TOTAL METHOD 5B			31,740	33,737	48,916	48,724	52,544	54,057	56,736	55,923

TABLE 18E (CONTINUED--PAGE THREE)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE OUDS FTE+NO. DENTAL STUDENTS/HSC FTE+HSC STUDENTS (METHOD 5) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DENT SERV ADMIN	COMPUTER	5	20,262	27,174	29,013	60,149	35,408	35,062	29,940	29,093
	BLDG DEPRECIATION	5	22,734	22,734	22,734	20,517	20,517	20,517	14,560	14,560
	ADMIN SQ FT	5	3,689	4,354	5,305	2,804	5,733	6,364	5,083	5,061
	EDUC SQ FT	5	4,000	4,721	5,753	3,040	6,217	6,901	5,512	5,488
	ADMIN STUDENT SPT	5	22,017	22,360	25,198	24,224	27,071	27,583	19,574	20,792
TOTAL METHOD 5A			72,704	81,345	88,005	110,737	94,948	96,429	74,670	74,995
	COMPUTER	5	21,576	28,626	30,922	61,380	36,722	33,915	40,990	33,301
	BLDG DEPRECIATION	5	27,610	26,679	27,613	3,013	22,926	18,442	29,239	20,329
	ADMIN SQ FT	5	4,480	5,109	6,444	3,145	6,406	5,720	10,208	7,066
	EDUC SQ FT	5	4,858	5,540	6,988	3,410	6,947	6,203	11,070	7,663
	ADMIN STUDENT SPT	5	26,739	26,240	30,605	27,171	30,249	24,793	39,309	29,032
TOTAL METHOD 5B			85,266	92,197	102,574	118,122	103,252	89,075	130,817	97,394
ORAL SURGERY	COMPUTER	5	11,609	15,569	16,623	15,879	17,704	17,531	28,052	27,258
	BLDG DEPRECIATION	5	13,025	13,025	13,025	10,258	10,258	10,258	13,641	13,641
	ADMIN SQ FT	5	2,113	2,494	3,039	2,624	2,866	3,182	4,762	4,741
	EDUC SQ FT	5	2,292	2,705	3,296	2,846	3,108	3,450	5,164	5,142
	ADMIN STUDENT SPT	5	12,615	12,811	14,437	12,112	13,535	13,791	18,339	19,481
TOTAL METHOD 5A			41,655	46,606	50,422	43,721	47,474	48,214	69,961	70,265
	COMPUTER	5	10,091	15,177	17,800	18,177	18,129	15,653	22,815	24,722
	BLDG DEPRECIATION	5	7,395	11,959	16,033	14,916	11,038	6,862	6,683	10,165
	ADMIN SQ FT	5	1,200	2,290	3,741	3,816	3,084	2,128	2,333	3,533
	EDUC SQ FT	5	1,301	2,483	4,057	4,138	3,344	2,308	2,530	3,831
	ADMIN STUDENT SPT	5	7,162	11,763	17,770	17,661	14,564	9,225	8,984	14,516
TOTAL METHOD 5B			27,150	43,674	59,404	58,659	50,162	36,178	43,346	56,768
FIXED PROSTHODONTICS	COMPUTER	5	29,882	40,007	42,788	54,010	60,217	59,628	87,693	76,008
	BLDG DEPRECIATION	5	33,529	33,529	33,529	34,893	34,893	34,893	38,039	38,039
	ADMIN SQ FT	5	5,440	6,421	7,824	8,927	9,749	10,823	13,280	13,222
	EDUC SQ FT	5	5,900	6,963	8,485	9,681	10,573	11,737	14,401	14,339
	ADMIN STUDENT SPT	5	32,472	32,977	37,162	41,197	46,039	46,909	54,680	54,322
TOTAL METHOD 5A			107,225	119,969	129,791	148,710	161,473	163,992	208,095	195,933

TABLE 18E (CONTINUED--PAGE FOUR)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE OUDS FTE+NO. DENTAL STUDENTS/HSC FTE+HSC STUDENTS (METHOD 5) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
FIXED PROSTHODONTICS (cont)	COMPUTER	5	27,755	36,541	40,124	51,303	55,776	55,987	76,369	66,946
	BLDG DEPRECIATION	5	25,638	23,919	26,722	29,406	26,747	28,307	26,733	25,615
	ADMIN SQ FT	5	4,160	4,580	6,236	7,523	7,473	8,780	9,333	8,904
	EDUC SQ FT	5	4,511	4,967	6,762	8,158	8,104	9,522	10,121	9,656
	ADMIN STUDENT SPT	5	24,829	23,526	29,618	34,719	35,291	38,055	38,428	36,580
TOTAL METHOD 5B			86,895	93,536	109,464	131,112	133,395	140,653	160,985	147,703
OPERATIVE DENTISTRY	COMPUTER	5	23,164	31,067	33,169	40,052	44,655	44,218	55,026	53,468
	BLDG DEPRECIATION	5	25,991	25,991	25,991	25,876	25,876	25,876	26,758	26,758
	ADMIN SQ FT	5	4,217	4,977	6,065	6,620	7,230	8,026	9,341	9,301
	EDUC SQ FT	5	4,573	5,397	6,577	7,179	7,840	8,704	10,130	10,087
	ADMIN STUDENT SPT	5	25,171	25,563	28,807	30,550	34,141	34,786	35,973	38,213
TOTAL METHOD 5A			83,118	92,997	100,611	110,279	119,744	121,612	137,232	137,829
	COMPUTER	5	25,063	31,828	33,629	32,214	48,371	49,119	57,837	55,303
	BLDG DEPRECIATION	5	33,034	28,059	27,167	30,258	32,691	34,740	30,492	29,275
	ADMIN SQ FT	5	5,360	5,373	6,340	7,741	9,134	10,776	10,645	10,176
	EDUC SQ FT	5	5,813	5,827	6,875	8,395	9,905	11,686	11,544	11,035
	ADMIN STUDENT SPT	5	31,992	27,597	30,111	35,725	43,134	46,704	30,993	41,806
TOTAL METHOD 5B			101,263	98,387	104,125	124,336	143,238	153,027	151,514	147,597
REMOVABLE PROSTHODONTICS	COMPUTER	5	22,734	30,490	32,553	43,693	48,715	48,238	59,342	57,661
	BLDG DEPRECIATION	5	25,508	25,508	25,508	28,228	28,228	28,228	28,857	28,857
	ADMIN SQ FT	5	4,139	4,885	5,953	7,222	7,887	8,756	10,074	10,031
	EDUC SQ FT	5	4,488	5,297	6,455	7,831	8,553	9,495	10,925	10,878
	ADMIN STUDENT SPT	5	24,704	25,088	28,273	33,328	37,245	37,949	38,795	41,210
TOTAL METHOD 5A			81,575	91,271	98,743	120,305	130,630	132,668	147,995	148,639
	COMPUTER	5	21,705	28,721	33,028	42,383	47,213	48,282	59,944	55,000
	BLDG DEPRECIATION	5	21,694	20,699	26,722	25,570	25,474	28,307	29,657	25,209
	ADMIN SQ FT	5	3,520	3,964	6,236	6,542	7,117	8,780	10,353	8,762
	EDUC SQ FT	5	3,817	4,299	6,762	7,094	7,718	9,522	11,228	9,502
	ADMIN STUDENT SPT	5	21,009	20,359	29,618	30,190	33,611	38,055	39,870	35,999
TOTAL METHOD 5B			71,747	78,043	102,368	111,781	121,136	132,948	151,054	134,475

TABLE 18E (CONTINUED—PAGE FIVE)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE OUDS FTE+NO. DENTAL STUDENTS/HSC FTE+HSC STUDENTS (METHOD 5) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
ENDODONTICS	COMPUTER	5	10,157	13,623	14,545	14,969	16,689	16,526	21,713	21,099
	BLDG DEPRECIATION	5	11,397	11,397	11,397	9,670	9,670	9,670	10,559	10,559
	ADMIN SQ FT	5	1,849	2,182	2,659	2,474	2,702	2,999	3,686	3,670
	EDUC SQ FT	5	2,005	2,367	2,884	2,683	2,930	3,253	3,997	3,980
	ADMIN STUDENT SPT	5	11,038	11,209	12,632	11,418	12,759	13,001	14,195	15,079
TOTAL METHOD 5A			36,448	40,780	44,119	41,215	44,752	45,451	54,152	54,388
	COMPUTER	5	8,547	11,122	13,396	16,085	16,278	16,633	20,368	20,218
	BLDG DEPRECIATION	5	5,423	4,599	8,462	11,933	8,915	9,864	8,771	9,351
	ADMIN SQ FT	5	880	880	1,974	3,053	2,491	3,059	3,062	3,250
	EDUC SQ FT	5	954	955	2,141	3,310	2,701	3,318	3,320	3,525
	ADMIN STUDENT SPT	5	5,252	4,524	9,379	14,089	11,763	13,261	11,792	13,354
TOTAL METHOD 5B			21,057	22,082	35,353	48,471	42,150	46,138	47,316	49,700
OCCLUSION	COMPUTER	5	10,641	14,272	15,237	19,723	21,989	21,774	25,760	25,030
	BLDG DEPRECIATION	5	11,940	11,940	11,940	12,742	12,742	12,742	12,526	12,526
	ADMIN SQ FT	5	1,937	2,286	2,786	3,259	3,560	3,952	4,373	4,354
	EDUC SQ FT	5	2,101	2,479	3,021	3,535	3,860	4,286	4,742	4,722
	ADMIN STUDENT SPT	5	11,563	11,743	13,234	15,044	16,812	17,129	16,840	17,889
TOTAL METHOD 5A			38,184	42,722	46,220	54,304	58,964	59,884	64,243	64,522
	COMPUTER	5	9,283	13,602	15,096	19,113	20,366	19,946	24,505	22,418
	BLDG DEPRECIATION	5	6,902	10,119	11,579	11,506	9,765	9,435	10,860	8,945
	ADMIN SQ FT	5	1,120	1,938	2,702	2,944	2,728	2,926	3,791	3,109
	EDUC SQ FT	5	1,214	2,101	2,930	3,192	2,958	3,174	4,111	3,371
	ADMIN STUDENT SPT	5	6,684	9,953	12,834	13,585	12,884	12,685	14,600	12,774
TOTAL METHOD 5B			25,205	37,715	45,143	50,343	48,703	48,168	57,869	50,618
DENTAL MATERIALS	COMPUTER	5	3,009	4,036	4,309	6,068	6,766	6,699	7,957	7,731
	BLDG DEPRECIATION	5	3,377	3,377	3,377	3,920	3,920	3,920	3,869	3,869
	ADMIN SQ FT	5	548	646	788	1,003	1,095	1,216	1,350	1,345
	EDUC SQ FT	5	594	701	854	1,087	1,187	1,318	1,464	1,458
	ADMIN STUDENT SPT	5	3,270	3,321	3,742	4,628	5,172	5,270	5,202	5,525
TOTAL METHOD 5A			10,799	12,083	13,072	16,709	18,143	18,426	19,844	19,931

TABLE 18E (CONTINUED--PAGE SIX)

SUMMARY OF DEPARTMENTAL INDIRECT COST ASSESSMENTS USING THE OUDS FTE+NO. DENTAL STUDENTS/HSC FTE+HSC STUDENTS (METHOD 5) AND ASSIGNED TO DEPARTMENTS BY DEPT HRS/TOTAL CURRICULUM HRS (METHOD A) OR DEPT FTE/OUDS FTE (METHOD B)

DEPARTMENT	COST	METHOD	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DENTAL MATERIALS (cont)	COMPUTER	5	3,428	6,179	6,474	8,339	9,257	9,274	11,332	23,593
	BLDG DEPRECIATION	5	4,930	9,199	8,907	8,523	8,491	8,577	8,354	25,615
	ADMIN SQ FT	5	800	1,761	2,078	2,180	2,372	2,660	2,916	8,904
	EDUC SQ FT	5	867	1,910	2,254	2,364	2,572	2,885	3,162	9,656
	ADMIN STUDENT SPT	5	4,774	9,048	9,872	10,063	11,203	11,532	11,231	36,580
TOTAL METHOD 5B			14,801	28,100	29,587	31,472	33,898	34,930	36,997	104,350
DENTAL HYGIENE	COMPUTER	5	47,296	63,432	6,772	89,006	99,235	98,263	141,882	137,862
	BLDG DEPRECIATION	5	53,086	53,068	5,307	57,502	57,502	57,502	68,996	68,996
	ADMIN SQ FT	5	8,612	10,163	1,238	14,712	16,067	17,837	24,088	23,984
	EDUC SQ FT	5	9,339	11,021	1,343	15,954	17,424	19,343	26,121	26,009
	ADMIN STUDENT SPT	5	51,394	52,194	5,882	67,891	75,870	77,304	92,756	98,530
TOTAL METHOD 5A			169,709	189,878	20,542	245,065	266,098	270,249	353,843	355,382
	COMPUTER	5	40,698	55,076	14,981	75,146	81,543	80,939	104,097	100,884
	BLDG DEPRECIATION	5	28,597	30,360	26,277	29,407	25,049	26,163	18,797	18,297
	ADMIN SQ FT	5	4,641	5,814	6,132	7,524	6,999	8,115	6,562	6,360
	EDUC SQ FT	5	5,032	6,305	6,650	8,159	7,590	8,801	7,116	6,897
	ADMIN STUDENT SPT	5	27,695	29,860	29,125	34,719	33,051	35,173	25,270	26,129
TOTAL METHOD 5B			106,663	127,416	83,165	154,954	154,233	159,190	161,843	158,567

TABLE 19

TOTAL COSTS FOR EACH DEPARTMENT BY FISCAL YEAR DETERMINED BY DIRECT COSTS PLUS INDIRECT COSTS. COSTS ASSIGNED TO EACH DEPARTMENT BY METHOD A AND METHOD B.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
PEDODONTICS									
	METHOD 1	437,175	298,371	346,941	360,072	376,986	473,514	523,190	519,883
	METHOD 2	515,876	322,743	370,524	380,082	402,126	501,806	560,841	561,392
A	METHOD 3	458,742	303,722	351,671	361,778	381,065	478,043	526,436	525,536
	METHOD 4	561,128	343,736	399,099	399,578	425,853	538,336	596,626	585,396
	METHOD 5	445,464	301,122	249,765	362,541	379,986	476,875	527,851	524,764
	METHOD 1	362,457	271,626	319,638	363,173	364,852	480,674	517,963	506,054
	METHOD 2	404,867	287,619	335,556	383,999	386,285	511,218	553,787	542,144
B	METHOD 3	374,079	275,138	322,830	364,949	368,330	485,564	521,053	510,969
	METHOD 4	429,252	301,393	354,844	404,290	406,512	550,654	587,835	563,015
	METHOD 5	382,333	279,877	327,994	364,951	370,619	483,477	523,759	513,862
ORTHODONTICS									
	METHOD 1	218,161	267,919	309,469	332,603	357,554	455,421	474,022	514,429
	METHOD 2	242,520	285,817	330,135	358,787	390,458	489,762	520,857	566,061
A	METHOD 3	226,151	272,608	313,614	334,836	362,893	460,918	478,061	521,460
	METHOD 4	264,080	307,674	355,177	384,298	421,510	534,103	565,370	595,921
	METHOD 5	221,005	270,096	311,944	335,834	361,481	459,501	479,820	520,501
	METHOD 1	179,211	252,388	295,890	284,091	293,500	423,907	416,450	450,741
	METHOD 2	187,764	266,208	312,745	297,513	306,826	448,342	442,769	477,416
B	METHOD 3	182,017	256,009	299,270	285,236	295,662	427,819	418,719	454,374
	METHOD 4	195,334	283,085	333,168	310,598	319,402	479,891	467,784	492,842
	METHOD 5	188,140	257,774	301,116	298,141	312,028	434,852	434,898	470,288

TABLE 19 (CONTINUED--PAGE TWO)
TOTAL COSTS FOR EACH DEPARTMENT BY FISCAL YEAR DETERMINED BY DIRECT COSTS PLUS INDIRECT COSTS.
COSTS ASSIGNED TO EACH DEPARTMENT BY METHOD A AND METHOD B.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
PERIODONTICS									
	METHOD 1	235,252	307,768	400,027	463,889	418,272	524,144	663,126	659,733
	METHOD 2	263,422	328,466	423,926	492,060	453,672	561,091	714,323	716,175
A	METHOD 3	244,492	313,191	404,820	466,292	424,016	530,059	667,541	667,419
	METHOD 4	288,355	353,742	452,885	519,507	487,081	608,797	762,981	748,815
	METHOD 5	238,541	310,285	402,888	467,366	422,497	528,535	669,463	666,371
	METHOD 1	209,493	281,573	414,961	462,360	370,692	513,489	654,863	635,827
	METHOD 2	227,210	295,393	443,052	490,129	391,549	547,087	703,116	682,900
B	METHOD 3	215,304	285,194	420,594	464,728	374,076	518,867	659,024	642,237
	METHOD 4	242,891	312,270	477,090	517,183	411,233	590,467	748,976	710,123
	METHOD 5	216,806	289,504	414,797	466,178	385,762	520,200	663,029	647,523
ORAL DIAGNOSIS									
	METHOD 1	324,614	357,141	385,603	397,901	425,829	522,507	689,185	676,240
	METHOD 2	354,652	379,213	411,087	420,191	453,828	551,730	746,236	739,135
A	METHOD 3	334,466	362,924	390,714	399,810	430,372	527,185	694,105	684,805
	METHOD 4	381,238	406,165	441,966	441,899	480,252	589,462	800,459	775,509
	METHOD 5	328,121	359,826	388,654	400,659	429,170	529,980	696,247	683,636
	METHOD 1	310,811	336,884	363,200	395,898	413,836	550,026	656,286	619,848
	METHOD 2	335,248	353,636	382,395	417,650	438,170	587,899	701,614	660,644
B	METHOD 3	318,826	341,273	367,049	397,753	417,785	556,088	660,195	625,403
	METHOD 4	356,876	374,092	405,655	438,843	461,135	636,801	744,695	684,237
	METHOD 5	316,474	343,755	370,790	399,096	419,912	547,504	670,629	639,176

TABLE 19(CONTINUED--PAGE THREE)

TOTAL COSTS FOR EACH DEPARTMENT BY FISCAL YEAR DETERMINED BY DIRECT COSTS PLUS INDIRECT COSTS.
COSTS ASSIGNED TO EACH DEPARTMENT BY METHOD A AND METHOD B.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
ORAL PATHOLOGY									
	METHOD 1	129,979	149,399	201,102	205,932	233,023	260,973	267,688	264,544
	METHOD 2	142,607	158,677	211,816	213,879	243,010	271,396	279,512	277,579
A	METHOD 3	134,120	151,830	203,251	206,610	234,644	262,641	268,708	266,320
	METHOD 4	153,783	170,008	224,797	221,622	252,435	284,854	290,749	285,117
	METHOD 5	131,453	150,527	202,385	206,913	234,215	262,211	269,152	266,077
	METHOD 1	128,969	145,961	212,973	228,499	257,216	286,111	296,059	291,343
	METHOD 2	141,188	154,337	227,019	242,383	274,597	304,436	317,992	314,880
B	METHOD 3	132,977	148,155	215,790	229,683	260,036	289,044	297,950	294,548
	METHOD 4	152,002	164,565	244,038	255,910	291,000	328,098	338,837	328,491
	METHOD 5	130,601	147,800	211,851	224,447	252,893	281,874	291,244	287,206
DENT SERV ADMIN									
	METHOD 1	380,821	319,686	358,995	394,715	442,786	465,365	466,269	458,831
	METHOD 2	408,991	340,385	382,894	436,914	470,786	494,588	491,752	486,925
A	METHOD 3	390,060	325,109	363,787	449,209	447,330	470,043	468,466	462,656
	METHOD 4	433,923	365,661	411,853	432,827	497,210	532,319	515,972	503,172
	METHOD 5	384,110	322,204	361,856	399,922	446,128	468,837	469,423	462,135
	METHOD 1	395,708	333,365	377,265	407,553	453,541	455,963	538,373	487,241
	METHOD 2	429,920	357,655	406,292	454,885	484,827	482,230	589,550	526,468
B	METHOD 3	406,929	339,729	383,086	468,676	458,618	460,168	542,786	492,583
	METHOD 4	460,199	387,317	441,465	450,300	514,354	516,146	638,189	549,154
	METHOD 5	396,671	333,055	376,425	407,308	452,431	461,484	525,570	484,534

TABLE 19 (CONTINUED--PAGE FOUR)
TOTAL COSTS FOR EACH DEPARTMENT BY FISCAL YEAR DETERMINED BY DIRECT COSTS PLUS INDIRECT COSTS.
COSTS ASSIGNED TO EACH DEPARTMENT BY METHOD A AND METHOD B.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
ORAL SURGERY									
	METHOD 1	165,294	214,586	252,321	233,860	254,318	221,298	270,895	270,875
	METHOD 2	181,433	226,445	266,014	245,001	268,317	235,909	294,771	297,197
A	METHOD 3	170,587	217,693	255,067	234,811	256,590	223,637	272,954	274,459
	METHOD 4	195,718	240,927	282,606	255,855	281,530	254,775	317,464	312,420
	METHOD 5	167,178	216,028	253,960	235,325	255,989	223,034	273,850	273,970
	METHOD 1	148,103	210,890	263,585	253,086	257,800	205,910	236,716	253,755
	METHOD 2	157,267	221,779	280,440	269,284	272,863	215,683	248,414	273,369
B	METHOD 3	151,109	213,743	266,965	254,467	260,244	207,474	237,725	256,426
	METHOD 4	165,378	235,076	300,863	285,066	287,080	228,303	259,531	284,712
	METHOD 5	152,673	213,096	262,942	250,173	258,677	210,998	247,236	260,473
FIXED PROSTHODONTICS									
	METHOD 1	414,424	471,979	565,082	638,527	680,554	748,963	691,572	871,394
	METHOD 2	455,969	502,506	600,329	676,419	728,171	798,660	766,212	944,793
A	METHOD 3	428,050	479,977	572,151	641,758	688,281	756,919	697,862	881,389
	METHOD 4	492,739	539,783	643,037	713,337	773,108	862,828	836,762	987,240
	METHOD 5	419,274	275,692	569,303	643,203	686,237	754,868	700,812	880,025
	METHOD 1	390,331	438,661	539,590	615,878	644,186	719,125	632,468	810,220
	METHOD 2	422,099	460,438	567,681	647,812	680,687	759,442	684,923	859,647
B	METHOD 3	400,750	440,366	545,223	618,601	650,109	725,579	636,889	816,951
	METHOD 4	450,215	487,032	601,719	678,925	715,134	811,498	734,505	888,231
	METHOD 5	398,945	449,260	548,976	625,605	658,159	731,529	653,701	831,795

TABLE 19 (CONTINUED--PAGE FIVE)
TOTAL COSTS FOR EACH DEPARTMENT BY FISCAL YEAR DETERMINED BY DIRECT COSTS PLUS INDIRECT COSTS.
COSTS ASSIGNED TO EACH DEPARTMENT BY METHOD A AND METHOD B.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
OPERATIVE DENTISTRY									
	METHOD 1	356,198	395,779	454,831	475,536	515,316	556,278	699,793	685,698
	METHOD 2	388,403	419,443	482,153	503,636	550,672	603,132	746,628	737,330
A	METHOD 3	366,761	401,979	460,310	477,932	521,091	572,178	703,832	692,729
	METHOD 4	416,906	448,339	515,260	531,013	583,997	650,718	791,141	767,190
	METHOD 5	359,958	398,658	458,103	479,004	519,575	570,658	705,591	691,770
	METHOD 1	377,702	402,952	459,238	493,628	545,791	606,441	718,134	698,087
	METHOD 2	418,634	428,499	487,797	526,487	590,403	655,921	771,504	754,575
B	METHOD 3	391,127	409,645	464,965	496,430	553,030	614,362	722,736	705,780
	METHOD 4	454,861	459,695	522,403	558,502	632,506	719,808	822,228	787,242
	METHOD 5	378,102	404,348	461,616	493,061	543,069	602,072	719,872	701,538
REMOVABLE PROSTHODONTICS									
	METHOD 1	338,293	378,632	476,024	517,869	579,140	670,287	729,508	722,753
	METHOD 2	369,900	401,856	502,840	548,523	617,661	710,492	780,016	778,435
A	METHOD 3	348,659	384,716	481,402	520,483	585,391	676,723	733,863	730,336
	METHOD 4	397,875	430,216	535,332	578,389	654,016	762,403	828,020	810,637
	METHOD 5	341,984	381,456	479,235	521,652	583,738	675,065	735,760	729,302
	METHOD 1	326,645	361,958	480,570	506,899	566,843	670,645	733,436	704,789
	METHOD 2	353,526	380,804	508,661	534,668	601,605	710,962	785,345	753,431
B	METHOD 3	335,462	356,895	486,203	509,267	572,484	677,099	737,913	711,413
	METHOD 4	377,317	403,817	542,699	561,722	634,412	763,018	834,679	781,561
	METHOD 5	332,155	368,229	482,859	513,128	574,243	675,345	738,819	715,138

TABLE 19 (CONTINUED--PAGE SIX)
TOTAL COSTS FOR EACH DEPARTMENT BY FISCAL YEAR DETERMINED BY DIRECT COSTS PLUS INDIRECT COSTS.
COSTS ASSIGNED TO EACH DEPARTMENT BY METHOD A AND METHOD B.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
ENDODONTICS									
	METHOD 1	140,475	152,240	195,507	218,902	199,490	232,877	272,942	280,566
	METHOD 2	154,598	162,617	207,489	229,404	212,687	246,651	291,423	300,941
A	METHOD 3	145,107	154,959	197,910	219,797	201,631	235,082	274,536	283,341
	METHOD 4	167,097	175,289	222,007	239,635	225,142	264,435	308,988	312,724
	METHOD 5	142,124	153,502	196,942	220,198	201,065	234,514	275,230	282,962
	METHOD 1	122,235	128,671	184,514	228,240	196,119	233,755	264,163	274,621
	METHOD 2	128,955	132,859	193,409	241,198	208,286	247,805	279,516	292,665
B	METHOD 3	124,439	129,768	186,298	229,235	198,094	236,004	265,487	277,078
	METHOD 4	134,903	137,973	204,188	253,824	219,769	265,946	294,108	303,101
	METHOD 5	126,733	134,804	188,176	227,453	198,463	235,201	268,393	278,275
OCCLUSION									
	METHOD 1	123,004	157,282	184,020	199,041	211,576	224,115	244,756	255,368
	METHOD 2	137,799	168,153	196,571	212,878	228,964	242,263	266,681	279,539
A	METHOD 3	127,857	160,131	186,537	200,221	214,398	227,020	246,647	258,660
	METHOD 4	150,894	181,428	211,781	226,359	245,374	265,695	287,519	293,518
	METHOD 5	124,731	158,601	184,523	200,749	213,652	226,272	247,470	258,211
	METHOD 1	107,623	150,971	182,669	193,943	198,285	209,136	236,571	237,733
	METHOD 2	116,176	160,184	194,842	206,439	211,611	222,575	255,580	254,993
B	METHOD 3	110,428	153,385	185,110	195,009	200,447	211,288	238,210	240,083
	METHOD 4	123,746	171,435	209,592	218,613	224,187	239,928	273,646	264,974
	METHOD 5	111,753	153,597	184,446	196,787	203,390	214,556	241,096	244,307

TABLE 19(CONTINUED--PAGE SEVEN)
TOTAL COSTS FOR EACH DEPARTMENT BY FISCAL YEAR DETERMINED BY DIRECT COSTS PLUS INDIRECT COSTS.
COSTS ASSIGNED TO EACH DEPARTMENT BY METHOD A AND METHOD B.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
DENTAL MATERIALS									
	METHOD 1	82,542	120,175	133,671	145,437	146,751	171,174	178,482	349,230
	METHOD 2	86,727	123,250	137,221	149,695	152,101	176,758	185,255	356,696
A	METHOD 3	83,915	120,981	134,383	145,800	147,619	172,068	179,066	350,247
	METHOD 4	90,230	127,005	141,523	153,843	157,150	183,967	191,691	361,014
	METHOD 5	83,031	120,549	134,096	145,963	147,389	171,837	179,320	350,108
	METHOD 1	87,285	140,365	154,383	164,438	167,158	192,274	200,510	456,305
	METHOD 2	93,394	148,741	163,747	173,694	178,745	204,491	215,132	505,732
B	METHOD 3	89,289	142,560	156,261	165,227	169,038	194,230	201,771	463,036
	METHOD 4	98,802	158,969	175,093	182,712	189,681	220,266	229,029	534,316
	METHOD 5	87,033	136,566	150,611	160,726	163,145	188,342	196,473	434,527
DENTAL HYGIENE									
	METHOD 1	3,783,407	4,109,902	4,630,922	5,185,260	5,516,546	6,249,756	7,129,150	7,472,871
	METHOD 2	4,205,829	4,386,832	4,895,906	5,530,881	5,925,828	6,678,975	7,722,993	8,188,656
A	METHOD 3	3,917,709	4,181,424	4,684,064	5,265,630	5,582,958	6,318,466	7,180,212	7,560,812
	METHOD 4	4,555,294	4,716,231	5,216,990	5,822,414	6,312,086	7,233,175	8,286,998	8,492,122
	METHOD 5	3,831,823	4,143,371	4,662,652	5,227,910	5,565,392	6,300,759	7,202,661	7,548,814
	METHOD 1	3,509,032	3,896,471	4,694,340	5,082,678	5,259,831	6,118,312	6,813,147	7,120,256
	METHOD 2	3,814,139	4,116,001	4,977,124	5,403,068	5,590,650	6,506,210	7,293,297	7,627,859
B	METHOD 3	3,606,815	3,953,310	4,751,051	5,167,088	5,313,512	6,180,407	6,854,448	7,189,380
	METHOD 4	4,071,026	4,378,322	5,319,778	5,664,519	5,902,859	7,007,056	7,749,363	7,921,413
	METHOD 5	3,600,225	3,974,023	4,713,220	5,145,615	5,367,195	6,197,946	6,955,483	7,270,808

TABLE 20

TOTAL NET COST FOR EACH DEPARTMENT CALCULATED BY DIRECT COSTS PLUS INDIRECT COSTS MINUS INCOME.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
PEDODONTICS									
	METHOD 1	365,566	241,637	253,302	259,209	284,738	375,334	426,714	394,721
	METHOD 2	444,267	266,009	276,884	279,220	309,878	403,626	464,366	436,230
A	METHOD 3	387,133	246,988	258,031	260,916	288,817	379,863	429,961	400,374
	METHOD 4	489,517	287,002	305,459	298,716	333,605	440,156	500,150	460,234
	METHOD 5	373,855	244,388	256,125	261,679	287,738	378,696	431,375	399,602
	METHOD 1	315,691	227,449	244,117	260,134	279,489	378,458	243,703	388,134
	METHOD 2	358,100	243,441	260,035	280,960	300,921	409,001	449,527	424,224
B	METHOD 3	327,313	230,960	247,309	261,910	282,966	383,348	426,793	393,049
	METHOD 4	382,485	257,215	279,323	301,251	321,148	448,438	493,575	445,095
	METHOD 5	335,566	235,699	252,473	261,912	285,255	380,260	429,499	395,942
ORTHODONTICS									
	METHOD 1	195,518	215,151	233,197	256,603	290,772	384,870	410,123	438,291
	METHOD 2	219,877	233,050	253,863	282,787	323,676	419,211	456,958	489,924
A	METHOD 3	203,508	219,841	237,342	258,836	296,111	390,368	414,162	445,323
	METHOD 4	241,437	254,907	278,905	308,297	354,728	463,552	501,470	519,784
	METHOD 5	198,362	217,328	235,672	259,834	294,699	388,951	415,921	444,363
	METHOD 1	169,054	210,935	232,737	242,137	263,102	371,123	377,421	407,457
	METHOD 2	177,607	224,756	249,592	255,559	276,428	395,557	403,740	434,132
B	METHOD 3	171,860	214,556	236,117	243,282	265,264	375,034	379,690	411,090
	METHOD 4	185,777	241,632	270,015	268,635	289,004	427,106	428,755	449,558
	METHOD 5	177,983	216,322	237,963	256,187	281,630	382,067	395,960	427,005

TABLE 20 (CONTINUED--PAGE TWO)
TOTAL NET COST FOR EACH DEPARTMENT CALCULATED BY
DIRECT COSTS PLUS INDIRECT COSTS MINUS INCOME.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
PERIODONTICS									
	METHOD 1	206,881	243,141	301,902	363,466	335,768	432,302	577,474	561,200
	METHOD 2	235,051	263,840	325,801	391,636	371,168	469,249	628,671	617,641
A	METHOD 3	216,120	248,565	306,695	365,868	341,512	438,216	581,889	568,886
	METHOD 4	259,983	289,116	354,760	419,083	404,577	516,954	677,330	650,282
	METHOD 5	210,170	245,659	304,764	366,942	339,993	436,692	583,812	567,837
	METHOD 1	189,379	236,030	302,408	363,010	315,214	427,653	572,781	549,625
	METHOD 2	207,096	249,851	330,499	390,778	366,072	461,251	621,034	596,698
B	METHOD 3	195,190	239,651	308,041	365,378	318,599	433,032	576,942	556,036
	METHOD 4	222,777	266,728	364,537	417,833	355,756	504,631	663,893	623,921
	METHOD 5	196,692	243,962	302,244	366,827	330,285	434,365	580,947	561,321
ORAL DIAGNOSIS									
	METHOD 1	282,813	271,360	262,386	301,593	342,641	436,346	588,934	551,850
	METHOD 2	312,851	293,431	287,870	323,874	370,640	465,569	645,986	614,746
A	METHOD 3	292,665	277,143	267,497	303,493	347,184	441,024	593,854	560,415
	METHOD 4	339,437	320,383	318,750	345,582	397,064	503,300	700,208	651,119
	METHOD 5	286,320	274,044	265,438	304,342	345,983	439,819	595,996	559,247
	METHOD 1	273,435	265,861	261,627	300,993	337,461	448,351	570,247	524,548
	METHOD 2	297,872	282,613	280,823	322,745	361,794	486,224	615,575	565,345
B	METHOD 3	281,450	270,250	265,477	302,848	341,409	454,414	574,156	530,104
	METHOD 4	319,500	303,069	304,082	343,938	384,759	535,126	658,656	588,938
	METHOD 5	279,098	272,732	269,218	304,191	343,536	445,829	584,590	543,876

TABLE 20(CONTINUED--PAGE THREE)
TOTAL NET COST FOR EACH DEPARTMENT CALCULATED BY
DIRECT COSTS PLUS INDIRECT COSTS MINUS INCOME.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
ORAL PATHOLOGY									
	METHOD 1	119,943	123,650	164,227	184,730	214,463	242,280	253,355	247,386
	METHOD 2	132,571	132,928	174,941	192,678	224,450	252,704	265,178	260,421
A	METHOD 3	124,085	126,081	166,376	185,408	216,084	243,949	254,374	249,161
	METHOD 4	143,748	144,259	187,923	200,421	233,875	266,162	276,415	267,959
	METHOD 5	121,418	124,778	165,510	815,711	215,655	243,519	254,818	248,919
	METHOD 1	199,258	122,716	164,630	191,459	224,914	253,247	269,470	260,360
	METHOD 2	131,476	131,092	178,675	205,344	242,295	271,573	291,403	283,897
B	METHOD 3	123,265	124,911	167,447	192,643	227,734	256,180	271,361	263,566
	METHOD 4	142,290	141,321	195,695	218,871	258,698	295,235	312,248	297,508
	METHOD 5	120,890	124,555	163,507	187,407	220,591	249,010	264,655	256,223
DENT SERV ADMIN									
	METHOD 1	145,730	127,985	142,019	325,759	381,781	403,627	435,375	421,848
	METHOD 2	173,900	148,684	165,918	367,958	409,980	432,849	460,589	449,942
A	METHOD 3	154,969	133,408	146,812	380,253	386,524	408,305	437,573	425,674
	METHOD 4	198,832	173,960	194,877	363,871	436,404	470,581	485,079	466,190
	METHOD 5	149,018	130,502	144,881	330,966	385,322	407,099	438,530	425,152
	METHOD 1	155,844	131,698	142,638	331,343	386,627	399,525	476,331	435,603
	METHOD 2	190,056	155,989	171,665	378,676	417,913	425,792	527,508	474,831
B	METHOD 3	167,065	138,062	148,459	392,467	391,703	403,730	480,744	440,945
	METHOD 4	220,336	185,651	206,838	374,091	447,439	459,708	576,148	497,516
	METHOD 5	156,808	131,389	141,798	331,098	387,517	405,046	463,529	432,896

TABLE 20 (CONTINUED--PAGE FOUR)
TOTAL NET COST FOR EACH DEPARTMENT CALCULATED BY
DIRECT COSTS PLUS INDIRECT COSTS MINUS INCOME.

	FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
	DEPARTMENT/METHOD								
	ORAL SURGERY								
	METHOD 1	152,104	172,086	182,352	182,069	207,694	169,003	220,631	206,233
	METHOD 2	168,244	183,945	196,045	193,210	221,693	183,614	244,508	232,555
A	METHOD 3	157,398	175,193	185,098	183,020	209,965	171,342	222,690	209,817
	METHOD 4	182,529	198,427	212,637	204,064	234,095	202,480	267,200	247,778
	METHOD 5	153,988	173,528	183,992	183,444	209,364	170,739	223,587	209,328
	METHOD 1	140,425	171,083	182,734	187,802	209,198	162,290	201,217	197,944
	METHOD 2	149,588	181,972	199,588	204,000	224,261	172,064	212,915	217,558
B	METHOD 3	143,430	173,936	186,114	189,183	211,642	163,855	202,226	200,615
	METHOD 4	157,699	195,268	220,012	219,782	238,478	184,684	224,032	228,901
	METHOD 5	144,994	173,289	182,091	184,889	210,075	167,378	211,737	204,662
	FIXED PROSTHODONTICS								
	METHOD 1	338,150	341,621	371,725	393,904	440,196	513,884	362,448	608,842
	METHOD 2	379,695	372,147	406,971	431,796	487,813	563,581	437,088	682,241
A	METHOD 3	351,776	349,619	378,793	397,136	447,923	521,839	368,738	618,837
	METHOD 4	416,466	409,424	449,680	468,714	532,750	627,749	507,638	724,689
	METHOD 5	343,000	345,334	375,947	398,580	445,879	519,789	371,688	617,474
	METHOD 1	321,780	332,576	370,861	387,151	424,486	500,867	354,449	579,225
	METHOD 2	353,548	354,354	398,952	419,084	460,986	541,184	406,904	628,652
B	METHOD 3	332,200	338,282	376,494	389,874	430,409	507,321	358,869	585,956
	METHOD 4	381,665	380,947	432,990	450,197	495,434	593,240	456,485	657,236
	METHOD 5	330,394	343,175	380,247	396,878	438,459	513,372	375,682	600,801

TABLE 20 (CONTINUED--PAGE FIVE)
TOTAL NET COST FOR EACH DEPARTMENT CALCULATED BY
DIRECT COSTS PLUS INDIRECT COSTS MINUS INCOME.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
OPERATIVE DENTISTRY									
	METHOD 1	316,191	309,916	326,118	349,914	407,587	443,349	582,822	540,235
	METHOD 2	348,396	333,580	353,440	378,013	442,898	480,203	629,657	591,868
A	METHOD 3	326,754	316,116	331,597	352,310	413,317	449,248	586,860	547,266
	METHOD 4	376,900	362,476	386,547	405,391	476,222	527,788	674,169	621,727
	METHOD 5	319,951	312,794	329,389	353,381	411,801	447,728	588,619	546,307
	METHOD 1	330,802	311,863	326,267	355,308	420,732	460,869	593,239	546,233
	METHOD 2	371,734	337,410	354,826	388,168	465,344	510,349	646,610	602,721
B	METHOD 3	344,227	318,557	331,995	358,110	427,971	468,790	597,842	553,926
	METHOD 4	407,961	368,606	389,432	420,182	507,446	574,237	697,334	635,389
	METHOD 5	331,202	313,259	328,646	354,741	418,010	456,501	494,978	549,684
REMOVABLE PROSTHODONTICS									
	METHOD 1	278,152	274,092	322,894	342,167	429,031	524,091	597,841	564,743
	METHOD 2	309,760	297,316	349,710	372,822	467,552	564,296	648,350	620,425
A	METHOD 3	288,519	280,177	328,272	344,782	435,282	530,527	602,197	572,326
	METHOD 4	337,734	325,676	382,202	402,688	503,906	616,207	696,353	652,627
	METHOD 5	281,842	276,917	326,105	345,950	433,628	528,869	604,093	571,291
	METHOD 1	270,239	269,566	323,048	338,897	423,719	424,247	600,073	556,046
	METHOD 2	297,119	288,412	351,140	366,665	458,481	564,564	651,981	604,688
B	METHOD 3	279,055	274,503	328,682	341,265	429,360	530,701	604,549	562,670
	METHOD 4	320,910	311,425	385,178	393,720	491,288	616,621	701,315	632,818
	METHOD 5	275,748	275,837	325,338	345,126	431,119	528,947	605,456	566,395

TABLE 20 (CONTINUED—PAGE SIX)
TOTAL NET COST FOR EACH DEPARTMENT CALCULATED BY
DIRECT COSTS PLUS INDIRECT COSTS MINUS INCOME.

	FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
	DEPARTMENT/METHOD								
	ENDODONTICS								
	METHOD 1	121,529	114,034	125,840	162,707	144,513	166,789	210,710	213,237
	METHOD 2	135,651	124,411	137,821	173,209	157,710	180,563	229,191	233,611
A	METHOD 3	126,161	116,753	128,243	163,603	146,654	168,994	212,304	216,011
	METHOD 4	148,150	137,083	152,339	183,441	170,165	198,347	246,756	245,394
	METHOD 5	123,177	115,297	127,275	164,003	146,088	168,426	212,998	215,633
	METHOD 1	109,135	107,636	125,467	165,492	143,057	167,172	205,723	210,358
	METHOD 2	115,856	111,824	134,363	178,450	155,224	181,222	221,076	228,403
B	METHOD 3	111,339	108,734	127,251	166,597	145,031	169,422	207,047	212,816
	METHOD 4	121,803	116,938	145,142	191,076	166,706	199,363	235,668	238,838
	METHOD 5	113,634	113,770	129,130	164,705	145,400	168,618	209,954	214,012
	OCCLUSION								
	METHOD 1	110,965	126,964	140,776	162,068	179,158	191,171	217,852	223,248
	METHOD 2	125,760	137,835	153,328	175,905	196,546	209,318	239,777	247,419
A	METHOD 3	115,818	129,812	143,294	163,248	181,979	194,076	219,743	226,540
	METHOD 4	138,855	151,109	168,537	189,386	212,956	232,751	260,615	261,398
	METHOD 5	112,693	128,286	142,279	163,775	181,233	193,327	220,566	226,091
	METHOD 1	100,515	125,250	140,731	160,547	173,416	184,636	213,203	214,710
	METHOD 2	109,068	134,464	152,903	173,043	186,742	198,075	232,212	231,970
B	METHOD 3	103,320	127,664	143,172	161,613	175,579	186,788	214,842	217,060
	METHOD 4	116,637	145,715	167,653	185,218	199,318	215,427	250,278	241,952
	METHOD 5	104,645	127,877	142,507	163,392	178,521	190,055	217,729	221,284

TABLE 20 (CONTINUED--PAGE SEVEN)
TOTAL NET COST FOR EACH DEPARTMENT CALCULATED BY
DIRECT COSTS PLUS INDIRECT COSTS MINUS INCOME.

FISCAL YEAR		FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT/METHOD									
DENTAL MATERIALS									
	METHOD 1	72,237	104,695	115,952	133,664	136,808	158,180	170,271	339,401
	METHOD 2	76,421	107,769	119,502	137,922	142,158	163,764	177,044	346,868
A	METHOD 3	73,609	105,500	116,664	134,027	137,676	159,074	170,855	340,418
	METHOD 4	80,125	111,524	123,804	142,070	147,207	170,974	183,481	351,186
	METHOD 5	72,725	105,069	116,377	134,190	137,446	158,843	171,110	340,279
	METHOD 1	75,459	110,176	116,654	139,330	145,623	167,385	182,784	391,241
	METHOD 2	81,569	118,552	126,018	148,586	157,211	179,602	197,406	440,668
B	METHOD 3	77,463	112,370	118,532	140,119	147,503	169,341	184,044	397,972
	METHOD 4	86,976	128,780	137,364	157,604	168,146	195,377	211,302	469,252
	METHOD 5	75,297	106,377	112,882	135,618	141,610	163,452	178,747	369,463
DENTAL HYGIENE									
	METHOD 1	402,338	423,720	347,274	509,602	613,284	646,718	918,195	903,707
	METHOD 2	468,093	472,035	352,852	572,046	691,752	728,616	1,038,956	1,036,838
A	METHOD 3	423,905	436,378	348,392	514,927	626,016	659,829	928,608	921,837
	METHOD 4	526,291	513,034	359,612	632,885	765,807	834,361	1,153,728	1,113,829
	METHOD 5	410,015	429,596	347,942	517,308	622,649	656,450	933,144	919,363
	METHOD 1	341,328	382,770	382,195	433,425	498,838	537,326	694,743	677,484
	METHOD 2	376,762	410,411	409,818	465,359	533,021	574,589	727,643	712,788
B	METHOD 3	352,950	390,012	387,735	436,148	504,384	543,291	697,581	682,291
	METHOD 4	408,123	444,164	443,289	496,471	565,281	622,701	758,911	733,206
	METHOD 5	360,677	404,919	366,950	466,994	541,231	577,984	764,259	745,959

TABLE 20 (CONTINUED--PAGE EIGHT)
TOTAL NET COST FOR EACH DEPARTMENT CALCULATED BY
DIRECT COSTS PLUS INDIRECT COSTS MINUS INCOME.

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
BASIC SCIENCE*								
METHOD 1	615,975	765,545	820,130	726,823	808,018	827,459	936,438	874,840
METHOD 2	723,948	844,881	911,733	785,648	881,939	904,610	1,032,175	980,382
METHOD 3	566,774	689,233	721,766	664,189	739,885	760,432	858,151	800,784
METHOD 4	593,307	713,762	724,674	683,192	762,405	788,548	894,771	832,016
METHOD 5	563,174	687,475	721,649	664,573	739,343	759,888	858,889	800,382

TABLE 21

COMPARISON OF AMERICAN BOARD SCORES
FOR EACH DEPARTMENT

FISCAL YEAR	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
DEPARTMENT								
PEDODONTICS	5.00	5.00	4.00	5.00	4.00	3.00	4.00	4.00
ORTHODONTICS	5.00	5.00	4.00	5.00	4.00	3.00	4.00	4.00
PERIODONTICS	5.00	4.00	3.00	5.00	3.00	2.00	3.00	5.00
ORAL DIAGNOSIS	5.00	4.00	2.00	5.00	1.00	2.00	1.00	2.00
ORAL PATHOLOGY	5.00	4.00	2.00	5.00	1.00	2.00	1.00	2.00
DENT SERV ADMIN	--	--	--	--	--	--	--	--
ORAL SURGERY	3.00	3.00	1.00	4.00	2.00	2.00	1.00	3.00
FIXED PROSTHODONTICS	5.00	3.00	2.00	5.00	2.00	2.00	2.00	2.00
OPERATIVE DENTISTRY	5.00	5.00	3.00	5.00	3.00	2.00	2.00	3.00
REMOVABLE PROSTHODONTICS	5.00	3.00	2.00	5.00	2.00	2.00	2.00	2.00
ENDODONTICS	4.00	5.00	3.00	5.00	3.00	2.00	2.00	5.00
OCCLUSION	1.00	1.00	1.00	1.00	3.00	2.00	1.00	1.00
DENTAL MATERIALS	--	--	--	--	--	--	--	--
DENTAL HYGIENE	4.00	4.00	4.00	3.00	5.00	5.00	4.00	4.00
BASIC SCIENCES	1.00	1.00	1.50	1.50	1.00	1.50	1.50	1.00

TABLE 22

COMPARISON OF A.A.D.S. STUDY (1966) AND THE INSTITUTE OF MEDICINE STUDY (1974).
THE COST PER STUDENT HAS BEEN ADJUSTED WITH CONSUMER PRICE INDEX[1].

	FY 76-77	FY 77-78	FY 78-79	FY 79-80	FY 80-81	FY 81-82	FY 82-83	FY 83-84
A.A.D.S. STUDY	7,506	7,994	8,610	9,583	10,877	12,088	12,861	13,349
INSTITUTE OF MEDICINE	14,159	15,079	16,240	18,075	20,516	22,649	24,251	25,179

CONSUMER PRICE INDEX

YEAR	%	YEAR	%	YEAR	%	YEAR	%	YEAR	%	YEAR	%
1966	2.9	1969	5.4	1972	3.3	1975	9.1	1978	7.7	1981	10.4
1967	2.9	1970	5.9	1973	6.2	1976	5.8	1979	11.3	1982	7.1
1968	4.2	1971	4.3	1974	11.0	1977	6.5	1980	13.5	1983	3.8

[1]U. S. Department of Commerce, Bureau of the Census. Statistical Abstract of the United States, 1984: p. 458.