# HOSPITALS: PATIENT ACTIVITY AND FINANCIAL PROJECTIONS (MODELING)

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## I. INTRODUCTION

Dramatic changes in health care delivery and reimbursement policies require that hospital management function effectively in a competitive market. These changes have increased the need to develop ways to assist hospital management to test alternatives and select the one most suited for current and future needs. To meet these needs, a hospital forecasting model is used to assist in long-range financial planning and the assessment of current financial status of both capital and operating resources.

Forecasting models can be broadly defined as systems (manual or automated) that use mathematical representations to predict future performance. They are generally composed of financial and statistical information to allow analysis of productivity and resource use. Forecasting models are particularly suited to computerization because they require the processing of large amounts of information most of which would be impractical to process manually. Computerized modeling systems also allow the user to quickly simulate the outcome of various alternatives. They are often interactive, time-sharing systems that allow the user to see the results of various changes within a short period of time.

One goal of the UC hospital forecasting model is to assure that a comparable methodology is used by each hospital in determining projections and that projections follow a consistent set of Universitywide assumptions. The primary purpose of using a model is to develop, test, and present alternative financial results for a variety of operating and financial environments in a consistent and meaningful way.

The purpose of this Accounting Manual chapter is to explain the process, capabilities, uses, reporting requirements, control process, and maintenance (i.e., changes or enhancements) of the UC hospital forecasting model.

## II. MODEL FEATURES

The University's teaching hospitals utilize a computerized

model to simulate patient statistics, costs, and revenues in a very detailed fashion under variable assumptions and changing reimbursement programs. The following are a few features of the model:

a) a significant tool in the planning for future operations because it allows management to evaluate the financial impact of certain alternative courses of action and thereby lead to management decisions that directly affect the level of future expenditures.

b) can provide patient and financial data for up to 13 years including 3 years of actual and 10 year of projected data.

c) provides consistent reporting of data elements (i.e., a consistent definition of terms are used).

d) allows for flexibility to meet the broad range of individual hospital needs, particularly for reimbursement.

e) permits a hospital to change individual or multiple variables for different scenarios.

f) provides summary and detailed reports of the assumptions and statistics used.

g) provides year-end financial statements (Income Statement and Balance Sheet) for each year.

h) provides profit and loss statement by sponsors.

III. USE OF THE MODEL PROJECTIONS

Although the model can be used at any time by each hospital for its own purpose, there are scheduled times that projections of annual data are required at the Office of the President (OP). Each hospital can run the model for its own purpose (e.g., internal budgeting, feasibility studies, the impact of a third-party payor contract, etc.). Model runs are required by the Office of the President for projections included in the six monthly presentations of the Hospital Activity and Financial Status Report to The Regents (pages: 6, Assumption Highlights, and 7, Full Year Original Budget and Managements' Current Projection for the Full Year) and for preparation of the annual Regents' Budget request, in conjunction with the Governor's Budget, and as part of the University's annual budget negotiating process. The model

is used for preparing both the Original Budget and Current Projection for the Full Year presented in the Monthly Statement of Operation. Also, the model is run for special projects requested by the hospital directors or by the Office of the President, e.g., the Debt Capacity Report. All model runs use consistent data definitions for comparable and reliable historical and projected data.

IV. PROCEDURES, REPORTS, AND SCHEDULING OF PROJECTIONS

A. PROCEDURES

There are two major categories of assumptions used for each model run. These are the Universitywide assumptions and the local hospital assumptions. The Universitywide assumptions, which are common to all hospitals, are developed by the OP Budget Office and coordinated within the OP and among the teaching hospitals. Input for the assumptions is often provided by the California Association of Hospitals and Health Systems and the Association of American Medical Colleges.

If Universitywide and local assumptions for a particular model run will not have a significant impact on the projections from the previous model run, a hospital may elect to utilize the previous model run as the current projections.

B. REPORTS

The primary report required by the OP from each model run is the OP Budget Office's Table 2-A, i.e., the Teaching Hospital's Operating Budget Statistics (see Appendix I) and the Analysis of the Teaching Hospital's Reserve and other Capital Improvement Funds (see Appendix I-A). Table 2-A information is used by the OP Budget Office and by the OP Office of Hospital Accounting for internal and external reporting purposes. Other information provided from Table 2-A is used to complete the Debt Capacity Report, which is prepared by the OP Office of Business Analysis. Appendix II is a Supplemental Schedule which is to be prepared as part of the model run each time the Debt Capacity Report is prepared. The projections also are used to determine the viability of individual capital

IV. PROCEDURES, REPORTS, AND SCHEDULING OF PROJECTIONS (Cont.)
B. REPORTS (Cont.)

projects and for the University's Debt Capacity Report. Another report required with each model run is a List of Assumptions (see Appendix III). The List of Assumptions is used to assure consistency of application of the Universitywide assumptions and to review the reasonableness of the local hospital assumptions. OP may request special reports from the runs of the model. The definition of terms used to prepare the pro-forma Income Statement and the Balance Sheet from the model are found in Accounting Manual chapter H-576-67, Hospitals: Reporting Requirements.

C. SCHEDULING

The schedule for the six standard model runs per fiscal year is prepared by the OP Office of Information Systems and Administrative Services (IS&AS) and coordinated with the OP Budget Office and the OP Office of Hospital Accounting. The schedule assigns a case number for each model run, a sign-off date for the Universitywide assumptions to be provided the hospitals by the OP, a due date of the model projections to be received at the Office of the President, the fiscal years covered by the model run, the purpose of the model run, the mailing date to The Regents of some of the projections provided, and the date of The Regents meeting.

The schedule of model runs is prepared annually by the Associate Vice President--IS&AS and distributed annually to the hospitals and interested OP staff in June. The 1992-1993 schedule is presented Appendix IV.

V. MAINTENANCE OF THE MODEL

Procedures for adding, deleting or changing data elements and data definitions will be established by the Associate Vice President--IS&AS and the Hospital Finance Directors or their designees. Requests for any changes from the hospitals or the Office of the President shall be sent to the Associate Vice President--IS&AS. All modifications and upgrades of the model, including changes to the data elements shall be presented to the Hospital Data Forecasting Workgroup (Model Workgroup) for a recommendation to the Hospital Financial Management Committee which has the final say. The Model Workgroup will be chaired by the Associate Vice President--IS&AS or designee and consist of one member from IS&AS, the OP Budget Office, Office of the Vice President--Health Affairs and Office of Hospital Accounting

in the Office of the President. Each hospital will be represented by the Hospital Finance Director or his/her designee on the Workgroup. The Hospital Finance Director, acting as chairperson of the Hospital Finance Management Committee, should serve on the Model Workgroup.

The Model Workgroup should meet as needed but no less than twice a year to review requests for modifications, upgrades, or changes to the data elements. The Model Workgroup determines the appropriate definition of all new data elements. The chairperson and the Workgroup report to the Hospital Financial Management Committee in order to keep the hospital directors informed or to seek advice from the directors, when needed.

## VI. QUALITY CONTROL

In order to assure the Office of the President that the integrity of the model is being maintained and that procedures established in this Accounting Manual chapter are being complied with, an audit should be performed by the University's internal auditors. The auditors should perform a compliance audit annually to verify that the UC hospitals are all using the same version of the Model. Further, the audit should determine whether the hospitals and the Office of the President are following the procedures established in this Accounting Manual chapter. The audit reports are to be submitted to the Senior Vice President--Administration, the Hospital Finance Directors, and the Associate Vice President--IS&AS. The Associated Vice President--IS&AS is responsible for distributing the reports to the Model Workgroup. Following instructions from the Hospital Finance Directors, the Model Workgroup will be responsible for submitting a written response to the audit comments. A draft of the written response shall be reviewed by the Hospital Finance Directors before being sent by the Model Workgroup to the Associate Vice President--IS&AS, who in turn will send copies to the Senior Vice President--Administration, the auditors, and the Hospital Finance Directors.

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Historical note: Original Accounting Manual chapter published 12/1/92; analyst--John Turek.

## APPENDIX I: TEACHING HOSPITAL'S OPERATING BUDGET STATISTICS

**UNIVERSITY OF CALIFORNIA**
Teaching Hospitals
Operating Budget Statistics
_____ Campus

| | 1993-94 Actual | 1994-95 Projected | 1995-96 Projected |
|---|---|---|---|
| PROGRAM STATISTICS | | | |
| Inpatient Utilization: | | | |
| Licensed Bed Capacity | | | |
| Average Available Bed Capacity | | | |
| Percentage of Bed Occupancy | | | |
| Admissions | | | |
| Length of Stay | | | |
| Number of Days of Care: | | | |
| Adult Days: | | | |
| Medicare | | | |
| Medi-Cal | | | |
| County | | | |
| Private Insurance | | | |
| Contract | | | |
| Non-Sponsored | | | |
| Total Adult Days | | | |
| Newborn Days | | | |
| Outpatient: | | | |
| Clinic Visits: | | | |
| Hospital Clinic | | | |
| Other Clinics (Specify) | | | |
| Total Clinic Visits | | | |
| Emergency Visits | | | |
| Total Visits | | | |
| FTE Staff (Excluding House Staff) | | | |
| | | | |
| FINANCIAL STATISTICS (000'S) | | | |
| Summary of Revenue & Expense: | | | |
| Gross Patient Revenue | $ | $ | $ |
| Deductions from Revenue: | | | |
| Contractual & Admin. Allowances: | | | |
| Medicare | | | |
| Medi-Cal | | | |
| County | | | |
| Private Insurance | | | |
| Contract | | | |
| SB 855 Funds | ( ) | ( ) | ( ) |
| Admin. Allowances | | | |
| Total Contractual & Admin. Allowances | | | |
| Provision for Uncollectibles | | | |
| Teaching Allowances | | | |
| Total Revenue Deductions | | | |
| Net Patient Revenue | | | |
| | | | |
| Other Operating Revenue: | | | |
| Clinical Teaching Support | | | |
| County Tobacco Tax Funds | | | |
| Other | | | |
| Total Other Operating Revenue | | | |
| Total Operating Revenue | | | |
| | | | |
| Operating Expense | | | |
| Net Operating Gain (Loss) | | | |
| Non-Operating Income | | | |
| Prior Year Adjustments | | | |
| Prior Year SB 855 Funds | | | |
| Net Gain (Loss) | $ | $ | $ |

APPENDIX I-A: ANALYSIS OF HOSPITAL RESERVE AND OTHER CAPITAL IMPROVEMENTS FUNDS

**UNIVERSITY OF CALIFORNIA**
Teaching Hospitals
Analysis of Hospital Reserve and Other Capital Improvement Funds
_____ Campus
(dollars in thousands)

| | 1993-94 Actual | 1994-95 Projct'd | 1995-96 Projct'd | 1996-97 Projct'd | 1997-98 Projct'd |
|---|---|---|---|---|---|
| BEGINNING BALANCE 7/1 | | | | | |
| SOURCES OF FUNDS: | $ | $ | $ | $ | $ |
| Current Year Gain (Loss) | | | | | |
| Depreciation(Building) | | | | | |
| Depreciation(Equipment) | | | | | |
| Other (Specify) | | | | | |
| TOTAL SOURCES OF FUNDS | | | | | |
| APPLICATION OF FUNDS: | | | | | |
| Facilities: | | | | | |
| Major Capital Improvements: (list by project or attach list; separate into approved and planned projects) | | | | | |
| Minor Capital Improvements | | | | | |
| Total Facilities Expenditures | | | | | |
| Equipment: | | | | | |
| Replacement | | | | | |
| Additional | | | | | |
| Other | | | | | |
| Total Equipment Expenditures | | | | | |
| Amortization of Loans: (list by loan) | | | | | |
| Total Amortiz.of Loans | | | | | |
| Other Expenditures: (list) | | | | | |
| Total Other Expenditures | | | | | |
| TOTAL APPLICATIONS OF FUNDS | | | | | |
| ENDING BALANCE 6/30 | $ | $ | $ | $ | $ |

APPENDIX II: SUPPLEMENTAL SCHEDULE FOR DEBT CAPACITY REPORT

**UNIVERSITY OF CALIFORNIA**
Teaching Hospitals
Supplemental Schedule for Debt Capacity Report
_____ Campus

Provide the following analysis of operating expenses for each fiscal year of the model run for the Debt Capacity Report:

Operating Expenses

| | |
|---|---|
| Working Capital Interest | $ |
| Interest on Capital Leases/Installment Purchases | |
| Interest on Debt | |
| Depreciation | |
| All Other Expenses | $ |
| Total Operating Expenses | $ |

APPENDIX III: HOSPITAL PATIENT ACTIVITY AND FINANCIAL PROJECTIONS SUMMARY OF LOCAL AND SYSTEMWIDE ASSUMPTIONS

**UNIVERSITY OF CALIFORNIA**
Teaching Hospitals
_____ Medical Center

Hospital Patient Activity and Financial Projections
Summary of Local and Systemwide Assumptions
Case # _____

Fiscal Year:*

1. Patient Census:

In patient Days/Outpatient Visits: Provide the percentage change (increase or decrease) in patient volume from the prior year and the reasons why, e.g., added facilities or programs, changes in average length of stay or case mix intensity.

Patient Sponsor Mix: Specify reasons for changes from the prior year in sponsor mix in inpatient days or outpatient visits.

2. Operating Expense:

List the main local and systemwide assumptions made in projecting change (increase or decrease) in operating expenses including:

Salary Range Increase:
Represented: ____% staff; effective _____;
____% House Staff; effective _____
Non-Represented: ____% staff; effective _____
Salary Merit Increase: average _____%; effective _____
Employee Benefits: _____% of salaries; or
other method (explain)

Other Expenses:
Interest: annual percentage rate on STIP Loan ____%;
other loans (specify) _____%
Malpractice Insurance: annual amount $_____
Other Expenses: average _____%

3. OPERATING REVENUE:

List the main local and systemwide assumptions made in projecting changes (increases or decrease) in patient revenue from the prior year including:

Charges (rates): average ____% change; effective _____
Payment rates for government-sponsored programs:
Medicare: systemwide assumptions or other (specify)
Medi-Cal: ____% change in per diem; effective _____
____% change in outpatient rate; effective _____
County Programs: ____% change and reason
Clinical Teaching Support: ____% change and reason
Tobacco Tax Funds: ____% change and reason
Other Patient Revenue: ____% change, source, and reason

*Either provide a separate narrative list for each fiscal year or indicate for each category, e.g., patient census, operating expense, operating revenue, the assumptions used for that category in each projected fiscal year.

APPENDIX III: (Cont.)

4. Non-Operating Income, Prior Year Adjustments, and Other:

Indicate the source and amount of each item.

5. Other Assumptions:

List other assumptions that impact the projection of patient activity or financial statistics, e.g., completion of and debt service on capital improvement projects.

* APPENDIX IV: SCHEDULE OF REPORTING HOSPITAL FINANCIAL INFORMATION
FISCAL YEAR 1993-1994

| CASE NUMBER | OP/HOSPITALS SIGN-OFF ASSUMPTIONS | FILE DUE AT OFFICE OF PRESIDENT | PERIOD COVERED | PURPOSE | MAILING | REGENTS MEETING |
|---|---|---|---|---|---|---|
| 51 | Aug. 6 (FRI) | Aug. 30 (MON) | 92-93 Projected Actual<br>93-94 Projection*<br>94-95 Projection* | 94-95 Regents' Budget | Oct. 6 (WED) | Oct. 14 (THURS) |
| 52 | Oct. 1 (FRI) | Oct. 25 (MON) | 92-93 Final**<br>93-94 Projection*<br>94-95 Projection* | 93-94 Hospital Financial Activity Report (Sept. 30**)<br>94-95 Governor's Budget | Nov. 5 (FRI) | Nov. 18-19 |
| 53 | Dec. 3 (FRI) | Jan. 5 (WED) | 92-93 Actual<br>93-94 Projection*<br>94-95 Projection* | 93-94 Hospital Financial Activity Report (Nov. 30**)<br>94-95 Governor's Budget and Legislative Analyst's Review | Jan. 10 MON. | Jan. 20-21 |
| 54 | Feb. 4 (FRI) | Feb. 28 (MON) | 92-93 Actual<br>93-94 Projection*<br>94-95 Projection* | 93-94 Hospital Financial Activity Report (Jan 31**)<br><br>Legislative Hearings on 94-95 Governor's Budget | Mar. 7 (MON) | Mar. 17-18 |
| 55 | Mar. 31 (THURS) | Apr. 25 (MON) | 92-93 Actual<br>93-94 Projection*<br>94-95 Projection* | 93-94 Hospital Financial Activity Report (Mar. 31**)<br><br>Legislative Hearings on 94-95 Governor's Budget | May 6 (FRI) | May 19-20 |
| 56 | Jun. 3 (FRI) | Jun. 27 (MON) | 92-93 Actual<br>93-94 Projection*<br>94-95 Projection* | 93-94 Hospital Financial Activity Report (May 31**) | Jul. 8 (FRI) | Jul. 14-15 |

* Model-generated projections.
** Year to date (YTD) actual financial data.

Information Management