

Health Care Finance

Basic Tools for Nonfinancial Managers

Third Edition

Judith J. Baker, PhD, CPA
Executive Director
Resource Group, Ltd.
Dallas, Texas

R.W. Baker, JD
Managing Partner
Resource Group, Ltd.
Dallas, Texas



JONES AND BARTLETT PUBLISHERS
Sudbury, Massachusetts
BOSTON TORONTO LONDON SINGAPORE

World Headquarters

Jones and Bartlett Publishers
40 Tall Pine Drive
Sudbury, MA 01776
978-443-5000
info@jbpub.com
www.jbpub.com

Jones and Bartlett Publishers
Canada
6339 Ormidale Way
Mississauga, ON L5V 1J2
Canada

Jones and Bartlett Publishers
International
Barb House, Barb Mews
London W6 7PA
United Kingdom

Jones and Bartlett's books and products are available through most bookstores and online booksellers. To contact Jones and Bartlett Publishers directly, call 800-832-0034, fax 978-443-8000, or visit our website, www.jbpub.com.

Substantial discounts on bulk quantities of Jones and Bartlett's publications are available to corporations, professional associations, and other qualified organizations. For details and specific discount information, contact the special sales department at Jones and Bartlett via the above contact information or send an email to specialsales@jbpub.com.

Copyright © 2011 by Jones and Bartlett Publishers, LLC

All rights reserved. No part of the material protected by this copyright may be reproduced or utilized in any form, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without written permission from the copyright owner.

This publication is designed to provide accurate and authoritative information in regard to the Subject Matter covered. It is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional service. If legal advice or other expert assistance is required, the service of a competent professional person should be sought.

Production Credits

Publisher: Michael Brown

Associate Editor: Maro Gartside

Editorial Assistant: Catie Heverling

Editorial Assistant: Teresa Reilly

Senior Production Editor: Tracey Chapman

Senior Marketing Manager: Sophie Fleck

Manufacturing and Inventory Control Supervisor: Amy Bacus

Composition: Auburn Associates, Inc.

Cover Design: Scott Moden

Cover Image: © Michael McDonald/Dreamstime.com; © Silvio Valent/Dreamstime.com; © George Bebawi/Dreamstime.com; © Grondin Julien/Dreamstime.com

Printing and Binding: Malloy, Inc.

Cover Printing: Malloy, Inc.

Library of Congress Cataloging-in-Publication Data

Baker, Judith J.

Health care finance : basic tools for nonfinancial managers / Judith Baker, R.W. Baker. — 3rd ed.
p. ; cm.

Includes bibliographical references and index.

ISBN-13: 978-0-7637-7894-1 (pbk.)

ISBN-10: 0-7637-7894-X (pbk.)

1. Health facilities—Finance. I. Baker, R. W. II. Title.

[DNLM: 1. Financial Management—United States. 2. Delivery of Health Care—economics—United States. 3. Health Facilities—economics—United States. 4. Health Facilities—organization & administration—United States. W 74 AA1 B167h 2009]

RA971.3.B353 2009

362.1068'1—dc22

2009026087

6048

Printed in the United States of America

13 12 11 10 09 10 9 8 7 6 5 4 3 2 1

Table of Contents

Preface	xiii
New to This Edition	xv
Acknowledgments	xvii
PART I—HEALTHCARE FINANCE OVERVIEW	1
Chapter 1 Introduction to Healthcare Finance	3
Progress Notes	3
The History	3
The Concept	4
How Does Finance Work in the Healthcare Business?	4
Viewpoints	4
Why Manage?	5
The Elements of Financial Management	5
The Organization's Structure	6
Two Types of Accounting	7
Information Checkpoint	9
Key Terms	9
Discussion Questions	10
Chapter 2 What Does the Healthcare Manager Need to Know?	11
Progress Notes	11
How the System Works in Health Care	11
The Information Flow	11
Basic System Elements	14
The Annual Management Cycle	19
Communicating Financial Information to Others	20
Information Checkpoint	20
Key Terms	21
Discussion Questions	21

iv TABLE OF CONTENTS

PART II—RECORD FINANCIAL OPERATIONS.....		23
Chapter 3	Assets, Liabilities, and Net Worth	25
	Progress Notes	25
	Overview	25
	What Are Examples of Assets?	26
	What Are Examples of Liabilities?	27
	What Are the Different Forms of Net Worth?	27
	Information Checkpoint.....	28
	Key Terms.....	28
	Discussion Questions.....	28
Chapter 4	Revenues (Inflow)	31
	Progress Notes	31
	Overview	31
	Receiving Revenue for Services	31
	Sources of Healthcare Revenue	33
	Grouping Revenue for Planning and Control	36
	Information Checkpoint.....	39
	Key Terms.....	39
	Discussion Questions.....	40
Chapter 5	Expenses (Outflow).....	41
	Progress Notes	41
	Overview	41
	Disbursements for Services	42
	Grouping Expenses for Planning and Control	42
	Cost Reports as Influencers of Expense Formats.....	46
	Information Checkpoint.....	48
	Key Terms.....	48
	Discussion Questions.....	48
Chapter 6	Cost Classifications	49
	Progress Notes	49
	Distinction between Direct and Indirect Costs	49
	Examples of Direct Cost and Indirect Cost	50
	Responsibility Centers	52
	Distinction between Product and Period Costs	55
	Information Checkpoint.....	56
	Key Terms.....	56
	Discussion Questions.....	56

PART III—TOOLS TO ANALYZE & UNDERSTAND FINANCIAL OPERATIONS..... 57

Chapter 7	Cost Behavior and Break-Even Analysis	59
	Progress Notes	59
	Distinction between Fixed, Variable, and Semivariable Costs.....	59
	Examples of Variable and Fixed Costs.....	62
	Analyzing Mixed Costs	65
	Contribution Margin, Cost-Volume-Profit, and Profit-Volume Ratios	68
	Information Checkpoint.....	74
	Key Terms.....	74
	Discussion Questions.....	74
Chapter 8	Understanding Inventory and Depreciation Concepts	75
	Progress Notes	75
	Overview: The Inventory Concept	75
	Inventory and Cost of Goods Sold (“Goods” Such as Drugs)	76
	Inventory Methods	77
	Inventory Tracking.....	78
	Calculating Inventory Turnover	80
	Overview: The Depreciation Concept.....	81
	Book Value of a Fixed Asset and the Reserve for Depreciation	81
	Five Methods of Computing Book Depreciation	83
	Computing Tax Depreciation	85
	Information Checkpoint.....	86
	Key Terms.....	86
	Discussion Questions.....	86
	Appendix 8-A A Further Discussion of Accelerated and Units-of-Service Depreciation Computations.....	87
Chapter 9	Staffing: The Manager’s Responsibility.....	95
	Progress Notes	95
	Staffing Requirements.....	95
	FTEs for Annualizing Positions.....	95
	Number of Employees Required to Fill a Position: Another Way to Calculate FTEs	98
	Tying Cost to Staffing	99
	Information Checkpoint.....	104
	Key Terms.....	104
	Discussion Questions.....	104

vi TABLE OF CONTENTS

PART IV—REPORT & MEASURE FINANCIAL RESULTS 105

Chapter 10	Reporting	107
	Progress Notes	107
	Understanding the Major Reports.....	107
	Balance Sheet.....	107
	Statement of Revenue and Expense	108
	Statement of Changes in Fund Balance/Net Worth.....	110
	Statement of Cash Flows.....	111
	Subsidiary Reports.....	113
	Summary.....	113
	Information Checkpoint.....	114
	Key Terms.....	114
	Discussion Questions.....	114

Chapter 11	Financial and Operating Ratios as Performance Measures	115
	Progress Notes	115
	The Importance of Ratios	115
	Liquidity Ratios.....	117
	Solvency Ratios	118
	Profitability Ratios	120
	Information Checkpoint.....	122
	Key Terms.....	122
	Discussion Questions.....	122

Chapter 12	The Time Value of Money	123
	Progress Notes	123
	Purpose	123
	Unadjusted Rate of Return	123
	Present-Value Analysis	124
	Internal Rate of Return	125
	Payback Period.....	125
	Evaluations.....	127
	Information Checkpoint.....	127
	Key Terms.....	127
	Discussion Questions.....	127
	Appendix 12-A Present Value Table.....	129
	Appendix 12-B Compound Interest Table	131
	Appendix 12-C Present Value of an Annuity of \$1.00	133

PART V—TOOLS TO REVIEW & MANAGE COMPARATIVE DATA 135

Chapter 13	Common Sizing, Trend Analysis, and Forecasted Data.....	137
	Progress Notes	137
	Common Sizing	137

Trend Analysis.....	138
Analyzing Operating Data.....	139
Importance of Forecasts.....	141
Operating Revenue Forecasts	142
Staffing Forecasts.....	144
Capacity Level Issues in Forecasting	147
Summary.....	147
Information Checkpoint.....	149
Key Terms.....	149
Discussion Questions.....	149
Chapter 14 Using Comparative Data	151
Progress Notes	151
Overview	151
Comparability Requirements.....	151
A Manager’s View of Comparative Data	152
Uses of Comparative Data	153
Making Data Comparable	158
Information Checkpoint.....	162
Key Terms.....	162
Discussion Questions.....	162
PART VI—CONSTRUCT & EVALUATE BUDGETS	163
Chapter 15 Operating Budgets	165
Progress Notes	165
Overview	165
Budget Viewpoints.....	166
Budget Basics: A Review	166
Building an Operating Budget: Preparation.....	168
Building an Operating Budget: Construction	169
Working with Static Budgets and Flexible Budgets	171
Budget Construction Summary	174
Budget Review.....	175
Information Checkpoint.....	176
Key Terms.....	176
Discussion Questions.....	176
Chapter 16 Capital Expenditure Budgets.....	177
Progress Notes	177
Overview	177
Creating the Capital Expenditure Budget	177
Budget Construction Tools	178
Funding Requests	180
Evaluating Capital Expenditure Proposals.....	182

viii **TABLE OF CONTENTS**

Information Checkpoint.....	183
Key Terms.....	184
Discussion Questions.....	184
Appendix 16-A A Further Discussion of Capital Budgeting Methods	185
PART VII—TOOLS TO PLAN, MONITOR, & MANAGE FINANCIAL STATUS	189
Chapter 17 Variance Analysis and Sensitivity Analysis	191
Progress Notes	191
Variance Analysis Overview	191
Three Types of Flexible Budget Variance	191
Two-Variance Analysis and Three-Variance Analysis Compared.....	192
Three Examples of Variance Analysis.....	194
Summary.....	198
Sensitivity Analysis Overview.....	199
Sensitivity Analysis Tools	199
Summary.....	202
Information Checkpoint.....	203
Key Terms.....	203
Discussion Questions.....	203
Chapter 18 Estimates, Benchmarking, and Other Measurement Tools	205
Progress Notes	205
Estimates Overview.....	205
Common Uses of Estimates.....	205
Example: Estimating the Ending Pharmacy Inventory	206
Example: Estimated Economic Impact of a New Specialty in a Physician Practice.....	207
Other Estimates	209
Importance of a Variety of Performance Measures	209
Adjusted Performance Measure over Time	209
Benchmarking	210
Economic Measures.....	211
Measurement Tools	211
Information Checkpoint.....	214
Key Terms.....	214
Discussion Questions.....	214
PART VIII—TECHNOLOGY AS A FINANCIAL TOOL.....	215
Chapter 19 Electronic Records: Financial Management Tools and Decisions	217
Progress Notes	217
Introduction	217
Electronic Health Records Adoption: Why Now?	217

American Recovery and Reinvestment Act of 2009 (ARRA)	
Incentives for Health Information Technology Adoption	219
ICD-10 E-Records Overview and Impact	221
ICD-10-CM and ICD-10-PCS.....	221
ICD-10 Benefits and Costs	223
System Implementation Planning	225
Situational Analysis.....	226
SWOT Analysis as a Tool	228
Technology in Healthcare Mini-Case Study	229
Information Checkpoint.....	229
Key Terms.....	229
Discussion Questions.....	230
Chapter 20	
 Information Systems Changes: The Manager's Challenge	231
Progress Notes	231
Overview: The Manager's Challenge.....	231
Systems and Applications Affected by the ICD-10 Change	231
ICD-10 Technology Change Details.....	232
ICD-10 Training and Lost Productivity Costs	234
E-Prescribing for Physicians: Overview.....	237
E-Prescribing Benefits and Costs	238
E-Prescribing Implementation.....	240
E-Prescribing Incentives and Penalties for Physicians and Other Eligible Prescribers	241
E-Prescribing Technical Input Example.....	245
Technology in Healthcare Mini-Case Study	245
Information Checkpoint.....	246
Key Terms.....	246
Discussion Questions.....	246
PART IX—ALLOCATE RESOURCES AND ACQUIRE FUNDS	247
Chapter 21	
 Understanding Investment Terms.....	249
Progress Notes	249
Overview	249
Cash Equivalents.....	249
Governmental Guarantor: The FDIC.....	250
Long-Term Investments in Bonds.....	251
Investments in Stocks	252
Privately Held Companies versus Public Companies.....	253
Investment Indicators.....	253
Information Checkpoint.....	254
Key Terms.....	254
Discussion Questions.....	255

x TABLE OF CONTENTS

Chapter 22	Business Loans and Financing Costs.....	257
	Progress Notes	257
	Overview of Capital Structure.....	257
	Sources of Capital.....	257
	The Costs of Financing.....	258
	Management Decisions about Business Loans.....	260
	Information Checkpoint.....	260
	Key Terms.....	260
	Discussion Questions.....	260
	Appendix 22-1-A Sample Amortization Schedule.....	261
Chapter 23	Owning versus Leasing Equipment	263
	Progress Notes	263
	Purchasing Equipment.....	263
	Leasing Equipment	263
	Buy-or-Lease Management Decisions	264
	Information Checkpoint.....	269
	Key Terms.....	269
	Discussion Questions.....	269
Chapter 24	Putting It All Together: Creating a Business Plan	271
	Progress Notes	271
	Overview	271
	Elements of the Business Plan	271
	Preparing to Construct the Business Plan	272
	The Service or Equipment Description	272
	The Organization Segment.....	272
	The Marketing Segment	273
	The Financial Analysis Segment	273
	The “Knowledgeable Reader” Approach to Your Business Plan	276
	The Executive Summary	276
	Assembling the Business Plan	276
	Presenting the Business Plan	277
	Information Checkpoint.....	277
	Key Terms.....	277
	Discussion Questions.....	278
	PART X—CASE STUDY	279
Chapter 25	Case Study: Metropolis Health System.....	281
	Background.....	281
	I. MHS Case Study	284
	Appendix 25-A Using Financial Ratios and Benchmarking: A Case Study in Comparative Analysis.....	293

PART XI—MINI-CASE STUDIES	299
Chapter 26 Mini-Case Study 1: Proposal to Add a Retail Pharmacy to a Hospital in the Metropolis Health System	301
Chapter 27-A Mini-Case Study 2: Changing Economic Realities in the Healthcare Setting: A Physician's Office Teaching Case.....	307
Improving Patient Care in a Changing Environment:	
A Teaching Case	308
Case Presentation	308
Case Analysis	312
Customer Perspective	312
Organizational Perspective	313
Provider Perspective	314
Chapter 27-B Mini-Case Study 2: Changing Economic Realities in the Healthcare Setting: The Physician Fee Schedule.....	315
Relative Value Units and the Physician Fee Schedule	316
Overview.....	316
Composition of the RBRVS System.....	316
Relative Value Weights and the Physician Fee Schedule	317
The Conversion Factor and the Physician Fee Schedule.....	320
Geographic Adjustments to the Physician Fee Schedule.....	320
Summary	322
Chapter 28 Mini-Case Study 3: The Economic Significance of Resource Misallocation: Client Flow through the Women, Infants, and Children Public Health Program	323
Confronting the Operational Problem	323
The Environment	323
The Peak-Load Problem.....	324
Method.....	325
Results	327
Chapter 29 Mini-Case Study 4: Technology in Health Care: Automating Admissions Processes	329
Assess Admissions Process	329
Areas to Automate	330
Fax and Document Management	330
Communication Is Important.....	330
Referral Tracking and Approval	331
Analyzing Referral Activity	331
Hours Saved	332

xii **TABLE OF CONTENTS**

Appendix A	Checklists	333
Appendix B	Web-Based and Software Learning Tools	337
Notes		339
Glossary.....		345
Examples and Exercises, Supplemental Materials, and Solutions		355
 Examples and Exercises.....		355
 Supplemental Materials		404
 Solutions to Practice Exercises.....		415
Index		431
About the Authors.....		443

Preface

Our world of work is divided into three parts: the healthcare consultant, the instructor, and the writer. Over the years, we have taught managers in seminars, in academic settings, and in corporate conference rooms. Most of the managers were midcareer adults, working in all types of healthcare disciplines. We taught them, and they taught us. One of the things they taught us was this: a nonfinancial manager pushed into dealing with the world of finance often feels a dislocation and a change of perspective, and that experience can be both difficult and exciting. We have listened to their questions and concerns as these managers grapple with this new world. This book is the result of their experiences, and ours.

The book is designed for use by a manager (or future manager) who does not have an educational background in financial management. It has long been our philosophy that if you can truly understand how a thing works—whatever it is—then you own it. This book is created around that philosophy. In other words, we intend to make financial management transparent by showing how it works and how a manager can use it.

USING THE BOOK

Users will find examples and exercises covering many types of healthcare settings and providers included. The case study of Metropolis Hospital System is woven throughout the book. Four mini-case studies are provided to give an even broader view of the subjects covered. “Progress Notes” set out learning objectives at the beginning of each chapter. An “Information Checkpoint” segment at the end of each chapter tells the user three things: information needed, where this information can be obtained, and how this information can be used. A “Key Terms” section follows the “Information Checkpoint.” Each of these features displays its own quick-reference icon.

Access to the Web site is shown in Appendix B, “Web-Based and Software Learning Tools.” For users who prefer a calculator, Appendix B provides guidance on where to obtain information on using a business analyst calculator. And for those users who choose neither a computer nor a calculator, instructions are set out so problems can also be worked by hand, with paper and pencil.

New to This Edition

THE THIRD EDITION

This Third Edition continues to provide practical information with examples taken from real life in the healthcare finance world.

For example, we have added:

- Two new chapters about healthcare technology electronic health records because of their relevance today. They contain details and examples about information systems conversions along with the incentives for adoption and the penalties for non-adoption that will affect both facilities and eligible professionals over the next several years.
- A new chapter that includes the concept of inventory. We also expanded the concept of depreciation in this new chapter.
- A new chapter about basic investment terms.
- A new chapter on using comparative data and new sections on sensitivity analysis and estimates, along with expanded sections about forecasts and operating budgets.
- A new case study about automating admissions processes.
- New supplemental material about ICD-10 conversion costs for a hospital.
- Updates throughout the book.

Besides the new electronic templates, the Third Edition Web site also has lists of electronic resources for those who want to take a deeper look at some subjects. (The lists can also be used as a springboard for additional assignments.)

In short, we have continued to work to reveal the basic tools of healthcare finance and make them usable.

Acknowledgments

This book originated during the course of our activity-based costing seminars for Irwin Professional Seminars, when class members kept inserting finance questions into the sessions. The original concept for the book was clarified when Cleo Boulter, then Associate Professor at the University of Texas at Houston Center on Aging, recruited us to teach intensive finance sessions to her midcareer students, an arrangement that continued over a period of years. The needs of these students and their reaction to the material provided the core of the book's First Edition content.

This Third Edition has evolved with the help of numerous instructors and students who have given us feedback: we listened. The input from finance sessions we taught as Adjunct Faculty at Texas Womans' University in Dallas also contributed to shaping this third edition's contents. Our continued gratitude goes to Craig Sheagren, Senior Vice President/CFO, McDonough District Hospital, Macomb, Illinois; and Nancy M. Borkowski, PhD, Professor, Dept. of Professional Management/Health Management, St. Thomas University, Miami, Florida for their encouragement, information, suggestions, and assistance with the original concept of the book; and to John Brockett, Chief Financial Officer, SUMA Health System, Akron, Ohio; Christine Pierce, Partner, The Resource Group, Cleveland, Ohio; and Dr. Frank Welsh, Cincinnati, Ohio, for their ongoing information and suggestions.

Many others also contributed suggestions, recommendations, and information to help shape and refine the initial concept. We continue to acknowledge these individuals, listed below, including their original affiliations:

Ian G. Worden, CPA, Regional Vice President of Finance/CFO, PeaceHealth, Eugene, Oregon

Carol A. Robinson, Medical Records Director, Titus Regional Medical Center, Mt. Pleasant, Texas

John Congelli, Vice President of Finance, Genesee Memorial Hospital, Batavia, New York
Charles A. Keil, Cost Accountant, Genesee Memorial Hospital, Batavia, New York

George O. Kimbro, CPA, CFO, Hunt Memorial Hospital District, Greenville, Texas

Bob Gault, Laboratory Director, Hunt Memorial Hospital District, Greenville, Texas

Ted J. Stuart, Jr., MD, MBA, Northwest Family Physicians, Glendale, Arizona

Mark Potter, EMS Director, Hopkins County Memorial Hospital, Sulphur Springs, Texas
and

Leonard H. Friedman, PhD, Assistant Professor, Coordinator, Health Care Administration Program, Oregon State University, Corvallis, Oregon

Patricia Chiverton, EdD, RN, Dean, University of Rochester School of Nursing, Rochester, New York

xviii **ACKNOWLEDGMENTS**

Donna M. Tortoretti, RNC, Chief Operating Officer, Community Nursing Center, University of Rochester School of Nursing, Rochester, New York

Billie Ann Brotman, PhD, Professor of Finance, Dept. of Economics and Finance, Kennesaw State University, Kennesaw, Georgia