# PROVIDING EFFICIENT, COST-EFFECTIVE, QUALITY HEALTH SOLUTIONS IN THE 21<sup>ST</sup> CENTURY

# PROVIDING EFFICIENT, COST-EFFECTIVE, QUALITY HEALTH SOLUTIONS IN THE 21<sup>st</sup> CENTURY

# **Engaging Cutting Edge Care Technologies**

By

### JOHN ROBERT COLEMAN, BS, M.S.I.E., PH.D.

Associate Professor Ancell School of Business Western Connecticut State University Danbury, Connecticut

### KAREN BECKY ZAGOR, RN, MN

Compassionate Catalyst Oncology Consultant Lakewood, California

# JUDITH ELAINE CALHOUN, MN, Ph.D., A.R.N.P.

Associate Professor and Chair Newman Division of Nursing Emporia State University Emporia, Kansas



CHARLES C THOMAS • PUBLISHER, LTD. Springfield • Illinois • U.S.A.

#### Published and Distributed Throughout the World by

#### CHARLES C THOMAS • PUBLISHER, LTD. 2600 South First Street Springfield, Illinois 62704

This book is protected by copyright. No part of it may be reproduced in any manner without written permission from the publisher.

#### ©2005 by CHARLES C THOMAS • PUBLISHER, LTD.

#### ISBN 0-398-07533-6 (hard) ISBN 0-398-07534-4 (paper)

#### Library of Congress Catalog Card Number: 2004053720

With THOMAS BOOKS careful attention is given to all details of manufacturing and design. It is the Publisher's desire to present books that are satisfactory as to their physical qualities and artistic possibilities and appropriate for their particular use. THOMAS BOOKS will be true to those laws of quality that assure a good name and good will.

#### Printed in the United States of America SM-R-3

#### Library of Congress Cataloging-in-Publication Data

Coleman, John Robert, 1943-

Providing efficient, cost-effective, quality health solutions in the 21st century : engaging cutting edge care technologies / by John Robert Coleman, Karen Becky Zagor, Judith Elaine Calhoun.

p. cm.

Includes bibliographical references and index.

ISBN 0-398-07533-6 -- ISBN 0-398-07534-4 (pbk.)

1. Medical care--Technological innovations. 2. Medical technology. I. Zagor, Karen Becky. II. Calhoun, Judith Elaine. III.Title.

R855.3.C65 2004 362.1'0425--dc22

2004053720

This book is dedicated to my daughter and son-in-law who have provided encouragement and reasons for living a long life–Jennifer and Michael and their two beautiful children, Camryn and Mathew.

J.R.C.

To all individuals who strive to learn more about the delivery of quality health care.

*J.E.C.* 

#### PREFACE

This book is intended as a supplemental text for professional nurses, social workers, physicians, therapists, case managers, health administrators, and other care professionals engaging cutting edge care technologies and innovative organizations that strive to provide efficient, cost-effective, quality health solutions in the twenty-first century for the elderly.

Many of the cost containment concepts, technologies and organizations included in this book are constantly changing *what, how, when, where,* and *who* will be providing health care services and managing the wellness, health promotion, acute, and chronic disease management programs for specific populations. This text contains up-to-date cost containment tools used in different organizational forms of health care organizations including:

- Case Management–CM
- Critical Pathways and Care Maps–CP
- Disease State Management–DSM
- Health Maintenance Organizations–HMOs
- Social Health Maintenance Organizations-SHMO
- · Program of All-inclusive Care of the Elderly-PACE
- Telemedicine and Telehealth

It also contains recent data and information on cost containment tools and managed care strategies, case management techniques, outcomes, and programs introduced and led by mature and forward-looking HMOs, health care benefit management (HCBM) entities, and health care organizations and pharmaceutical companies. Included are seven care and cost containment strategies that are constantly changing the designs of existing care systems, reshaping the roles of health care professionals, and the shapes of organizations in which they are integrated.

Each of these care and cost management techniques is always changing how people perceive care and the vehicles by which services are provided to populations. As we welcome the next century, we all must look in anticipation of the new ways well and sick people will care for themselves and how health care organizations, networks, integrated care organizations and sys-

### viii Providing Efficient, Cost-Effective, Quality Health Solutions

tems of care, and managed care organizations will care for people who are in greatest need of the attention.

John Robert Coleman Karen Becky Zagor Judith Elaine Calhoun

# CONTENTS

Preface	Page
, Chapter	
	INNOVATIVE COST MANAGEMENT OF    HIGH COST DISEASES    Introduction    3    Cost Challenges Caused by the Rise of Chronic Disease    4    Population Growth Increases Costs    Innovative Health Care for Chronically Ill Older Persons:    Results of a National Survey    7    Changes in Health Care Delivery in the Last Decade    8    Programs Emphasizing Chronic Care Needs    8    Case Management Model    9    Critical Pathways: Improving Patient Care with a    Managed Care Focus    10    Disease State Management–DSM    10    Health Maintenance Organizations–SHMOs    11    Social Health Maintenance Organizations–SHMOs    11    Program for All-inclusive Care of the Elderly–PACE    12    Telemedicine and Telehealth    13    The Nursing Challenge to Control Costly Diseases and    Enhance Care Quality  13    References  14    Web Sites  16
2.	CASE MANAGEMENT MODELS

Providing Efficient, Cost-Effective, Quality Health Solutions	
Models of Case Management	22
Hospital-Based Case Manager	
HMO and SHMO-Based Case Manager	
Rural Community-Based Case Manager	
Community-Based Case Manager	
Independent and Private Case Manager	
The Case Management Process	
Six Essential Functions of Case Management	
Assessment	
Developing the Care Plan (Care Planning)	28
Implementation	
Service Coordination	28
Monitoring	29
Evaluation	29
The Roles of a Case Manager	29
Consultant	30
Educator/Teacher	30
Evaluator	31
Facilitator/Coordinator	31
Interpreter	32
Monitor	32
Negotiator	33
Patient Advocate	33
Researcher	33
Risk Manager	34
Qualifications and Required Skills to Become a	
Case Manager	
Everyone Can Benefit From Case Management Services	37
Catastrophic Case Management and Large Case	
Management	
Step 1: The Referral for Case Management	
Step 2: Obtaining Information on the Referral	
Step 3: Conduct an Initial Assessment	
Step 4: Creating the Plan	
Step 5: Developing the Case Management Team	
Step 6: The Team Conference	
Step 7: Establish Goals and Objectives	
Step 8: Implementing the Plan	
Step 9: Monitoring the Plan	44

х

C I I.	
Contents	

Step 10: Follow-up and Amending the Plan.	
Step 11: Closing the Case	
Case Management Documentation and Reports	
On-Site Case Management Services vs. Telephon	
Management	
Effectiveness of Case Management Programs	
Legal Issues for Case Managers	
The Wickline Case	
The Wilson Case	
The Nazy Case	
The DuPont Case	
The Hughs Case	
Summary	
A-1: Letter of Acceptance of Patient for Case	
Management	
A-2: Letter Introducing Case Management C	oncept to
Patient	
A-3: Letter Introducing Case Manager to Att	ending
Physician	
A-4: Letter of Consent and Medical Records	Release
A-5: Initial Report on Case Management	
A-6: Progress Report on Case Management .	
A-7: Case Management Closure and Final Re	eport 66
A-8: Evaluation of Case Management	
References	
Web Sites	
Critical Pathways–Improving Patient Care	
With a Managed Care Focus	
Introduction	
Definition	
Background and History	
The Focus of Critical Pathways–Environments a	
Populations	
Early Results of Critical Pathways	
Content and Elements of a Critical Pathway	
Discharge Planning	
Patient/Family Education	
Consultations	
Activities	

3.

i	Providing Efficient, Cost-Effective, Quality Health Solutions	
	Nutrition/Diet	
	Medication	
	Diagnostic Testing	
	Treatments	
	Assessments	
	Psychosocial	
	Critical Pathways Standardize the Care Process	
	Collaboration in Construction of Critical Paths is	
	Key to Success	
	Steps Necessary to Develop a Critical Pathway	
	Identify the Patient Population	
	Identify Major Care Functions	
	Identify Critical Elements of Care	
	Decide on Progression Intervals	
	Decide on Levels of Care	
	Critical Paths and Outcomes	
	Variance Identification and Analysis	
	System Failures	
	Caregivers Actions	
	Patient Condition	
	Patient Mix	
	Variance Tracking and Analysis	
	Barriers to Implementation	
	Legal Issues	
	Economic and Financial Issues	
	Effectiveness of Critical Pathways	
	Benefits of Clinical Pathways	
	Summary	
	Appendix A: Hip Replacement Case Study-RRMC	
	References	
	Web Sites	
4.	DISEASE STATE MANAGEMENT–DSM	
	Introduction	
	Definition of Disease State Management Approaches	101
	Disease Management Concepts	
	Adoption of DM Approaches	
	Steps to Develop a DM Program	
	The Disease State Management Team	
	Disease Management Team Approach	

xii

Contents
----------

	General Properties of a Good DM Approach	111
	Common Barriers to Implementation	112
	The Acceptance of DM Approaches	
	Costs Down, Outcomes Up	114
	Patient Satisfaction with DM Programs	116
	Cost Issues	
	Quality Issues	119
	Outcome Issues	119
	Legal Issues	119
	Summary	120
	Appendix A: National Jewish Medical and Research Center	122
	References	123
	Web Sites	126
5.	HEALTH MAINTENANCE ORGANIZATIONS-HMOS	127
	Introduction	
	Definition of Managed Care Organization and HMOs	
	Managed Care Organizations-MCOs	
	Health Maintenance Organizations–HMOs	
	Background and History of HMOs	
	Kaiser Family Health Plan	
	Group Health Association	
	Health Insurance Plan of Greater New York	
	Group Health Cooperative of Puget Sound	133
	San Joaquin Medical Foundation	134
	Basic Characteristics of HMOs	
	Types of HMOs	135
	Staff Model HMO	135
	Group Model HMO	137
	Network Model HMO	138
	IPA Model HMO	139
	Mixed Model HMO	140
	National HMO Chains	140
	HMO Point of Service (POS) Plans Compete Against PPOs	141
	Growth of HMOs and Enrollment	142
	Financial Aspects of Managed Care	145
	Cost-Containment Approaches of MCOs	
	Risk Sharing Approaches of HMOs	147
	Risk Model 1	
	Risk Model 2	148

xiii

Risk Model 3	.148
Risk Model 4	.149
Payment Approaches for Managing Unit Costs	.149
Capitation Payments	.150
Per Diem Payments	.151
Case Payments and DRGs	
Primary Care Physician Capitation Plans	.152
Discount Fee-for-Service	.153
Capitation	.154
Carve-Outs	.154
National Committee for Quality Assurance–NCQA	.155
Access and Services	.155
Qualified Providers	.156
Staying Healthy	.156
Getting Better	.156
Living with Illness	.156
Member Satisfaction	.157
Utilization Management Approaches	.159
Report Cards and HMO Accountability	.161
Healthplan Employer Data and Information Set-HEDIS 3.0	
Medicaid HMOs–Growth	.164
Medicare HMOs–Growth	.167
In 2002 More Plans Leave, But PPO Experiment is Opened	.169
Medicare HMOs: Charging More But Often Cutting Back on	
Benefits	.169
Effectiveness of HMOs	.170
Ten Ways HMOs Have Changed During the 1990s	.173
HMOs and the Future Care of the Elderly	
References	.177
Web Sites	.179
SOCIAL HEALTH MAINTENANCE ORGANIZATIONS-	
	.181
Introduction	
Definition of a Social Health Maintenance Organization	
(SHMO)	.183
Background and History	
SHMO Services	
Comparison of SHMO and PACE Benefits	

6.

Enrollment and Population Characteristics of SHMO	
Members	189
SHMO Funding and Payment Mechanisms	189
Early Approaches to SHMO Case Management	191
Case Management Problems in First Generation SHMOs	
Information About Clients	198
Targeting Health Risk Clients	198
Evaluation of First Generation SHMOs Led HCFA to	
Redefine Them	199
Role of Case Management in a Second Generation SHMOs .	199
Geriatric Case Management Teams	200
Marketing and Break-Even Enrollment	201
Second Generation SHMOs and EverCare	
Demise of the Second Generation SHMOs–SHMO II	203
Summary	203
References	
Web Sites	207
PROGRAM OF ALL-INCLUSIVE CARE FOR THE	
ELDERLY-PACE	208
Introduction	
Differences Between SHMO and PACE	
Background and History	
PACE Organization	
Census Growth in PACE and Pre-PACE Programs	
PACE Services	
Intensive Case Management	
Enrollee Characteristics of PACE Members	
Age Distribution	
Race/Ethnic Diversity	220
Medical Diagnoses and Cognition	
Acceptance of the Approach by the Frail Elderly	
PACE Programs	
PACE Service Utilization	222
Center Attendance	223
Primary Care	223
Average Number of Primary Care Encounter Days Per	
Enrollee Per Month	223
Inpatient Hospitalization	224
Nursing Care in the Day Care Center and Home	224

7.

⁄i	Providing Efficient, Cost-Effective, Quality Health Solutions	
	PACE Funding and Payment Mechanisms	225
	Cost Savings	
	Quality of Care	
	$\widetilde{Summary}$	
	References	
	Web Sites	231
8.	TELEMEDICINE AND TELEHEALTH	232
	Introduction	
	Tele-Definitions	233
	Background and History	
	Recent Growth of Telemedicine	236
	Telemedicine Communications Technology	
	Video	237
	Audio	
	Images	
	Medical Records	
	Medical Uses of Telemedicine	
	Teleradiology	
	Telepathology	
	Teledermatolgy	
	Telecardiology	
	Telepresence	
	Robotics	
	Video Teleconferencing	
	Telehealth	
	Telemedicine Technology–Application Areas	
	Home Health Care	
	Prison Health Care	
	Caring for the Inner City: Telemedicine's New Niche	
	Rural Applications	
	Managed Care	
	Advantages of Telemedicine	
	Barriers to Widespread Implementation	
	Licensure of Providers	
	Legal Liability	
	Patient Confidentiality and Privacy	
	Reimbursement Issues	
	Costs and Cost-Effectiveness of Telemedicine	
	Satisfaction with Telemedicine and Telecare	257

xvi

Contents
----------

	Telemedicine in the Future.25Summary.25References.25Web Sites.26	8 9
9.	OUR AGING FUTURE: THE 21st CENTURY NURSING CHALLENGE	4
	Aging Trends	4
	Organized Systems of Care	
	The Challenge of Nursing	6
	References	8
	Web Sites	9
Glossa	Glossary	
Abbre	Abbreviations and Acronyms	
Index		1
About	the Authors	1

# PROVIDING EFFICIENT, COST-EFFECTIVE, QUALITY HEALTH SOLUTIONS IN THE 21<sup>ST</sup> CENTURY

# Chapter One

# INNOVATIVE COST MANAGEMENT OF HIGH COST DISEASES

#### Learning Objectives

After completing this chapter one should be able to:

- Explain why the cost of chronic illness contributes to the majority of health care costs.
- Describe why the rise in chronic disease cost is a tremendous challenge in today's health care market.
- Explain how the changes in demographics affect health care delivery and associated costs.
- Describe the many changes to the health care system since the 1990s.
- Describe the various cost containment tools used to keep health care costs reasonable.
- Describe the role of the nursing profession in minimizing the rising cost.

#### INTRODUCTION

We as a nation are growing older with each passing day. The median age of the nation in the year 1999 was 35.7 (U.S. Bureau of the Census, 1998a) and a person born at that time could live to a ripe age of 75.9 (U.S. Bureau of the Census, 1998b). Since 1900, the percentage of Americans 65 plus years of age has more than tripled (1% in 1900 to 12.7% in 1999) and the number has increased 11 times (from 3.1 million to 34.5 million). In 1999, the age 65–74 age group (18.2 million) was eight times larger than in 1900, but the 75–84 year-old age group (12.1 million) was 16 times larger, and the 85-plus age group (4.2 million) was 34 times larger (Shagan, 2001).

Concomitant to the aging population of the nation is the social and technological imperative to find the causes of all debilitating diseases and the need to retard their advancement and/or symptoms. We want to live longer with high quality and at a reasonable cost. Technological improvement in genetics and pharmaceuticals will undoubtedly transform the way some chronic diseases are identified and managed. Based upon Census Bureau statistics, the projected total cost of Medicare services will nearly double between 1987 and 2020 (Schneider & Guralnik, 1990). This expense causes an escalated quality because the cost of health care in 1990 was \$699.4 million and it is predicted to grow to \$2,176.6 million in 2008, an increase of 67.86 percent. Furthermore, the cost is predicted to be 16.2 percent of GDP by 2008 (Smith, Heffler, Freeland, et al., 1999). The increase in costs comes at a time when simultaneously, 44 million Americans lack health care coverage. Of the 44 million without coverage there is a depressing number of persons over 55 and between the ages of 18 and 30 that have chosen not to purchase health insurance because of the associated reduction of their disposable income. Despite research that suggests the advantages of case management and movement toward a continuum-based care model, many chronically ill remain unsupported (Scott, & Rantz, 1997).

The economic winds are blowing gusts on our delivery care system as well. Hospitals continue to suffer losses and many have had to close their doors (on average 37 hospitals have closed between 1995 and 1997), skilled nursing facilities (many have fallen on hard times and have filed bankruptcy protection in the last two years), HMOs (54% suffered losses in the last two years), and the nursing shortage is worsening. Around the country, the Balanced Budget Act of 1997 has become the scapegoat (Hospital Outlook, 2000).

#### COST CHALLENGES CAUSED BY THE RISE OF CHRONIC DISEASE

Two ongoing trends in American society create great challenges for the future U.S. health care system: the growth of managed care juxtaposed against the growing prevalence of persisting health conditions (Druss, Schlesinger, Thomas, & Allen, 2000). According to William Richardson, chair of the committee that wrote the report, "Crossing the Quality Chasm: A New Health System for the 21st Century," our health care system has three underlying problems: (1) its' failure to use evidence-based medicine; (2) its' inability to place the patient at the center of the system; and (3) a lack of col-

laboration and communication among professions and organizations (Sibbold, 2001). In addition, the U.S. system had been designed to treat acute illness and today the emphasis has shifted to chronic care.

Two major forces today are transforming medical care in the United States. Chronic illness has become the greatest challenge in our population (Hoffman, Rice, & Sung, 1996), accounting for 76 percent of direct medical care costs (Freeborn, Pope, & Mullooly, 1990; Gruenberg, Tompkins, & Porell, 1989). Between 1984 and 1995, the common chronic diseases–arthritis, diabetes, cancer, stroke, and heart disease–became more prevalent among men and women aged 70 years and older (Guttman, 2000). Chronic conditions are not only the leading cause of disability and activity restriction but are also the leading cause of death (Garrison, 2000).

Older persons have at least one chronic condition and many have multiple conditions. More than four of five adults age 65 years and older have at least one chronic condition (Tichawa, 2002). In 1998, approximately 13 percent of the U.S. population experienced some form of activity limitation due to a chronic condition (USDHHS, 2000). The most frequently occurring conditions per 100 elderly in 1995 were: arthritis (49), hypertension (40), heart disease (31), hearing impairments (28), orthopedic impairments (18), cataracts (16), sinusitis (15), and diabetes (13) (AARP, 1999). As a result, a health care system focused on providing acute care is now being asked to effectively handle chronic diseases of a rapidly aging population. Concurrently, the fundamental organization of medical care is changing from fee-for-service to capitation to effectively handle increasing financial pressures.

#### POPULATION GROWTH INCREASES COSTS

The aging of America is, in essence, a success story. The dramatic increase in the number of Americans living to age 65 years, age 85 years, and age 100 years is testimony to the benefit of a host of scientific, clinical, and social advancements (Cassel, 2001). This increase in longevity presents clinicians with a variety of challenges, one being how to make long-term care an increasingly significant aspect of the health care system. As shown in Figure 1-1, the number of people over the age of 65 years will increase from 33.5 million in 1995 to 70 million in 2030 (American Association of Retired Persons (AARP), 1996). Older adults will increase from below 13 percent of the U.S. population in 1995 to 20 percent of the total population by the year 2030 (AARP, 1996). The very old, or those over the age of 85 years are increasing—the most rapidly growing segment in terms of percentage. As the