

Jim Nuovo *Editor*

Chronic Disease Management

 Springer

Chronic Disease Management

Chronic Disease Management

Jim Nuovo, MD

*Professor, Family and Community Medicine
University of California, Davis
Director, Chronic Disease Management Program
University of California, Davis, Health System
Sacramento, CA, USA*

Editor

 Springer

Jim Nuovo, MD
Professor, Family and Community Medicine
University of California, Davis
Director, Chronic Disease Management Program
University of California, Davis, Health System
Sacramento, CA, USA

Library of Congress Control Number: 2006922571

ISBN-10: 0-387-32927-7

ISBN-13: 978-0-387-32927-7

Printed on acid-free paper.

© 2007 Springer Science+Business Media, LLC

All rights reserved. This work may not be translated or copied in whole or in part without the written permission of the publisher (Springer Science+Business Media, LLC, 233 Spring Street, New York, NY 10013, USA), except for brief excerpts in connection with reviews or scholarly analysis. Use in connection with any form of information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed is forbidden.

The use in this publication of trade names, trademarks, service marks, and similar terms, even if they are not identified as such, is not to be taken as an expression of opinion as to whether or not they are subject to proprietary rights.

While the advice and information in this book are believed to be true and accurate at the date of going to press, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

9 8 7 6 5 4 3 2 1

springer.com

Preface

This book is designed to help you deliver a different kind of care to your patients with chronic disease; hopefully, a more effective kind of care. While the “standard tools” are included in each disease-specific chapter (e.g., medications, consensus guidelines for management, and methods of monitoring), the core of this book is about thinking and doing differently. What does that mean? It means to learn and implement a new set of tools that you can use to provide care; tools that you probably had no exposure to during your training or even with years of practice. This book is divided into two sections. This first introduces these tools, for example, the development of a registry, methods to guide patient’s toward more effective self-management, the use of quality improvement interventions, and alternative ways to deliver care (i.e., group visits). The second section focuses on the most common chronic conditions seen in primary care offices. I weighted the amount of discussion to the three most common of these diseases (type 2 diabetes, heart failure, and asthma).

This book is the outcome of a long process that began with concerns in my practice about the quality of care we were giving to our patients. As a residency director of a family practice training program, I felt that too many patients had adverse outcomes related to their chronic diseases. I felt that too many patients were not receiving care consistent with consensus guidelines. I was convinced that we could do better. Fortunately, I had like-minded people in my department. We put together a team to learn about new ways to improve chronic disease management. There were many barriers along the way. I talk about these in the introduction. What never was a barrier was the energy and enthusiasm brought to this effort by all members of the team. To my team (Jane, Sue, Tom, Bridget, Sharon, JoAnn, and Ron), thank you. This project would have ended some years ago were it not for our ability to follow our “lessons learned” and continue to move forward. We have also benefited from leaders at our institution who recognized the importance of this work and gave us their support. To our leaders (Claire Pomeroy, MD, MBA (Vice Chancellor and Dean), Bob Chason, Nabi Mussalam, Phil Raimondi, Deb Gage, and Al Siefkin), thank

you. I would also like to thank the many mentors and pioneers who along the way helped guide and inspire us: Ed Wagner, Tom Bodenheimer, Halstead Holman, Kate Lorig, Gordon Moore, Peter Sobel, and Alan Glasseroff.

Jim Nuovo, MD

Contents

Preface v
Contributors ix

Section I Background

1 Overview of Chronic Disease Management 3
Jim Nuovo

2 Self-Management in Chronic Illness 9
Bridget R. Levich

3 Use of Group Visits in the Treatment of the
Chronically Ill 32
Edward B. Noffsinger

4 Chronic Disease Care: Creating Practice Change 87
Thomas A. Balsbaugh

5 Medication Management in Chronic Diseases 104
Timothy W. Cutler and Marilyn Stebbins

6 Providing Culturally Competent Chronic Disease
Management: Diabetes Mellitus 123
David Stempel and Bruce Allen Chernof

Section II Management of Specific Diseases

7 Type 2 Diabetes 139
Jim Nuovo

8 Asthma 202
Samuel Louie

9	Heart Failure	248
	<i>William Lewis and Jim Nuovo</i>	
10	Osteoarthritis	307
	<i>Ernesto Zatarain</i>	
11	Obesity	327
	<i>Jim Nuovo</i>	
12	Depression	333
	<i>Jim Nuovo</i>	
13	Chronic Pain	346
	<i>Jim Nuovo</i>	
	Index	359

Contributors

Thomas A. Balsbaugh, MD

Assistant Clinical Professor, Department of Family and Community Medicine, University of California, Davis, School of Medicine, Sacramento, CA, USA

Bruce Allen Chernof, MD

Adjunct Associate Professor, Department of Medicine, David Geffen School of Medicine, University of California, Los Angeles, Los Angeles, CA, USA

Timothy W. Cutler, PharmD

Assistant Clinical Professor, Department of Clinical Pharmacy, University of California, San Francisco, School of Pharmacy, San Francisco, CA, USA

Bridget R. Levich, MSN, RN, CDE

Clinical Nurse Specialist, Diabetes, Chronic Disease Management Center, University of California, Davis, Medical Center, Sacramento, CA, USA

William Lewis, MD

Associate Professor, Department of Internal Medicine, Division of Cardiovascular Medicine, University of California, Davis, Medical Center, Sacramento, CA, USA

Samuel Louie, MD

Professor, Department of Medicine, University of California, Davis; Director, University of California, Davis, Asthma Network, Sacramento, CA, USA

Edward B. Noffsinger, PhD

Independent Healthcare Consultant on Group Visits, Santa Cruz, CA, USA

Jim Nuovo, MD

Professor, Family and Community Medicine, University of California, Davis, Director, Chronic Disease Management Program, University of California, Davis, Health System, Sacramento, CA, USA

Marilyn Stebbins, PharmD

Clinical Professor, Department of Clinical Pharmacy, University of California, San Francisco, San Francisco, CA, USA

David Stempel, BS

Medical Student, David Geffen School of Medicine, University of California, Los Angeles, Los Angeles, CA, USA

Ernesto Zatarain, MD

Clinical Associate Professor, Division of Immunology and Rheumatology, Stanford University School of Medicine; Chief, Rheumatology Section, Palo Alto VA Medical Center, Palo Alto, CA, USA

Section I

Background

1 Overview of Chronic Disease Management

JIM NUOVO

I want to go into medicine so that I can help large numbers of patients who are suffering from the effects of chronic diseases. I want to be a member of a multidisciplinary disease management team. I want all members of the team to have well-established roles, roles that take advantage of each of our strengths. I want to use information technology in a way that helps provide better care to each of my patients and to the population of patients I care for. I want access to a registry so that I can determine how my patients are doing and so that I can track clinically meaningful outcomes. I want to be able to review the registry data and implement rapid cycle interventions that can be readily monitored and measured, interventions that are linked in cycles and work toward building a safer and more effective health care system. I want to have evidence-based guidelines embedded in the electronic medical record so that I can provide improved point of service care. I want to find ways to be more effective in helping patients learn more about their disease and how to become better at self-management. I want to be comfortable in using motivational interviewing techniques to support the lifestyle changes that are necessary to improve quality of life and outcomes. I want all of my patients to set their own goals and to use an action plan to manage the complications that uniformly occur in chronic disease. I want to be able to recognize the comorbid conditions that occur in patients with chronic diseases and to assist the patients in coping effectively with these challenges.

How many of you went into medicine with these thoughts in mind? Me neither. Few if any of us went into this profession with the mission and vision to deal with chronic disease. No matter what reason we chose for what we do, we are left with a substantial problem in the care of our patients. The burden of chronic disease is enormous. Almost 80% of all health care expenditures are for the care of chronic disease. Our health care system is not up to the challenge of dealing with this problem.

Our health care system is heavily weighted to dealing with the problems of the urgent, problems that are often “best” managed with the patient in a passive role. As interest in building a more effective health care system

has increased, more information has become available, indicating the serious nature of this problem. The most consistent information is that few providers or practices deliver care that is consistently high quality as measured by consensus guidelines. Study after study, regardless of the underlying disease, has shown generally poor performance in caring for patients with chronic disease. Our disease management team was highly motivated by this challenge. When we started thinking about setting up a disease management program, we were motivated by an abundance of patients with chronic diseases with an abundance of comorbid complications. Actually, we were highly motivated by the belief that “we stink.” Yeah, that was our motto. We were faced with a very large number of patients with chronic problems, mostly diabetes, heart failure, chronic pain, asthma, and depression. We felt overloaded with the number of complex patients with multiple comorbid conditions. It was common to face a patient with diabetes, hypertension, chronic renal failure, hyperlipidemia, and depression in the context of a 15-minute office visit. Many of our patients struggled with substantial barriers of limited English proficiency and with cultural issues that affected “compliance” with our treatment and monitoring recommendations. Sound familiar?

We did the usual things in a practice, using the continuous quality improvement (CQI) model of looking at adverse outcomes in the clinic to address these problems. We did not have a registry, so most of the interventions were actually targeted toward optimizing patient flow or doing random chart audits. It didn’t work. Patient flow got better, but the outcomes for patients with chronic diseases didn’t. Of course, in the beginning of our program we had no guide to know how we were doing. No way to measure the effect of our interventions. No way to know how we were really doing for a given patient and for the population of patients we care for. Ultimately, we made an important discovery that has had a long-lasting impact on the care we deliver.

We participated in a “learning collaborative” that jump-started everything we have done in disease management. We learned about the chronic care model. We learned how to develop a registry. We learned how to use the registry data to perform rapid cycle PDSA (Plan-Do-Study-Act) activities, all designed to improve the quality of care we provided. We learned how to deliver different models of care, the group visit and the planned visit. We learned how to support self-management, understanding that not all patients and not all providers are ready for this change. We learned that these activities represented a true paradigm shift. That is really what this book is all about: how to go from being frustrated and disheartened with the challenges of dealing with chronic disease to a feeling that you can develop effective interventions using the right guide, the right tools.

My guess is that if you are reading this book you are doing so in part because you are concerned with the quality of care you and your colleagues are providing. Remember, you are in good company. Very few of us are

doing a good job when it comes to effectively managing the problems of chronic disease. Many of us have given up. Giving up really seems to have become a problem. To highlight this, let me share a true story from a conference that I went to. I was asked to lead workshops on the management of several chronic diseases. One of the workshops was on the management of type 2 diabetes. I had prepared a case that I thought was really straightforward. The case was that of a patient doing poorly on a two-drug regimen and needing to consider starting insulin. I was also going to use the case to describe the importance of self-management support, a concept presented in some detail in this book. After presenting the case I asked the group if they had any suggestions as to what to do next. The good news with this group was that they were engaged, interested, and uninhibited about expressing their honest and open opinions about how they run their practice. The bad news with this group was that they were engaged, interested, and uninhibited about expressing their honest and open opinions about how they run their practice. So one of the participants raised his hand and said the following: “I’d look the patient right in the eye and say—you can either do what I say or I can give you and your family the number for the local undertaker, cause that’s who you’re gonna need next.” Not only was I impressed with this response but I was equally impressed with the responses of many of the members of the group. “Great idea!” “Yeah, I’m going to give that a try.” Certainly an honest answer. Certainly something that has gone through most of our minds as we care for complex patients who do not seem to be motivated to help themselves. From the point of view of the chronic care model, this workshop was not going very well. So I asked the group, “Have any of you ever tried to make a lifestyle change for yourself, like losing weight, eating a more healthy diet, or starting an exercise program?” Most everyone raised their hands. “How would it have felt to you to have had your physician link some outcome like death or disability or disfigurement if you didn’t get started on this change? Who would feel that this approach is helpful?” No one raised his hand, thank goodness.

Is this story just an aberrancy? An outlier? An article recently appeared in the journal *Diabetes Care* about how physicians respond to their patients’ inadequate glycemic control. In a retrospective cohort of 1,765 patients with diabetes at 30 U.S. academic medical centers, Grant and associates [1] found that the rate at which physicians made appropriate adjustments in medications to properly treat their patients was surprisingly low. For example, fewer than half of patients with elevated HbA1c levels had changes in therapy instituted during the office visit, even when the HbA1c level exceeded 9.0%. Only 10.1% of 208 patients with elevated blood pressure (exceeding 130/80 mmHg) were started on antihypertensive therapy; among those with blood pressures greater than 150/100 mmHg, only 13.9% had therapy initiated. Similarly, physicians failed to initiate lipid-lowering therapy for study participants with elevated low-density lipoprotein levels.

Only 5.6% of patients with levels between 101 and 130mg/dL, 8.7% of those with levels between 130 and 160mg/dL, and 15.4% of those with levels exceeding 160, received lipid-lowering drugs. Just what is the source of this inertia? What are the barriers to patients receiving evidence-based care?

Even if you are among the group of providers who would never talk to a patient using a “threat” as I’ve described previously, there are still so many other barriers to improving the care we provide for chronic disease. We are all too busy. Office visits are often rushed. The urgent needs of the patients take precedence over their chronic problems. It is far too common to have the chronic disease addressed as an “oh by the way” at the end of a visit. This is what Ed Wagner, MD has referred to as the “Tyranny of the Urgent.” The problem seems to be too overwhelming to address. So who can blame anyone for “giving up”? Some of the lessons we have learned from our disease management program have been “pearls” to remember. One of the most important is: “Working harder doesn’t work.” Adding yet another burden to the activities of a day is not something that any of us wants to do. To do better disease management is not a matter of starting earlier and staying later. It won’t work; it’s not sustainable. It is time to consider a system redesign, a paradigm shift. How to do it? The practice components have been described by Hal Holman, MD, who has been involved in assessing the effects of self-management programs for chronic diseases for over 25 years.² These practice components include the following:

1. A registry of patients to invite and monitor participation in disease management activities
2. Use of patients’ planned visits to prepare individual management plans
3. Use of an action plan, developed with each patient, including responsibilities for different members of the team
4. Access to patient self-management education programs
5. Group visits of patients with the physician and selected staff members, during which the interests and concerns of each are raised and mutual learning occurs
6. Remote management capabilities (telephone, e-mail, home monitors)
7. Case management with remote communication based in the team office
8. An electronic medical record to ensure continuity and integration of care

These are the essential ingredients in setting up an effective care program for patients with chronic diseases. This book is designed to provide you with the details needed to develop such an intervention program. These include the background tools, the use of a registry for quality improvement activities, self-management support, group visits/shared medical appoint-

ments/planned visits, and cultural competence. This book also includes a detailed description of interventions for management and monitoring of the most common chronic diseases: diabetes, heart failure, and asthma. Integrated within the content of the disease-specific chapters are themes common to the care of all chronic conditions. They are:

1. Comorbid conditions are common and often affect the ability to achieve optimal care. The most common comorbid condition is depression. Failure to address the effects of depression will usually thwart the impact of any disease management intervention.
2. Self-management skills are the key to maintaining function and improving outcomes.
3. An effective self-management program will provide education and supportive interventions. It should help patients gain skills in problem solving and enhance their confidence in dealing with their condition.
4. When dealing with chronic disease, it is important to assess patients' motivation to deal with their condition. This can be done by asking "How important is it to you to gain better control of your (diabetes, heart failure, asthma, etc.)?" If improved control of the disease is not a high priority, it is critical to determine what the barriers are. Common barriers include psychiatric disease, financial problems, and family stress.
5. In addition to "importance," it is useful to determine how ready the patients are to make the necessary lifestyle changes and how confident they are that they can do something that can benefit their health. You can facilitate this process by helping the patients generate their own short-term goals.
6. Goal setting is an important self-management tool. It is best if the goals are patient generated, short-term, and achievable. We should monitor these goals and recognize our patients' successes, and we should not be judgmental about failures. Use "failures" as an opportunity to explore barriers and to help patients develop a new goal that has a greater chance for success.
7. An action plan can be a means to help patients self-monitor their conditions and determine when an intervention that may prevent a serious adverse event is necessary.
8. Use your registry to develop interventions to address problems with specific patients and the population of patients you care for. When performing rapid cycle PDSA activities, as suggested in *The Improvement Guide*, always ask the following three questions:
 - a. What am I trying to accomplish?
 - b. How will I know that I achieved this goal?
 - c. What are the steps that will help me achieve this goal?
9. Remember that it takes a team. You cannot accomplish, you will not accomplish, sustainable measures of success in dealing with chronic

diseases by acting alone. You must find a way to develop a team, a team in which each member has well-defined roles. Working harder will not work; working smarter will.

From all of us in our disease management program, we hope that you find this book a useful guide for yourself, your team, and your patients, to deal successfully with chronic diseases.

Reference

1. Grant RW, Buse JB, Meigs JB, et al. Quality of diabetes care in U.S. academic medical centers: low rates of medical regimen change. *Diabetes Care* 2005;28:337–442.
2. Lorig K, Holman H, Sobel D, Laurent D, González V, Minor, M. *Living a Healthy Life with Chronic Conditions: Self Management of Heart Disease, Arthritis, Diabetes, Asthma, Bronchitis, Emphysema, and others*. Palo Alto: Boll publishing, 2000.

2

Self-Management in Chronic Illness

BRIDGET R. LEVICH

Summary

1. Self-management is a core component of all chronic disease. All patients self-manage, some more effectively than others.
2. The most effective strategy for chronic disease management comes from an activated team, a team whose “captain” is in fact the person with the chronic illness.
3. When caring for your patients, you should consider reframing your role to that of a health “coach.” A coach:
 - a. Helps guide patients to specific, self-generated, achievable goals
 - b. Assesses patients for their readiness to change and provides appropriate educational resources that match the patients’ needs
 - c. Helps patients develop problem-solving skills
 - d. Understands the relevance of “importance” and “confidence” from the patients’ points of view, particularly when it comes to recommended lifestyle changes
 - e. Understands the need to probe for barriers, including common comorbid conditions such as depression and social/financial problems that can easily derail the most effective, evidence-based clinical guidelines
4. One of the goals when working with patients around self-management is to empower patients to manage their health by emphasizing their central role in their own health care.
5. Everything you can do in your practice to support/promote self-management for your patients will likely have a substantial return on your investment.
6. Some of the tools that you can use to support/promote self-management are the following:
 - a. Team approach with the patient as “captain”
 - b. Assistance with behavior change using the Transtheoretical Model

- c. Motivational interviewing
 - d. Agenda-setting/decision wheels
 - e. Importance/confidence ruler
 - f. Typical day strategy
 - g. Hypothetical look over the fence
 - h. Exploration of costs and benefits
 - i. Appropriate information exchange
 - j. Effective use of assessment tools
 - k. “Cascade of successes”
 - l. Patient-centered care
 - m. Shared medical appointments with a team approach
 - n. Group support
 - o. Goal setting/action planning
 - p. Self-management education/training programs
 - q. Self-monitoring, data management, and patient registries
7. The goal of self-management education/training is to enable patients to take the information that they learn about their illnesses and then solve problems that are meaningful to them.
 8. We need to be aware of our own assumptions when entering into a dialogue with a patient regarding health behavior change. Some of these assumptions may include the following:
 - a. “Now is the right time to consider change.” In fact, a behavior change may not be the priority of the patient, and perhaps the patient may not have even considered a behavior change.
 - b. “If he or she does not decide to change, the interaction has failed.” We need to remember that behavior change is a process. Even if the patient does not create a change plan at this appointment, it may be the beginning of a contemplative stage.
 - c. “This person wants to change.” Perhaps the patient has priorities other than his or her health. Assessment of the patient’s stage of change may provide useful information.
 - d. “A tough approach is always best.” “Scaring” the patient is very rarely a useful approach to effect ongoing behavior change. More effective and successful in the long term is a patient-centered approach in which the person with the illness identifies a behavior he or she wants to modify or change.
 9. The stages of change have been described by Prochaska and colleagues. In the process of considering a behavior change (e.g., starting to exercise, eating a healthier diet, losing weight), there are six stages that a person might go through in order to change a behavior. They are the following:
 - a. Pre-contemplation: no plan to consider making the change within the next 6 months
 - b. Contemplation: intends to make a change within the next 6 months

- c. Preparation: has made some plans to start and intends to begin taking action within the next 30 days
 - d. Action: is ready to implement behavior change
 - e. Maintenance: has changed behavior for longer than 6 months
 - f. Relapse: resumes old behaviors
10. Motivational interviewing is a technique used to support patient empowerment. The spirit of motivational interviewing recognizes that the patients are the experts on their illness experience and that it is the patients who should decide what behavior, if any, should be the focus. The four techniques of motivational interviewing are the following:
- a. Express empathy: Expression of empathy is critical to motivational interviewing. Once we are able to express an understanding of the patients' experience they may feel free to consider a change. When receiving empathetic responses, patients are less likely to feel a need to defend a behavior. Questions such as "What is the hardest thing about diabetes for you?" can be powerful in establishing a dialogue with your patient.
 - b. Develop discrepancy: "Motivation for change occurs when people perceive a discrepancy between where they are and where they want to be." Part of our role is to facilitate an understanding of the long-term effects of a behavior. By empowering patients to understand that a behavior may not be leading them to "where they want to go," they may become more likely to consider changing the behavior. This intervention needs to be gentle and gradual and to enable the patients to recognize the long-term effects of the behavior.
 - c. Do not oppose resistance: Opposing the patients' resistance to change usually leads them to act defensively. You are free to help patients explore alternative behaviors or actions by using their resistance as energy for possibilities. This technique is described as "rolling with resistance."
 - d. Support self-efficacy: When patients feel efficacious with a change, the likelihood that they will continue to attempt more changes is increased. Our role is to help identify patient successes. This can be a very powerful technique in motivating patients to continue behavior change. It is valuable to remember that there is no "right way" to change; when one change is not successful, assist patients to identify alternatives.
11. All patients should be assessed for the importance of changing their behavior and for the confidence that they have that they can accomplish this goal. This can be done with a simple importance and confidence "ruler." For example, a ruler marked 1 to 10 is used to rate the importance of a change to the patient. Number 1 represents no importance at all, and number 10 represents the change as being very