QUALITY BY DESIGN

SECOND EDITION 2

A CLINICAL MICROSYSTEMS APPROACH

MARJORIE M. GODFREY · TINA C. FOSTER · JULIE K. JOHNSON
EUGENE C. NELSON · PAUL B. BATALDEN

JOSSEY-BASS™
A Wiley Brand

QUALITY BY DESIGN

QUALITY BY DESIGN

A Clinical Microsystems Approach

Second Edition

Edited by

Marjorie M. Godfrey
Tina C. Foster
Julie K. Johnson
Eugene C. Nelson
Paul B. Batalden

JOSSEY-BASS™
A Wiley Brand

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.
Published simultaneously in Canada.

Library of Congress Cataloging-in-Publication Data applied for:

Paperback ISBN: 9781119218692

Cover Design: Wiley
Cover Image: © marigold_88/Getty Images

Set in 10/13pt NewBaskerVilleStd by Straive, Chennai, India

10 9 8 7 6 5 4 3 2 1

We dedicate this book to

Our teachers – *we are grateful to have learned from the pioneers/luminaries in the fields of improvement and learning.*

We have been fortunate to learn directly from several of these thought leaders: James Brian Quinn, the "father" of micro-meso-macrosystem thinking, Parker Palmer, Karl Weick, Don Berwick, Staffan Lindblad, Maureen Bisognano, Atul Gawande, Brenda Zimmerman, Trish Greenhalgh, Jody Hoffer Gittell, and Edgar Schein. Through their writings, we have benefited from other thought leaders such as W. Edwards Deming, Florence Nightingale, Avedis Donabedian, and Donald Schön.

We are also grateful to the members of the clinical microsystem, including members of the communities who coproduce care and help us co-design systems that will provide the right care, at the right time, at the right place, every time.

Our families Our loved ones who support our passion and pursuit for excellence in health care.

CONTENTS

TABLES, FIGURES, AND EXHIBITS

Tables

Figures

Exhibits

FOREWORD

Paul B. Batalden, MD; Eugene C. Nelson, DSc, MPH

Introduction

The meeting was about making real change in U.S. healthcare services. Professor Diane Meier, Director of the Center to Advance Palliative care and expert on palliative medicine, presented the story of the development of palliative care. As she reflected on the progress made in the quality of health care, she identified at least seven contributing levers for change:

1. The "business" case
2. The "quality" case
3. Social marketing to create specific audience awareness
4. Clinician training
5. Payment
6. Regulation, accreditation, certification
7. Policy change

Quality by Design, second edition, helps with each of these levers. It offers insights that can help you build the "quality" case, and it offers the basic information that can form necessary clinician education and training. It indirectly contributes to each of the other levers by bringing the basic unit where professionals and individual patients, families and communities meet (the clinical microsystem) into sharp focus.

Context and Importance of Clinical Microsystems

This book describes how the real work of healthcare services gets done and how that work can be improved. It begins with the recognition that healthcare service today is not "soloist" work. Clinical microsystems are groups of professionals and patients who regularly use information and technology to help them work together to realize shared aims. Effective clinical microsystems are based on trust and communication that builds a positive patient-professional relationship. Together, the microsystem groups can work to help patients flourish and minimize the burden of illness. Microsystems form the basic building blocks for modern healthcare service.

When the first edition of this book was written, we had the deep belief that healthcare service professionals actually have two jobs: to do their work and to improve their work. The addition of practical improvement "know-how" ensures that the healthcare professionals of today and tomorrow will be ready to lead the changes needed. We believe that this second edition has benefitted significantly from the reflections and experiences of hundreds of people and can help practitioners learn and master the basics of improvement as they put them to use for the benefit of the patients they serve.

The Clinical Microsystem: A Perspective and an Approach to Improvement

Clinical microsystems do not need to be "installed" or "implemented" – they already exist. However, their performance and functional effectiveness vary substantially. The first edition of this book suggested several ways that clinical microsystems might be recognized and improved. Since that book, many have engaged in the job of improving these small systems, and much has been written and spoken about their efforts. New insights, new frames, and new data have emerged. This version brings together these new insights and combines them with the introductions found in the first edition. This book provides today's healthcare leaders, practicing clinicians, and clinical learners with what they need to get started on the road to measurably improve healthcare services in a way that can be sustained and further improved upon.

The first part of the book offers a panoramic and refreshed view of quality improvement and includes useful theoretical frameworks, important principles, practical tools, and powerful techniques, often in the context of real-world cases. It covers fundamentals such as patient-centered care, patient safety, and quality measurement, and introduces emerging issues such as the co-production of health

and healthcare services, integration of care across different levels of the system, and building rich information environments enabled by information technology.

The second part of the book provides specific guidance and a "path-forward" curriculum. Of particular note is the advancement of clinical microsystems to mesosystems of care since people usually receive care in more than one microsystem during episodes of care. Leaders at all levels of the healthcare system can use it to successfully integrate quality improvement into the daily work of clinical professionals and support staff who serve all kinds of patients with all kinds of health-related needs.

Editors and Authors

This second edition of *Quality by Design* was directed by three editors who are known for leading, teaching, and writing about quality improvement in the frontlines of care. Marjorie M. Godfrey (PhD, MS, BSN, FAAN) and Tina C. Foster (MD, MPH, MS) began working in the 1990s as quality improvement leaders and teachers at Dartmouth, which continues to be their professional home. Julie K. Johnson (MSPH, PhD) received her doctorate degree from Dartmouth and enjoys a distinguished career in quality and safety working as a professor and researcher. She is currently based at the Feinberg School of Medicine in Chicago, Illinois. We have had the privilege of working very closely with the editors and believe they have produced a wonderful book.

They have enlisted the aid of a diverse group of authors with wide-ranging, real-world experience and strong credentials in healthcare service improvement and innovation. The authors have brought their firsthand knowledge and worldwide experience about healthcare service and its improvement into each of the book's chapters.

Conclusion

Today, we recognize the need to build quality improvement "know-how" into the education of tomorrow's healthcare professionals – the doctors and nurses and allied health professionals of the future. We also recognize the need to build this same quality improvement "know-how" into the work of busy clinicians. This work and the knowledge of clinical microsystems make it possible for everyday medical practices and clinical units to be improved from "the inside out." Those are the improvements likely to last. Go for it.

PREFACE

Marjorie M. Godfrey, PhD, MS, BSN, FAAN; Tina C. Foster, MD, MPH, MS; Julie K. Johnson, MSPH, PhD

This second edition of *Quality by Desig*n is about both clinical microsystems – the place where patients, families, and care teams meet – *and* other systems in health care, primarily mesosystems, which comprise multiple microsystems that (ideally) work together for a common aim. It is about what leaders at all levels need to know and do to create the conditions for excellent care at the front line. Is the care correct? Timely? Caring? Desired? Efficient? Is the care coproduced with patients and families in a way all parties can support? These questions are answered millions of times a day as real patients and families interact with real teams in real clinical microsystems and mesosystems. The experience by people in these interactions can range from "perfect" to "dreadful" (and everything in between).

In reading and using this book, we hope you will make discoveries about microsystems *and* mesosystems. We sincerely hope you will use the tools and processes and apply the lessons in your actual care settings; discuss the concepts with colleagues, patients, and families; and learn from your experiments.

What is a Clinical Microsystem?

A clinical microsystem is many things serving many purposes to many people.

A locus of professional formation: The place where people learn how to become competent healthcare professionals who work together and continue to develop

over time. At the heart of the development of the caring and competent healthcare professional is the integration of the learning of "the head, the hands, and the heart" with the ability to take action to values.

A living system laboratory: A place to test changes in care design and delivery and to observe and work with complexity. Clinical micro- and mesosystems are living, complex adaptive systems that have simple rules, autonomous but interdependent agents, patterns of ordered relationships, and processes. Micro- and mesosystems offer opportunities to understand the work of small delivery systems in their natural context. While some problems they face are simple, many are complicated and complex.

A source of workforce motivation or alienation: The place where pride in work flourishes or flounders. Clinical microsystems are the locus of most workforce dissatisfiers and many genuine motivators for pride and joy in work. The hygiene factors in work, identified long ago by Herzberg (1987), such as work policy, administration, supervision, interpersonal relations, and working conditions, are often mandated by the macrosystem, yet are largely made manifest in the microsystems. So too are the motivating factors, such as the work itself, responsibility, recognition, and sense of achievement.

A building block of health care: The place that connects with other microsystems to form a continuum of care (mesosystem). In primary, secondary, and tertiary care settings, these small systems connect the core competencies of health professionals to the needs of patients, families, and communities. In isolation or in concert with other microsystems, the clinical microsystem makes it easy or difficult to do the right thing. Microsystems exist – not because we have installed them – but because they are where real healthcare work gets done. The idea that patients and providers are members of the same system is not new. In the 1930s, the famed physiological biochemist L. J. Henderson noted that patients and their caregivers were best thought of as members of the same system (Henderson, 1935).

The home of clinical policy in use: The place where policies are enacted and used in actual care. Much has been made of formal guidance for caregivers from the aphorisms of Hippocrates to today's guidelines, protocols, pathways, and evidence syntheses. Often, however, this formal guidance is the guidance we espouse but do not practice. Clinical microsystems have policies in use about access, about the use of information and telecommunication technologies to offer care, about the daily use of science and evidence, about staffing and the continuing development of people, and more. Sometimes a policy-in-use is written, sometimes not. Debates often rage about the espoused policies, whereas the policies in use often remain misunderstood and unexamined.

A maker of healthcare value and safety: The place where costs are incurred and reliability and safety succeed or fail. Clinical microsystems, like other systems, can make

it easy to do the right thing. Microsystems that work as high-reliability organizations, similar to those described by Weick and colleagues, are "mindful" of their interdependent interactions (Weick, 2002; Weick and Sutcliffe, 2001).

The facilitator of patient satisfaction: The place where patients and families coproduce care with staff and experience that care as meeting or not meeting their needs. Clinical microsystems are the locus of control for many, if not most, of the variables that account for patient satisfaction with health care. Ensuring that patients get access when they want and need it should be a goal of the scheduling processes of the microsystem. Making needed information readily available should be a priority of the microsystem. A culture that reflects genuine respect for the patient and careful listening to what patients have to say results in social learning for the microsystem. The patterns of staff behavior that the patients perceive and interpret as meeting their unique needs (or not) are generated at the level of the microsystem (Schein, 1999).

Microsystems and mesosystems are critically important to patients, families, healthcare professionals, and the communities they serve. However, they are often not recognized in daily practice and improvement, and we felt it was therefore imperative to write a second edition of this book, updating it with new considerations about mesosystems and ways of working together. In doing so, we hope that the reality and the power of systems thinking in general – and clinical microsystem thinking in particular – can be unleashed and popularized, so that outcomes and value can be improved continuously (from the inside out and from the bottom up) and health professionals at all organizational levels will have a better chance of having their everyday work in sync with their core values and their strong desire to do the right thing well.

References

Henderson, L. J. "Physician and Patient as a Social System." *New England Journal of Medicine,* 1935, 212, 819-823.

Herzberg, F. "One More Time: How Do You Motivate Employees?" *Harvard Business Review,* September–October 1987, p. 109-120.

Schein, E. H. *The Corporate Culture Survival Guide: Sense and Nonsense About Culture Change.* San Francisco: Jossey-Bass, 1999.

Weick, K. E. "The Reduction of Medical Errors Through Mindful Interdependence." In M. M. Rosenthal and K. M. Sutcliffe (eds), *Medical Error: What Do We Know? What Do We Do?* San Francisco: Jossey-Bass, 2002, 177-199.

Weick, K. E., and Sutcliffe, K. M. *Managing the Unexpected: Assuring High Performance in an Age of Complexity.* San Francisco: Jossey-Bass, 2001.