

THIRD EDITION

Health Program Planning and Evaluation

*A Practical, Systematic Approach for
Community Health*

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Preface to the Third Edition

The third edition of *Health Program Planning and Evaluation* has stayed true to the purpose and intent of the first and second editions. This advanced-level text is written to address the needs of professionals from diverse health disciplines who find themselves responsible for developing, implementing, or evaluating health programs. The aim of the text is to assist health professionals to become not only competent health program planners and evaluators, but also savvy consumers of evaluation reports and prudent users of evaluation consultants. To that end, the text includes a variety of practical tools and concepts necessary to develop and evaluate health programs, presenting them in language understandable to both the practicing and novice health program planner and evaluator.

Health programs are conceptualized as encompassing a broad range of programmatic interventions that span the social-ecological range from individual-level to population-level programs. Examples of programs cited throughout the text are specific, yet broadly related to improving health, and reflect the breadth of public health programs. Maintaining a public health focus provides an opportunity to demonstrate how health programs can target different levels of a population, different determinants of the health problem, and different strategies and interventions to address the health problems. In addition, examples of health programs and references are selected to pique the interests of the diverse students and practicing professionals who constitute multidisciplinary program teams. Thus, the content and examples presented here are relevant to health administrators, medical social workers, nurses, nutritionists, pharmacists, public health professionals, physical and occupational therapists, and physicians.

This textbook grew from my own teaching experiences with both nurses and public health students and their need for direct application of the program planning and evaluation course content to their work and lives. Available textbooks have a social services orientation, but little direct relevance to the health programs with which nurses and public health students are familiar. The environment of today requires that programs be provided through community-based healthcare settings to address broad public health issues and expand the individual to population focus. The distinction between individual patient health and behavior and population health requires special attention so that students from clinical backgrounds can learn to think and plan in terms of aggregates and populations.

In most graduate health professions programs, students are required to take a research methods course and a statistics course. Therefore, this evaluation text avoids duplicating content related to research methods and statistics, while addressing and extending that content into health program development, implementation, and evaluation. In addition, because total quality management and related methodologies are widely used in healthcare organizations, areas of overlap between quality improvement methodologies and traditional program evaluation approaches are discussed. This includes ways that quality improvement methodologies complement program evaluations. Sometimes evaluations are appropriate; at other times they are not. Enthusiasm for providing health programs and performing evaluation is tempered with thoughtful notes of caution, in hopes that students will avoid potentially serious and costly program and evaluation mistakes.

UNIQUE FEATURES

Three unique features serve to distinguish this text from other program planning and evaluation textbooks: use of the public health pyramid, consistent use of a model of the program theory throughout the text, and role modeling of evidence-based practice. These features have been maintained in the third edition.

The public health pyramid explains how health programs can be developed for individuals, aggregates, populations, and service delivery systems. Use of the pyramid is also intended as a practical application of the ecological perspective that acknowledges a multilevel approach to addressing health problems. The public health pyramid contains four levels: direct services to individuals, enabling services to aggregates, services provided to entire populations, and, at the base, infrastructure. In this textbook, the pyramid is used as an organizing structure to summarize the content of each chapter in the “Across the Pyramid” sections. In these sections, specific attention is paid to how key concepts in a given chapter might vary across the pyramid levels.

This approach to summarizing the chapter content reinforces the perspective that enhancing health and wellbeing requires integrated efforts across the levels of the public health pyramid. That health program development and evaluation is relevant for programs targeted to individuals, aggregates, populations, and service delivery systems is a particularly germane means of tailoring program plans and evaluation designs that are congruent with the level at which the program is conceptualized. Hopefully, using the pyramid also helps health professionals begin to value their own and others' contribution within and across the levels and to transcend disciplinary boundaries.

The second unique feature of this text is that one conceptual model of program planning and evaluation is used throughout the text: the program theory. The program theory is like a curricular strand, connecting content across the chapters, and activities throughout the planning and evaluation cycle. The program theory, as a conceptual model, is composed of elements. Articulating each of the component elements of the program theory sharpens the student's awareness of what must be addressed so as to create an effective health program. One element of the program theory is the effect theory, which focuses on how the intervention results in the program effects. The effect theory had its genesis in the concepts of action and intervention hypotheses described by Rossi and Freeman;¹ those concepts were dropped from later editions of their text.² I believe these authors were onto something with their effort to elucidate the various pathways leading from a problem to an effect of the program. In this third edition, Rossi and colleagues' ideas have been updated using the language of moderating and mediating factors and emphasizing the intervention mechanisms that make it effective. Their approach is used throughout this textbook as the effect theory portion of the program theory. The effect theory describes relationships among health antecedents, causes of health problems, program interventions, and health effects. The hypotheses that comprise the effect theory need to be understood and explicated to plan a successful health program and to evaluate the "right" elements of the program. The usefulness of the effect theory throughout the planning and evaluation cycle is highlighted throughout this text; for example, the model is used as means of linking program theory to evaluation designs and data collection. The model becomes an educational tool by serving as an example of how the program theory is manifested throughout the stages of planning and evaluation, and by reinforcing the value of care-

¹ Rossi, P., & Freeman, H. (1993). *Evaluation: A systematic approach* (5th ed.). Thousand Oaks, CA: Sage Publications

² Rossi, P., Freeman, H., & Lipsey, M. (1999). *Evaluation: A systematic approach* (6th ed.). Thousand Oaks, CA: Sage Publications

fully articulating the causes of health problems and consequences of programmatic interventions. Experience with students has shown that, while they often have an intuitive sense of the connection between their actions and outcomes, they are not skilled at articulating those connections in ways that program stakeholders can readily grasp. The effect theory and the process theory—the other main element of the program theory—provide a basis from which to identify and describe these connections.

The third unique feature of this text is the intentional role modeling of evidence-based practice. Use of published, empirical evidence as the basis for practice—whether clinical practice or program planning practice—is the professional standard. Each chapter of this book contains substantive examples drawn from the published scientific health and health-related literature. Relying on the literature for examples of programs, evaluations, and issues is consistent with the espoused preference of using scientific evidence as the basis for making programmatic decisions. Each chapter offers multiple examples from the health sciences literature that substantiate the information presented in the chapter.

ORGANIZATION OF THE BOOK

The book is organized into six sections, each covering a major phase in the planning and evaluation cycle. Chapter 1 introduces the fictitious city of Layetteville and the equally fictitious Bowe County. In subsequent chapters, chapter content is applied to the health problems of Layetteville and Bowe County so that students can learn how to use the material on an ongoing basis. In several chapters, the case study is used in the “Discussion Questions and Activities” section to further provide the student with an opportunity to practice applying the chapter content. In recognition of the e-availability of parts of books, each use of the Layetteville case stands on its own in reference to the chapter’s content.

Section I explores the context in which health programs and evaluations occur. Chapter 1 begins with an overview of definitions of health, followed by a historical context. The public health pyramid is introduced and presented as an ecological framework for thinking of health programs. An overview of community is provided and discussed as both the target and the context of health programs. The role of community members in health programs and evaluations is introduced, and emphasis is given to community as a context and to strategies for community participation throughout the program development and evaluation process. Chapter 2 focuses on the role of diversity in the planning and evaluation cycle and its effects on the delivery and evaluation of health programs. Although a discussion of diversity-related

issues could have been added to each chapter, the sensitive nature of this topic and its importance in ensuring a successful health program warranted it being covered early in the text and as a separate chapter. Cultural competence is discussed, particularly with regard to the organization providing the health program and the program staff.

Section II contains three chapters that focus on the task of defining the health problem. Chapter 3 covers planning perspectives and the history of health program planning; it also introduces five planning systems that exist for public health, such as MAPP. Effective health program developers understand that approaches to planning are based on assumptions. These assumptions are exemplified in six perspectives that provide points of reference for understanding diverse preferences for prioritizing health needs and expenditures and, therefore, for tailoring planning actions to best fit the situation. Chapter 4 begins with a review of perspectives on conducting a community needs assessment. Building on this review, five types of assessments are discussed as foundational to decision making about the future health program. Essential steps involved in conducting a community health and needs assessment are outlined as well.

Chapter 5 expands on key elements of a community needs assessment, beginning with a review of the data collection methods appropriate for a community needs assessment. This discussion is followed by a brief overview of key epidemiological statistics. Using those statistics and the data, the reader is guided through the process of developing a causal statement of the health problem. This causal statement, which includes the notion of moderating and mediating factors in the pathway from causes to problem, serves as the basis for the effect theory of the program. Once the causal statement has been developed, prioritization of the problem is needed; four systems for prioritizing in a rational manner are reviewed in Chapter 5.

Following prioritization comes planning, beginning with the decision of how to address the health problem. In many ways, the two chapters in Section III form the heart of planning a successful health program. Unfortunately, students generally undervalue the importance of theory for selecting an effective intervention and of establishing target values for objectives. Chapter 6 explains what theory is and how it provides a cornerstone for programs and to evaluations. More importantly, the concept of intervention is discussed in detail, with attention being paid to characteristics that make an intervention ideal, including attention to intervention dosage. Program theory is introduced in Chapter 6 as the basis for organizing ideas related to the selection and delivery of the interventions in conjunction. The effect theory element of the program theory is introduced and the components of the effect theory explained. Since the effect theory is so central to having an effective program intervention and the subsequent program evaluation, it is discussed in conjunction with several

examples from the Layetteville and Bowe County case. Chapter 7 goes into detail on developing goals and objectives for the program, with particular attention devoted to articulating the interventions provided by the program. A step-by-step procedure is presented for deriving numerical targets for the objectives from existing data, which makes the numerical targets more defensible and programmatically realistic. In the third edition, greater attention is given to distinguishing between process objectives and outcome objectives through the introduction of TAAPS (Timeframe, Amount of what Activities done by which Program Staff/Participants) and TREW (Timeframe, what portion of Recipients experience what Extent of Which type of change) as mnemonics.

Section IV deals with the task of implementing a health program. Chapter 8 provides an in-depth review of key elements that constitute the process theory element of the program theory—specifically, the organizational plan and services utilization plan. The distinction between inputs and outputs of the process theory is highlighted through examples and a comprehensive review of possible inputs and outputs. Budgeting for program operations is covered in this chapter as well. Chapter 9 is now devoted entirely to fiscal data systems, including key aspects of budgeting, and informatics. Chapter 10 details how to evaluate the outputs of the organizational plan and the services utilization plan. The practical application of measures of coverage is described, along with the need to connect the results of the process evaluation to programmatic changes. Program management for assuring a high-quality program that is delivering the planned intervention is the focus of Chapter 11.

Section V contains chapters that are specific to conducting the effect evaluations. These chapters present both basic and advanced research methods from the perspective of a program effect evaluation. Here, students' prior knowledge about research methods and statistics is brought together in the context of health program and services evaluation. Chapter 12 highlights the importance of refining the evaluation question and provides information on how to clarify the question with stakeholders. Earlier discussions about program theory are brought to bear on the development of the evaluation question. Key issues, such as data integrity and survey construction, are addressed with regard to the practicality of program evaluation. Chapter 13 takes a fresh approach to evaluation design by organizing the traditional experimental and quasi-experimental designs and epidemiological designs into three levels of program evaluation design based on the design complexity and purpose of the evaluation. The discussion of sampling in Chapter 14 retains the emphasis on being practical for program evaluation, rather than taking a pure research approach. However, sample size and power are discussed, as these factors have profound relevance to program evaluation. Chapter 15 reviews statistical analysis of data, paying special

attention to variables from the effect theory and their level of measurement. The data analysis is linked to interpretation, and readers are warned about potential flaws in how numbers are understood. Chapter 16 provides a review of qualitative designs and methods, especially their use in health program development and evaluation.

The final section, Section VI, includes just one chapter. Chapter 17 discusses the use of evaluation results when making decisions about existing and future health programs. Practical and conceptual issues related to what ethics program evaluators face are addressed. This chapter also reviews ways to assess the quality of evaluations and the professional responsibilities of evaluators.

Each chapter in the book concludes with a “Discussion Questions and Activities” section. The questions posed are intended to be provocative and to generate critical thinking. At a graduate level, students need to be encouraged to engage in independent thinking and to foster their ability to provide rationales for decisions. The discussion questions are developed from this point of view. In the new “Internet Resources” section, links are provided to Websites that are related to and support the content of the chapter. These Websites have been carefully chosen to be stable and reliable sources.

ADDITIONS AND REVISIONS IN THE THIRD EDITION

The third edition of *Health Program Planning and Evaluation* represents continuous improvement, with corrections and updated references. Classical references and references that remain state-of-the-art have been retained.

The third edition has retained the original intent—namely, to provide students with the ability to describe a working theory of how the intervention acts upon the causes of the health problem and leads to the desired health results. In this edition, the terminology used in the effect theory has been modified to be consistent with the terms used in theory testing and statistical analyses. The new chapter on data systems for fiscal issues and programmatic tracking (Chapter 9) expands on content in previous editions. The proliferation of health information technology provides opportunities for improved planning, monitoring, and evaluation of program, but requires some basic skills that are addressed in this new chapter.



Acknowledgments

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List of Acronyms

ABCD	Asset-based community development
ACA	Affordable Care Act
AEA	American Evaluation Association
AHRQ	Agency for Healthcare Research and Quality
ANOVA	Analysis of variance
APEX-PH	Assessment Protocol for Excellence in Public Health
APHA	American Public Health Association
BPRS	Basic priority rating system
BRFSS	Behavioral Risk Factor Surveillance System
BSC	Balanced Score Card
CAHPS	Consumer Assessment of Health Plans
CARF	Commission on Accreditation of Rehabilitation Facilities
CAST-5	Capacity Assessment of Title-V
CBA	Cost-benefit analysis
CBPR	Community-based participatory research
CEA	Cost-effectiveness analysis
CER	Cost-effectiveness ratio
CFR	Code of Federal Regulations
CDC	Centers for Disease Control and Prevention
CHIP	Community Health Improvement Process
CI	Confidence interval
CPT	Current Procedural Terminology
CQI	Continuous quality improvement
CUA	Cost-utility analysis
DALY	Disability-adjusted life-year

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DHHS	U.S. Department of Health and Human Services
DSM-IV	<i>Diagnostic and Statistical Manual of Mental Disorders</i> , Fourth Edition
EBM	Evidence-based medicine
EBP	Evidence-based practice
EHR	Electronic health record
EMR	Electronic medical record
FTE	Full-time equivalent
GAO	U.S. Government Accountability Office
GNP	Gross National Product
GPRA	Government Performance and Results Act
HEDIS	Healthcare Effectiveness Data and Information Set
HIPAA	Health Insurance Portability and Accountability Act
HIT	Health information technology
HMOs	Health maintenance organizations
HRQOL	Health-related quality of life
HRSA	Health Resources and Services Administration (part of DHHS)
i-APP	Innovation–Adolescent Preventing Pregnancy (Program)
ICC	Intraclass correlation
IRB	Institutional review board
JCAHO	Joint Commission on the Accreditation of Healthcare Organizations
MAPIT	M obilize the community, A ssess the health status, P lan the program, I mplement the program, and then T rack the outcomes
MAPP	Mobilizing for Action through Planning and Partnership
MBO	Management by objectives
MCHB	Maternal and Child Health Bureau (part of HRSA)
NACCHO	National Association of City and County Health Officers
NAMI	National Alliance on Mental Illness
NCHS	National Center for Health Statistics
NCQA	National Commission on Quality Assurance
NFPS	National Family Planning Survey
NHANES	National Health and Nutrition Examination Survey
NHIS	National Health Interview Survey
NIH	National Institutes of Health
NPHPS	National Public Health Performance Standards
OHRP	Office for Human Research Protections
OMB	Office of Management and Budgeting
OR	Odds ratio

PACE-EH	Protocol for Assessing Excellence in Environmental Health
PAHO	Pan American Health Organization
PATCH	Planning Approach to Community Health
PDA	Personal digital assistant
PDCA	Plan-Do-Check-Act
PEARL	Property, economic, acceptability, resource, legality system
PERT	Program Evaluation and Review Technique
PPIP	Putting Prevention into Prevention
PRECEDE	Predisposing, Reinforcing, and Enabling Factors in Community Education Development and Evaluation (model)
PSA	Public service announcement
QALY	Quality-adjusted life-year
RAR	Rapid assessment and response
RARE	Rapid assessment and response and evaluation
RE-AIM	Reach, Effectiveness, Adoption, Implementation, and Maintenance model
RR	Relative risk
SAMHSA	Substance Abuse and Mental Health Services Administration
SCHIP	State Child Health Insurance Program
SES	Socioeconomic status
SMART	Specific, measurable, achievable, realistic, and time (objective)
TAAPS	Timeframe, Amount of Action by which Program Staff/Participants
TQM	Total quality management
TREW	Timeframe, what portion of Recipients experience what Extent of Which type of change
UOS	Units of service
WHO	World Health Organization
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children
YHL	Years of healthy life
YLL	Years of life lost
YPLL	Years of potential life lost

