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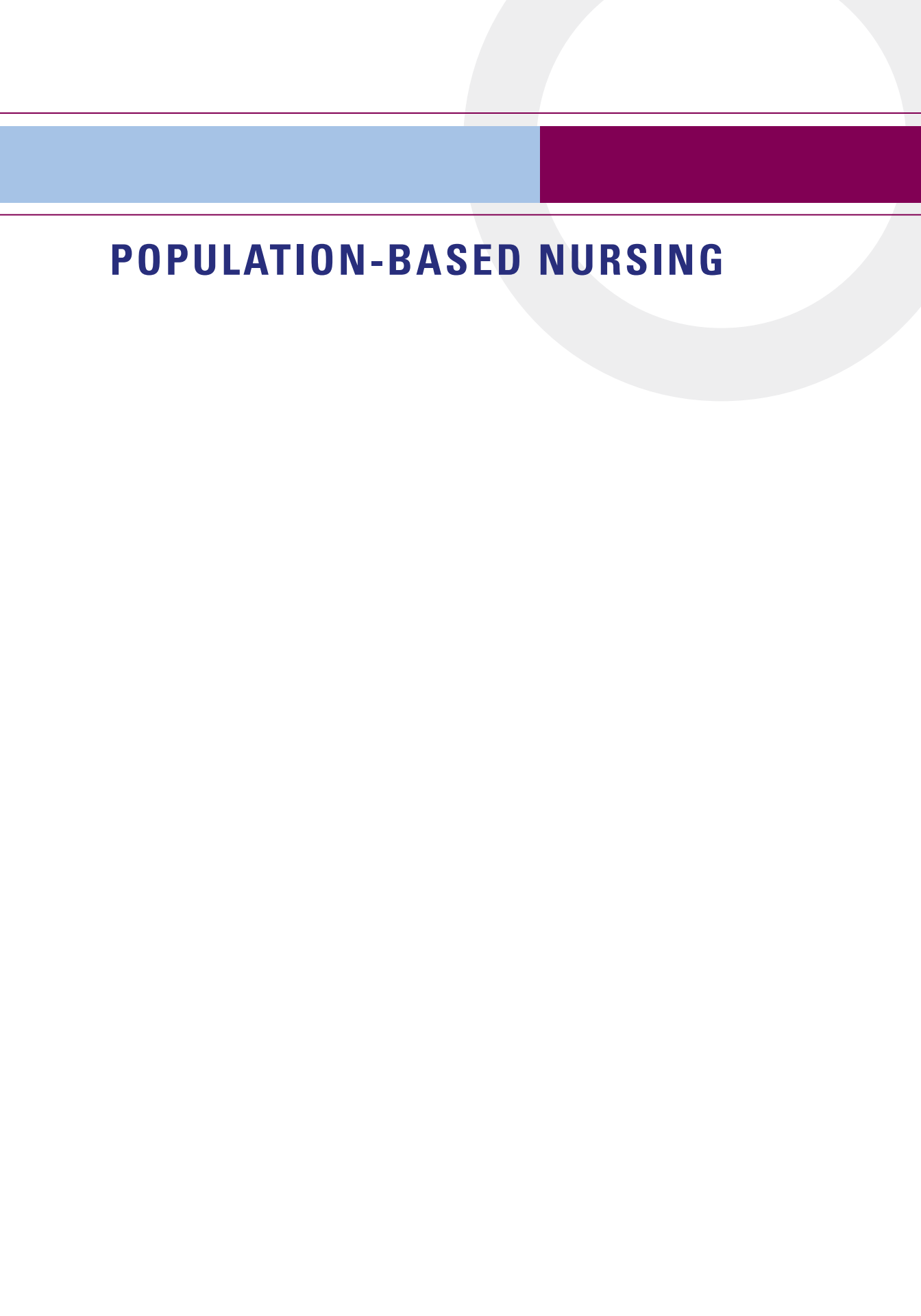
EDITORS

Population-Based NURSING



Concepts and
Competencies for
Advanced Practice

Fourth Edition



POPULATION-BASED NURSING

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Editors



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This book is dedicated to all the nurses who worked on the front line of the COVID-19 pandemic, providing care and compassion in often treacherous conditions. Thank you.

ALCC, BAN, AEE

CONTENTS

<i>Contributors</i>	<i>xi</i>
<i>Foreword</i> Linda Flynn, PhD, RN, FAAN	<i>xiii</i>
<i>Preface</i>	<i>xv</i>
<i>Acknowledgments</i>	<i>xxi</i>
<i>Springer Publishing Resources</i>	<i>xxiii</i>

1. Introduction to Population-Based Nursing 1

Ann L. Cupp Curley

Introduction	1
Background	2
Defining Populations	6
Using Data to Target Populations and Aggregates at Risk	7
Alcohol	7
Obesity	8
Health and the Social Environment	10
Population Strategies in Acute Care	12
Suicide	12
Chronic Conditions	13
Summary	15
Exercises	17
References	18

2. Principles of Public and Community Health 21

Karen T. D'Alonzo

Introduction	21
Background	22
Social Determinants of Health	24
Objectives of Public Health	25
Cost-Saving or Cost-Effective?	28
Public Health Ethics	29
Public Health Methods	35
Summary	35
Exercises and Discussion Questions	37
References	38

3. Identifying Outcomes in Population-Based Nursing 40*Alyssa E. Erikson*

Introduction	40
Identifying and Defining Population Outcomes	41
National Healthcare Objectives	53
Summary	62
Exercises and Discussion Questions	63
References	64
Internet Resources	68

4. Epidemiological Methods and Measurements in Population-Based Nursing**Practice: Part I 69***Ann L. Cupp Curley*

Introduction	69
The Natural History of Disease	70
Prevention	73
Causation	75
Methods of Analysis	76
Descriptive Studies	90
Analytic Epidemiology	92
Summary	100
Exercises and Discussion Questions	101
References	104

5. Epidemiological Methods and Measurements in Population-Based Nursing**Practice: Part II 107***Ann L. Cupp Curley*

Introduction	107
Errors in Measurement	107
Confounding	112
Interaction	114
Randomization	114
Data Collection	115
Causality	116
Scientific Misconduct (Fraud)	118
Study Designs	119
Databases	123
Summary	124
Exercises and Discussion Questions	126
References	128

6. Applying Evidence at the Population Level 130*Vera Kunte*

Introduction	130
Asking the Clinical Question	131

The Literature Review	135
Assessing the Evidence	137
Integration of Evidence Into Practice	149
Summary	154
Exercises and Discussion Questions	155
References	155
7. Using Information Technology to Improve Population Outcomes	159
<i>Laura P. Rossi and Alyssa E. Erikson</i>	
Introduction	159
Using Technology in Care Delivery for Populations	160
Using Technology to Improve Care Delivery Processes	162
Using Technology to Obtain Health Information	165
Opportunities and Barriers to Using New Technology	167
Electronic Resources That Support Population-Based Nursing	173
Summary	177
Exercises and Discussion Questions	179
References	179
8. Concepts in Program Design and Development	183
<i>Laura P. Rossi</i>	
Introduction	183
Models for Program Design and Implementation	183
Program Planning: Where to Start	191
Sources of Data	192
Program Design and Implementation	200
Implementation	203
Overcoming Barriers and Challenges	206
Summary	207
Exercises and Discussion Questions	208
References	208
9. Evaluation of Practice at the Population Level	211
<i>Barbara A. Niedz</i>	
Introduction	211
Monitoring Healthcare Quality	212
Summary	237
Exercises and Discussion Questions	238
References	239
Internet Resources	243
10. The Role of Accreditation and Certification in Validating Population-Based Practice/Programs	245
<i>Gail M. Johnson</i>	
Introduction	245
Governmental Programs	248

Nongovernmental Programs	253
The Role of Advanced Practice Registered Nurses in Program Accreditation	258
Summary	259
Exercises	261
References	261
Internet Resources	262
11. Building Relationships and Engaging Communities Through Collaboration	264
<i>Sonda M. Oppewal</i>	
Introduction	264
Foundation for Collaboration and Community Engagement	265
Community Health Assessment	269
Assessment Tools and Methods	271
Building Relationships	280
Summary	284
Exercises and Discussion Questions	285
References	286
12. Challenges in Program Implementation	289
<i>Barbara A. Niedz</i>	
Introduction	289
Implementation Science	290
Lewin's Stages of Change	291
Rogers' Diffusion of Innovations Theory	293
The Reach, Adoption, Implementation, and Maintenance Model and the Practical Robust Implementation and Sustainability Model	295
Summary	300
Exercises	301
References	302
13. Implications of Global Health in Population-Based Nursing	304
<i>Suzanne Willard and Vera Kunte</i>	
Core Competencies in Global Health	304
The United Nations Millennium Development Goals	324
Summary	331
Exercises	332
References	332
<i>Index</i>	337

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FOREWORD

Nursing has a long and distinguished history of providing care to groups of people who, due to shared characteristics, are at risk for compromised health outcomes. Whether those groups of people were veterans suffering from chronic pain and posttraumatic stress disorders, lonely elders at risk for falls and medication errors, young mothers unsure of how to care for their newborns, or sedentary office workers whose lifestyles were silently shortening their lifespans, nurses have traditionally intervened with these and other populations to improve health and reduce health risks.

Fast forward to the 21st century in which advanced practice nurses are critical to the delivery of primary care across even broader sets of diverse populations. Hence, the union of population health and primary care presents the need for today's advanced practice nurse to acquire even more knowledge, more skills, more tools, more data, and more collaborations to design, implement, and evaluate population-specific, health-promoting interventions and programs. In short, today's advanced practice nurses need even more knowledge and tools to ensure that they are effectively practicing population-based nursing.

Fortunately, the fourth edition of *Population-Based Nursing: Concepts and Competencies for Advanced Practice* provides a one-stop shop for today's advanced practice nurse. Starting with foundational principles of public health, community health, and population-based nursing, chapters sequentially move to the more advanced principles of epidemiological methods and measures, population-level evidence, program design and evaluation, use of information technology, and the development of collaborative community-based relationships that can positively influence health policies.

This latest edition of *Population-Based Nursing: Concepts and Competencies for Advanced Practice* is a “must have” for seasoned advanced practice nurses and students, alike. The time is now; people and populations await; and advanced practice nurses must answer the call to provide primary care while working to improve health outcomes and reduce health risks for all.

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PREFACE

The original inspiration for this book grew out of the experience of teaching an epidemiology course for students enrolled in a doctorate in nursing practice (DNP) program. It was difficult to find a textbook that both addressed the course objectives and was relevant to nursing practice. The intention behind the first edition was to write a population-based nursing textbook, targeted for use as a primary course textbook in a DNP program or as a supplement to other course materials in a graduate community health nursing program. The chapters in the first through the third edition address the essential areas of content for a DNP program as recommended by the American Association of Colleges of Nursing (AACN), with a focus on the AACN core competencies for population-based nursing.

Nursing is an evolving profession, and the materials used to educate nurses must also evolve in order to address the needs of students. In this book, the fourth edition, we address the domains and competencies for advanced-level nursing education as recommended by the AACN, with a focus on Domain 3: Population Health. Our goals were to not only update the content of the existing chapters but also to add content that recognizes the broad role of advanced practice registered nurses (APRNs) in today's challenging healthcare environment. Two chapter authors have taken on the additional role of book editor for this edition; Barbara A. Niedz and Alyssa E. Erikson bring with them a wealth of knowledge and experience. A new chapter on the principles of public and community health has been added. In order to make it easier for readers to enhance their knowledge of the information that is covered in the book, we also decided to add case studies to the chapters. We use the title "advanced practice registered nurse" (APRN) which is the title used in *The Consensus Model for APRN Regulation, Licensure, Accreditation, Certification, and Education* (APRN Consensus Workgroup & National Council of State Boards of Nursing APRN Advisory Committee, 2008). This document is the product of the APRN Consensus Work Group and the National Council of State Boards of Nursing (NCSBN).

Several events covering a wide range of issues in the healthcare field have occurred over the past few years. One of those events stands out as an example of how the interconnected world in which we live can cause a global health emergency. The first indication that a new infectious disease had surfaced occurred in China in December of 2019. On January 20, 2020, the U.S. Centers for Disease Control and Prevention (CDC) reported the first laboratory-confirmed case of the 2019 Novel Coronavirus in the United States. In March 2020, the World Health Organization declared the COVID-19

outbreak a global pandemic. By April 2020, more than 1 million cases of COVID-19 had been confirmed worldwide. As of May 3, 2023, there were a reported 764,413,623 confirmed cases of COVID-19 worldwide and 6,915,273 deaths (CDC, 2023). The pandemic wreaked havoc in healthcare systems, global economies, and people's lives. It placed a spotlight on the problem of health disparities, as the disease disproportionately affected Black, Indigenous, Hispanic, and socially disadvantaged communities. It also revealed the danger of disinformation spread widely and rapidly through social media, which makes it difficult for many people to differentiate fact from fiction. This edition addresses the pandemic as well as other current issues in population-based nursing.

As in the first three editions, this textbook includes successful strategies that nurses have used to improve population outcomes and reinforces high-level application of activities that require the synthesis and integration of information learned. The goal is to provide readers with information that will help them to identify healthcare needs at the population level and improve population outcomes. In particular, Chapter 1, "Introduction to Population-Based Nursing," introduces the concept of population-based nursing and discusses examples of successful approaches and interventions to improve population health. Chapter 2, "Principles of Public and Community Health," is new to this edition. It introduces the reader to the basic principles of public health and community health nursing, explains the overall purpose of public health interventions, the ethical principles underlying such interventions, and, lastly, the various methods that APRNs can use to improve public health.

In order to design, implement, and evaluate interventions that improve the health of populations and aggregates, APRNs need to be able to identify and target outcome measures. Chapter 3, "Identifying Outcomes in Population-Based Nursing," explains how to define, categorize, and identify population outcomes using specific examples from practice settings. The identification of outcomes or key health indicators is an essential first step in planning effective interventions and is a requirement for evaluation. The chapter includes a discussion of nurse-sensitive indicators, *Healthy People 2030*, national health objectives, and health disparities. Emphasis is on the identification of healthcare disparities and approaches that can be used to eliminate or mitigate them. APRNs can advocate needed change at local, regional, state, or national levels by identifying areas for improvement in practice, by comparing evidence needed for effective practice, and by better understanding health disparities. APRNs have an important collaborative role with professionals from other disciplines and community members to work toward eliminating health disparities.

Epidemiology is the basic science of prevention (Celentano & Szklo, 2018). Evidence-based practice, as it relates to population-based nursing, combines clinical practice and public health using population health sciences in clinical practice (Heller & Page, 2002). Programs or interventions that are designed by APRNs should be evaluated and assessed for their effectiveness and ability to change or improve outcomes. This is true at an individual or population level. Data from these programs should be collected systematically and in such a manner that can be replicated in future programs. Data collection must be organized and analyzed using clearly defined outcomes developed early in the planning

process. Best practice requires that data are not just collected; data must also be analyzed, interpreted correctly, and, if significant, put into practice. Understanding how to interpret and report data accurately is critical as it sets up the foundation for evidence-based practice. With that said, it is important to understand the basics of how to measure disease or outcomes, how to present these measures, and to know what types of measures are needed to analyze a project or intervention.

Chapter 4, “Epidemiological Methods and Measurements in Population-Based Nursing Practice: Part I,” describes the natural history of disease and concepts that are integral to the prevention and recognition (e.g., screening) of disease. Basic concepts that are necessary to understand how to measure disease and design studies that are used in population-based research are discussed. Disease measures, such as incidence, prevalence, and mortality rates, are covered, and their relevance to practice is discussed. This chapter also includes information on primary, secondary, and tertiary prevention, and the concept of causality is introduced. A section on survival and prognosis is included. This material broadens the knowledge of readers with information necessary for advanced practice and interpretation of survival data. The basics of data analysis, including the calculation of relative risk, attributable risk, and odds ratio, are presented with examples of how to use these measures. Study design selection is an important part of the planning process for implementing a program. A portion of Chapter 4, “Epidemiological Methods and Measurements in Population-Based Nursing Practice: Part I,” is dedicated to introducing the most common study designs because correct design selection is an essential part of sound methodology, successful program implementation, and overall success.

For APRNs to lead the field of evidence-based practice, it is critical that they possess skills in analytic methods to identify population trends and evaluate outcomes and systems of care (American Association of Colleges of Nursing [AACN], 2021). They need to carry out studies with strong methodology and be cognizant of factors that can affect study results. Identification and early recognition of factors that can affect the results or outcomes of a study, such as systematic errors (e.g., bias), should be acknowledged because they cannot always be prevented. In Chapter 5, “Epidemiological Methods and Measurements in Population-Based Nursing Practice: Part II,” the APRN is introduced to the elements of bias with a comprehensive discussion of the complexities of data collection. More in-depth discussion of study designs is covered, as well as a comprehensive review of ways to report on randomized and nonrandomized studies. Critical components of data analysis are discussed, including causality, confounding, and interaction.

In order to provide care at an advanced level, nurses must incorporate the concepts and competencies of advanced practice into their daily practice. This requires that APRNs acquire the knowledge, tools, and resources to know when and how to integrate them into practice. In Chapter 6, “Applying Evidence at the Population Level,” the APRN learns how to integrate and synthesize information in order to design interventions that are based on evidence to improve population outcomes. Nurses require several skills to become practitioners of evidence-based care. In this chapter, they learn how to identify clinical problems, recognize patient safety issues, compose clinical questions that provide a clear direction for study, conduct a search of the literature,

appraise and synthesize the available evidence, and successfully integrate new knowledge into practice.

Information technologies are transforming the way that information is learned and shared. Online communities provide a place for people to support each other and share information. Online databases contain knowledge that can be assessed for information on populations and aggregates, and many websites provide up-to-date information on health and healthcare. Chapter 7, “Using Information Technology to Improve Population Outcomes,” describes how technology can be used to enhance population-based nursing. It identifies websites that are available and how to evaluate them for quality. It also describes potential ways that technology can be used to improve population outcomes and how to incorporate technology into the development of new and creative interventions. APRNs use data to make decisions that lead to program development, implementation, and evaluation. In Chapter 8, “Concepts in Program Design and Development,” the APRN learns how to design new programs using organizational theory. Nursing care delivery models that address organizational structure, process, and outcomes are described.

Oversight responsibilities for clinical outcomes at the population level are a critical part of advanced practice nursing. The purpose of Chapter 9, “Evaluation of Practice at the Population Level,” is to identify ways and means to evaluate population outcomes and systems changes, as well as to address issues of effectiveness and efficiency and trends in care delivery across the continuum. Strategies to monitor healthcare quality are addressed, as are factors that lead to success. These concepts are explored within the role and competencies of the APRN.

The healthcare marketplace is extremely competitive. Administrators are constantly on the lookout to identify opportunities to differentiate and validate their organization. Achieving accreditation helps to validate programs and organizations in the context of national and professional standards. Chapter 10, “The Role of Accreditation and Certification in Validating Population-Based Practice/Programs,” describes the role of the APRN in the accreditation process.

In order for APRNs to make decisions at the community level, APRNs who work in the community need to be part of the higher level of care management and policymaking and decision-making, in partnership with the community-based consortium of healthcare policymakers. Chapter 11, “Building Relationships and Engaging Communities Through Collaboration,” describes the tools for successful community collaboration and project development. Emphasis is placed on identifying community needs and assessment of their resources. Specific examples are given to guide APRNs in developing their own community projects.

Chapter 12, “Challenges in Program Implementation,” identifies barriers to change within communities and the importance of developing and sustaining community partnerships. Specific strategies for program implementation are discussed, as well as the methods to empower the community to advocate for themselves. Specific examples are given in order to guide APRNs in executing a project that has community acceptance and sustainability.

Finally, Chapter 13, “Implications of Global Health in Population-Based Nursing,” explores the implications of global health for the APRN. Theories of global health, population health, and public/community health are differentiated and compared, to further the understanding of how environmental conditions (e.g., poverty, housing, access to care) affect the health status of individuals and groups. Recent patterns in international interdisciplinary collaborations are reviewed, including the global health competencies developed by the Association of Schools of Public Health (ASPH) and the AACN.

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