

FOURTH EDITION

Kotch's **Maternal
and Child
Health**

PROBLEMS, PROGRAMS, AND POLICY IN PUBLIC HEALTH

Russell S. Kirby, PhD, MS, FACE

Distinguished University Professor and
Marrell Endowed Chair

Associate Director, Chiles Center

College of Public Health, University of South
Florida, Tampa, Florida

Sarah Verbiest, DrPH, MPH, MSW

Director of the Jordan Institute for Families
and Clinical Professor, University of North
Carolina at Chapel Hill, School of Social
Work

Executive Director, Collaborative for Maternal
and Infant Health, University of North
Carolina at Chapel Hill, School of Medicine



**JONES & BARTLETT
LEARNING**



World Headquarters

Jones & Bartlett Learning
5 Wall Street
Burlington MA 01803
978-443-5000
info@jblearning.com
www.jblearning.com

Jones & Bartlett Learning books and products are available through most bookstores and online booksellers. To contact Jones & Bartlett Learning directly, call 800-832-0034, fax 978-443-8000, or visit our website, www.jblearning.com.

Substantial discounts on bulk quantities of Jones & Bartlett Learning publications are available to corporations, professional associations, and other qualified organizations. For details and specific discount information, contact the special sales department at Jones & Bartlett Learning via the above contact information or send an email to specialsales@jblearning.com.

Copyright © 2022 by Jones & Bartlett Learning, LLC, an Ascend Learning Company

All rights reserved. No part of the material protected by this copyright may be reproduced or utilized in any form, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without written permission from the copyright owner.

The content, statements, views, and opinions herein are the sole expression of the respective authors and not that of Jones & Bartlett Learning, LLC. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not constitute or imply its endorsement or recommendation by Jones & Bartlett Learning, LLC and such reference shall not be used for advertising or product endorsement purposes. All trademarks displayed are the trademarks of the parties noted herein. *Kotch's Maternal and Child Health, Fourth Edition* is an independent publication and has not been authorized, sponsored, or otherwise approved by the owners of the trademarks or service marks referenced in this product.

There may be images in this book that feature models; these models do not necessarily endorse, represent, or participate in the activities represented in the images. Any screenshots in this product are for educational and instructive purposes only. Any individuals and scenarios featured in the case studies throughout this product may be real or fictitious, but are used for instructional purposes only.

The authors, editor, and publisher have made every effort to provide accurate information. However, they are not responsible for errors, omissions, or for any outcomes related to the use of the contents of this book and take no responsibility for the use of the products and procedures described. Treatments and side effects described in this book may not be applicable to all people; likewise, some people may require a dose or experience a side effect that is not described herein. Drugs and medical devices are discussed that may have limited availability controlled by the Food and Drug Administration (FDA) for use only in a research study or clinical trial. Research, clinical practice, and government regulations often change the accepted standard in this field. When consideration is being given to use of any drug in the clinical setting, the health care provider or reader is responsible for determining FDA status of the drug, reading the package insert, and reviewing prescribing information for the most up-to-date recommendations on dose, precautions, and contraindications, and determining the appropriate usage for the product. This is especially important in the case of drugs that are new or seldom used.

Production Credits

Director of Product Management: Laura Carney
Product Manager: Sophie Fleck Teague
Content Strategist: Sara Bempkins
Manager, Project Management: Jessica deMartin
Project Specialist: John Coakley
Digital Project Specialist: Rachel DiMaggio
Senior Marketing Manager: Susanne Walker
Production Services Manager: Colleen Lamy
VP, Manufacturing and Inventory Control: Therese Connell

Composition: SPi Global
Cover and Text Design: Michael O'Donnell
Media Development Editor: Faith Brosnan
Rights & Permissions Manager: John Rusk
Rights Specialist: Benjamin Roy
Cover Image (Title Page, Section Opener, Chapter Opener):
© agsandrew/Shutterstock
Printing and Binding: McNaughton & Gunn

Library of Congress Cataloging-in-Publication Data

Names: Kirby, Russell S., editor. | Verbiest, Sarah, editor.

Title: *Kotch's maternal and child health* / Russell S. Kirby, PhD, MS, FACE, Distinguished University Professor and Marrell Endowed Chair, Strategic Area Faculty Lead for Population Health Science, College of Public Health, University of South Florida, Sarah Verbiest, DrPH, Adjunct Faculty, Department of Maternal and Child Health, Clinical Associate, School of Social Work Research Assistant, School of Medicine, OB/GYN Department.

Other titles: *Maternal and child health (Kotch)*

Description: 4[th] edition. | Burlington, Massachusetts : Jones & Bartlett Learning, [2022] | Originally published: *Maternal and child health* / editor, Jonathan B. Kotch. | Includes bibliographical references and index. | Summary: "The 4th edition of *Maternal and Child Health* will continue to offer a comprehensive, trusted introduction to the field of Maternal and Child Health, however this new edition, with a new author team and new MCH expert contributors, will present the traditional MCH topics in a modern context that addresses race/ethnicity, an expanded family focus (including fathers), and a broadened approach that will appeal not only to public health professionals, but also to health professionals outside public health practice"— Provided by publisher.

Identifiers: LCCN 2020050348 | ISBN 9781284200256 (paperback)

Subjects: LCSH: Child health services—United States. | *Maternal health services*—United States.

Classification: LCC RJ102 .M26 2022 | DDC 362.1989200973—dc23

LC record available at <https://lcn.loc.gov/2020050348>

6048

Printed in the United States of America

25 24 23 22 21 10 9 8 7 6 5 4 3 2 1

Contents

Foreword	xv
Introduction	xix
Acknowledgments	xxiii
Contributors	xxv

SECTION I **Foundations of Maternal and Child Health** 1

CHAPTER 1 Rights, Justice, and Equity..... 3

Dorothy C. Browne, Joia Crear-Perry, Carmen L. Green, and Inas Mahdi..... 3

Introduction	3
Moral and Ethical Bases for Ensuring Equity by Addressing Health Disparities.....	4
Children’s Rights	4
Health Disparities and Health Inequities.....	6
Racial/Ethnic Disparities	7
From Minority Health to Health Disparities.....	9
The Impact and Legacy of the Heckler Report	9
Demographic Changes	12
Roots of Inequity: Social Determinants of Health	14
Connecting the Past to the Present	17
Case Example 1: The Social Security Act	18
Case Example 2: Redlining and Restrictive Covenants	18
Case Example 3: The GI Bill.....	19

Layers of Inequities	21
Religious Identity	21
Queer Identity	21
Transgender Parenting	21
Immigrant Populations.....	22
Paid Leave	22
Intersectionality.....	22
Better Frames for Addressing Disparities: Moving Toward Health Equity.....	23
Strategies for MCH Policy and Programs	24
Strategy 1: Decolonize Funding and Research.....	24
Strategy 2: Propose Policies and Legislation to Close Equity Gaps.....	26
Strategy 3: Prioritize Learnings from Communities Experiencing Burden of Inequities	28
Strategy 4: Adopt an Antiracist Stance as an Organization.....	30
Strategy 5: Employ Respectful Maternity Care.....	30
Strategy 6: Improve Data Collection and Analyses Processes.....	30
Strategy 7: Provide Visionary Leadership.....	31
Summary and Charge for the Future	31
Discussion Questions.....	32
References	32

CHAPTER 2 A Life Course Perspective on Maternal and Child Health and Health Inequities.....**37**

Liana J. Richardson, Kelly L. Strutz, and Andrea N. Goodwin	37
Introduction	37

iv Contents

Fundamental Concepts in Life Course Theory 40

 The Five Defining Principles of Life Course Theory 41

 1. *The Principle of Life Span Development* 41

 2. *The Principle of Human Agency* 41

 3. *The Principle of Timing* 41

 4. *The Principle of Linked Lives* 42

 5. *The Principle of Historical Time and Place* 42

 Three Key Concepts in Life Course Theory: Trajectories, Transitions, and Turning Points 43

Fundamental Concepts in Life Course Epidemiology 43

Applications of Life Course Theory and Epidemiology to MCH 45

 Historical Applications to MCH 45

Contemporary Applications to MCH 46

 1. *Preconception Health and Well-Being* 47

 2. *The Life Course Impact of Adverse Childhood Experiences* 48

 3. *Fetal Origins of Adult Disease* 50

Implications of a Life Course Perspective on MCH Policy and Practice 51

 Implications for the Timing of Strategies to Improve MCH Outcomes 52

 Implications for the Types and Targets of Strategies to Improve MCH Outcomes 52

 Barriers to the Policy and Practice Changes Derived from a Life Course Perspective 53

Conclusion 54

Summary of Key Points 55

Discussion Questions 55

Additional Resources 56

Acknowledgments 56

References 56

CHAPTER 3 Families and Health 63

Joseph Telfair, Joanne Chopak-Foss, Janet Choongo, and Kim Harris 63

Introduction 63

American Family Composition Over Time 64

 Immigrant and Refugee Families 65

 Family Separation and Historic Trauma 65

 Grandparent-Led Families 66

 Marriage, Divorce, and Remarriage and Single Parenthood 67

 Extended Families and Cohabiting Parents 68

 Fathers 68

 Family Median Income 69

Factors That Influence Family Health 70

 Parents in the Workforce 70

 Child Care 72

 Poverty as an Indicator of Health Outcomes in Families 73

 Race, Ethnicity, Immigration, and Poverty 76

 Poverty and Its Effect on Family Well-Being 76

 Structural Patriarchy and Racism 77

Policies and Community Context That Impact Family Health 77

Conclusion 78

Discussion Questions 78

Additional Resources 78

References 78

CHAPTER 4 An Overview of Maternal and Child Health History: A Political Determinants of Health Perspective. 81

Daniel E. Dawes, Russell S. Kirby, Nelson J. Dunlap, and Mahia A. Valle 81

Introduction 81

MCH History Milestones 81

 The 19th Century: A “Pre-MCH” Era 83

 20th-Century Attention to MCH Issues 84

 Title V of the Social Security Act of 1935 85

The 1960s: A Time of Significant Growth
for MCH Programs 85

Changes to Foundational MCH Policies 86

Equity in MCH History 87

Advancing Health Equity: Past,
Present, and Future 89

 Defining Health Equity 89

 Cultivating Health Equity 90

The Political Determinants of
Health 90

 Political Determinants of Maternal
 Mortality: Illustrations 93

An Example from Florida 93

Jessica’s Story: A Case Study 94

Conclusion 95

Discussion Questions 95

Additional Resources 95

References 96

SECTION II The Developmental Cycle and Social Determinants of Health 97

CHAPTER 5 Women’s Health 99

Deborah B. Ehrenthal, Kate H. Gillespie, Madelyne Z. Greene, and Ellen M. Daley 99

Introduction 99

The Complex History of Women’s
Health in the U.S. 101

 The 18th and 19th Centuries 101

 The 20th Century 102

 The Early 21st Century 103

Women’s Health over the Life
Course 104

 Life Expectancy and Leading Causes
 of Death 104

Heart Disease 105

Cancer 106

Obesity and Cardiovascular Disease

 Risk in Women 108

Obesity 108

Cardiovascular Disease Risk 109

*Adverse Pregnancy Outcomes:
 Implications for Women’s
 Cardiovascular Health* 110

Health Concerns of Adolescents
and Young Adults 110

Health Disparities: The Salience of Both
Gender and Race 110

Unique Health Needs of Women 112

 Sexually Transmitted Infections 112

 Mental Health and Substance Use 113

 Human Sex Trafficking and Sex Work 115

 Violence Against Women 115

Women’s Health Care in the U.S. 116

 The Health Care “System” 117

General Medical Care 117

Reproductive Health Care 118

Preventive Health Care 119

 Financing Women’s Health Care 121

Data Sources for Women’s Health 122

Innovations in Health Care 122

Conclusion 125

Additional Resources 126

Discussion Questions 126

References 126

CHAPTER 6 Family Planning and Maternal and Child Health 131

Margaret Mary Downey, Ariana H. Bennett, Cassandra Marshall, Lisa Stern, Stephanie Arteaga, and Anu Manchikanti Gómez 131

Introduction 131

 Reproductive Justice 132

Background 132

 Family Planning and Public Health:
 A Complicated History 132

 Structural Violence and Barriers to
 Health Equity 133

vi Contents

Pregnancy Planning and Unintended
Pregnancy 134
Fertility in the U.S. 134
An Introduction to Unintended
Pregnancy 135
Unintended Pregnancy in the U.S. 136
Barriers to Pregnancy Planning 137
Practice Considerations. 137
Birth Control Methods. 138
Definitions. 138
Overview of Birth Control Use 138
Birth Control Options. 138
Choice of Birth Control Method 139
Contraceptive Counseling. 140
Special Considerations for
Contraception. 140
Gender and Contraception. 140
Gaps in Scientific Evidence. 140
Contraceptive Access 141
Abortion 142
What Is Abortion? 142
Abortion Trends in the U.S. 142
Types of Abortion in the U.S. 143
Medication Abortion 143
Aspiration Abortion 143
Other Methods. 143
Long-Term Health and Safety 144
Future Fertility and Pregnancy
Outcomes. 144
Breast Cancer Risk. 144
Mental Health 144
Barriers to Abortion Access. 144
Infertility 145
Infertility as a Public Health Issue. 145
Prevention 146
Infertility Treatment 146
Insurance Coverage for Infertility
Treatment 147
Health Inequities and Infertility 147
Family Planning Policy: Current
Issues and Debates 148
Title X. 148
Medicaid. 149
Affordable Care Act. 149
Abortion Policy. 149

Federal Level. 149
State Level. 150
Rise in Religious Health Care 151
Conclusion 151
Discussion Questions 153
Additional Resources. 153
References 154

CHAPTER 7 The Reproductive and Perinatal Health of Women, Pregnant Persons, and Infants 163

Arden Handler and Joan Kennelly 163

Introduction 163
Key Reproductive and Perinatal Outcomes:
Definitions, Point Estimates, and
Trends 164
Low Birth Weight: Being Born
Small, Being Born Early 165
Fetal Growth 166
Gestational Age 167
Fetal Death 169
Infant Death 170
Perinatal Mortality 175
Birth Defects 176
Maternal Morbidity and Mortality. 178
Programs, Services, Policies, and
Systemic Change to Improve the
Health of Women, Pregnant
Persons, and Infants 181
Strategies for Improving Women's
Health Prior to and Between
Pregnancies. 182
Reproductive Care 183
*Preconception/Interconception/
Well-Woman Care* 183
Strategies for Improving Women's
and Infants' Health During
Pregnancy and Labor and
Delivery 185
*Access to, Utilization, and the
Content of Quality Prenatal
Care*. 185
Measurement of Prenatal Care. 186

Barriers to Prenatal Care and Disparities in Prenatal Care Utilization 187

Content and Quality of Prenatal Care 189

Strategies/Approaches to Improving the Delivery of Prenatal Care 190

Maternal Health Care Providers, Childbirth Experiences, and Outcomes 192

Strategies for Improving Women's and Infant's Health After Delivery and During the Postpartum Period 198

Strategies to Protect and Promote the Health of the Infant After Delivery 198

Strategies to Protect and Promote the Health of the Pregnant Person/ Woman After Delivery 202

Providing Supports for Women/ Persons and Families at the Individual and System Levels Across the Prenatal and Postpartum Periods 203

Emerging Issues and Approaches in Reproductive and Perinatal Health 205

Substance Use During Pregnancy and Postpartum 205

Protecting Women's/Pregnant Persons and Infants' Health During Disasters and Emergencies 207

Justice-Involved Women 208

A Focus on Fathers 209

Centering Women's/Pregnant Persons, Voices in the Struggle for Reproductive Justice 209

Conclusion 210

Summary of Key Points 210

Recommendations 210

Discussion Questions 211

Additional Resources 211

References 211

CHAPTER 8 Toddlers and Preschool-Age Children. 227

Meghan E. Shanahan and Bharathi J. Zvara. 227

Introduction 227

The Toddler/Preschool-Age Child. 227

Demographics 228

Health and Well-Being 228

Overall Health Status of Toddlers and Preschoolers 228

General Health Status 228

Well-Child Visits 229

Vaccinations 230

Physical Health 231

Obesity 231

Allergies 232

Oral Health 234

Mental Health/
Socioemotional Development 234

Developmental Delay and Disability 234

Injuries 237

Toxic Stress 238

Drivers of Health Status 238

Families 238

Childcare 239

Health Insurance 241

Poverty 242

Emerging Issues 243

Bullying 243

Screen Time 243

Sleep 244

Conclusion 245

Discussion Questions 245

Additional Resources 246

References 246

CHAPTER 9 School-Age Children. 255

Candace Gagnani, Nupur Agrawal, Susan Duan, Ashley Lewis Hunter, and Alice A. Kuo 255

Introduction 255

Family Structure 256

Impact of Family Structure on Children 256

Special Populations of Children 257

Children Who Live in Poverty 257

Children Who Experience Abuse and Neglect 260

Children Who Are in Immigrant and Migrant Families 263

viii Contents

Children with Adverse Experiences	264	Demographics of Adolescence	298
Children with Autism and Neurodiversity	266	What Is Adolescence Today?	298
School-Related Issues	267	Who Are Adolescents?	298
School Readiness and Transition into Kindergarten	267	Adolescent Health Status	299
Physical Health and Motor Development	268	Data Sources for Adolescent Health	299
Social and Emotional Learning	268	What Influences Adolescent Health?	300
Approaches to Learning	269	Primary Contributors to Adolescent Mortality and Morbidity	300
Language and Cognitive Development	269	Mortality	300
Community Roles	269	Violence	301
Learning Differences	270	Substance Use	304
Bullying	271	Sexuality, Contraception, Fertility, and Sexually Transmitted Infections	306
Behavioral Challenges	272	Mental Health and Suicide	307
School Shootings/Gun Violence Prevention	273	Obesity, Nutrition, and Physical Activity	309
Key Health and Mental Health Issues	274	Chronic Conditions and Disabilities	309
Vaccines	274	A Developmental Systems Perspective on Adolescence	310
Overweight/Obesity	274	Puberty and Biological Development	310
Body Image/Eating Disorders	275	Cognitive Development and Decision Making	312
Attention-Deficit/Hyperactivity Disorder	277	Impulsivity, Sensation-Seeking, and Risk-Taking During Adolescence	312
Anxiety and Mood Issues	278	The Neurologic Basis of Changes in Adolescent Decision Making	313
Emerging and Important Considerations	279	Social Development	313
Electronic Devices and Social Media	279	Environmental and Contextual Influences on Adolescent Health and Development	315
Vaping	281	Schools	315
Transgender and Gender-Diverse Youth	283	Neighborhood and Community	316
Sexuality, Sexual Exploration, and Sexual Orientation	288	Legal Systems	316
Conclusion	289	Media and Technology	317
Discussion Questions	289	Improving Adolescent Health	318
Additional Resources	290	Education	318
References	290	Neighborhoods	319
CHAPTER 10 Adolescent Health	297	Health Care	319
Carolyn T. Halpern, Megan C. Barry, and Abigail A. Haydon	297	Legal Systems	320
Introduction	297	Agencies and Public Health Programs Focused on Adolescents	320
Historical Changes In Views of Adolescence	297	Maternal and Child Health Bureau (MCHB)	320
		Division of Adolescent and School Health (DASH)	321
		Teen Pregnancy Prevention Programs	321

Future Directions 322
 Key Points 323
 Discussion Questions 323
 Additional Resources 324
 References 324

**SECTION III Cross-Cutting
 Issues and
 Themes 333**

**CHAPTER 11 Children and
 Youth with Special Health
 Care Needs 335**
Allysa Ware and Russell S. Kirby 335
 Introduction 335
 National Survey of Children with
 Special Health Care Needs 335
 Social Determinants of Health 336
 Minoritized CYSHCN 336
 Evolution of Public Policy for
 CYSHCN 338
 Unique Needs of CYSHCN and
 Their Families 338
 Life Course Approach to CYSHCN 339
 Mental Health 340
 Health Care Financing for CYSHCN 341
 Medicaid and CHIP 341
 Family-Centered Programs and
 Strategies to Improve Outcomes 342
 Medical Home/Family-Centered Care 342
 Parents as Partners in Health Care 343
 Family-to-Family Support During the
 Diagnostic Odyssey 344
 Care Coordination 344
 Educational Supports 344
 Transition Planning for CYSHCN 345
 Conclusion 346
 Discussion Questions 346
 Additional Resources 347
 References 347

**CHAPTER 12 Environmental
 Health 351**
Ruth A. Etzel and Jack K. Leiss 351
 Introduction 351
 Structural Racism Determines
 Environmental Exposures and Health
 Outcomes 352
 Inequities in Health Outcomes 352
 Structural Racism 352
 Inequities in Environmental Exposures 352
The Environmental Justice Movement 353
Role of the MCH Professional 353
 Environmental Exposures Across
 the Life Span 353
 The Chemical, Biological, and Physical
 Environment Influences Health 354
 Global Climate Change 355
 Epidemics of Environmental Illness 357
 Major Chemical Agents of Concern
 for Health 358
Tobacco and Nicotine 358
Outdoor Air Pollutants 358
Carbon Monoxide 360
Lead 360
Mercury 361
Arsenic 361
Pesticides 362
Persistent Organic Pollutants 363
Phthalates 363
 Major Biological Agents of Concern
 for Health 364
Molds and Mycotoxins 364
Trichothecene Mycotoxins 364
 Major Physical Agents of Concern
 for Health 365
Radiation 365
 Prevention 366
 Primordial Prevention 366
Regulation of Environmental Chemicals 366
Case Studies 368
*Lessons from the Case Studies of
 Environmental Regulation 372*
Role of the MCH Professional 372
 Primary Prevention 372

x Contents

Secondary Prevention 373
Tertiary Prevention 373
Research 373
Collaboration with National and
International Organizations 373
Conclusion 373
Discussion Questions 374
Additional Resources 374
Acknowledgments 374
References 375

**CHAPTER 13 Maternal, Child,
and Family Nutrition 381**

**Alison K. Nulty, Hope K. Lima,
Christina Chauvenet, and
Amanda L. Thompson 381**

Introduction 381
Malnutrition in the U.S. 382
Hunger, Undernutrition, and Food
Insecurity 382
Prevalence 382
*Recent Trends and Current State of Food
Insecurity* 385
*Impact on Growth, Development,
and Health* 385
Overnutrition 386
Public Health Nutrition
Guidelines 388
2020 Dietary Guidelines for
Population Health 389
Nutrition Recommendations for
MCH Populations 389
Maternal Nutrition 389
Weight Gain During Pregnancy 389
Nutrition During Pregnancy 391
Nutrition During Lactation 393
Breastfeeding 395
Baby-Friendly Hospital Initiative 395
Barriers to Breastfeeding 396
Donor Human Milk 397
Complementary Feeding 399
Recommendations and Adherence 399
*Dietary Guidelines for Children
Younger Than 2 Years* 400

Feeding Styles and Approaches 401
Child Nutrition 401
Public Health Nutrition Programs 402
Supplemental Nutrition Assistance Program . 402
Special Supplemental Nutrition Program
for Women, Infants, and Children 403
School Nutrition Programs 404
Conclusion and Recommendations 406
Discussion Questions 406
Additional Resources 406
References 407

**CHAPTER 14 Women, Children,
and Family Oral Health 415**

**Cheryl A. Vamos, Rocio B. Quinonez,
and Chelse Spinner 415**

Introduction 415
Theoretical Perspectives on Oral Health
of Women, Children, and Families 416
Life Course Perspective 416
The Social-Ecological Model 417
Maternal–Child Oral Health 419
Preconception and Pregnancy 419
Childhood and Adolescence 421
Population-Based Strategies 423
Barriers to Oral Health Care 424
Moving Forward: Future Directions
for MCH Oral Health 425
Conclusion 427
Discussion Questions 428
Additional Resources 428
References 429

**CHAPTER 15 Child and
Family Mental Health 433**

Katherine E. Grimes 433

Introduction 433
Mental Illness Is Very Common 434
Prevalence of Mental Health
Conditions in Children 434
Treatment Gap: Most Youth with
Psychiatric Disorders Are Untreated 434

Child and Adolescent Mental Health:
 Disparities in Treatment Access
 and Quality. 435
 Untreated Trauma Leads to Negative
 Social and Health Outcomes. 436
 Child Mental Health Policy Through
 A Public Policy Lens. 437
 Women’s Mental Health: Priorities
 and Challenges. 438
 Family-Centered Care 440
 Using Science to Inform Child and
 Family Mental Health Policy 441
 Accountable Care and Health Care
 Reform 442
 Integrated Care: Outcomes and
 Opportunities. 443
 Policies in Action: Monitoring Outcomes . . . 444
 Discussion Questions 444
 Additional Resources. 444
 References 445

**CHAPTER 16 Global Maternal
 and Child Health 449**

**Pierre Buekens and
 Fernando Althabe 449**

Introduction 449
 Defining Global Health 449
 Demographic, Epidemiologic,
 Nutritional, and Obstetric
 Transitions 450
 Persistent Inequalities and Disparities . . 450
 International Organizations. 451
 Sustainable Development Goals. 452
 Measuring Maternal and Child Health. . . 454
 Health Indicators 454
 Data Sources. 454
 Measurements. 455
 Maternal Mortality 455
 Blood Loss 455
 Birth Weight and Gestational Age 455
 Child Growth. 456
 Rapid Diagnostic Tests 456
 Prenatal Clinics: Sentinel
 Community HIV/AIDS Monitoring 457

Evaluating MCH Interventions 457
 An Evidence-Based Approach. 457
 Implementation Trials. 458
 Global Collaborations 460
 Conclusion 461
 Discussion Questions 461
 Additional Resources. 461
 References 462

**SECTION IV Maternal
 and Child
 Health Skills,
 Tools, and
 Techniques 465**

CHAPTER 17 Research Methods . . 467

**Martha S. Wingate, Honour McDaniel,
 Anne E. Brisendine, and
 Iheoma U. Iruka. 467**

Introduction 467
 Current MCH Research Priorities. 468
 Translating Key MCH Concepts into
 Measurable Constructs 468
 Assessing Maternal, Women’s, and
 Child Health at the Population Level 469
 Evaluating the Effects of Policies on the
 Health of Children and Families. 469
 Health Equity 469
 International Issues. 470
 Fundamental Concepts of Science
 and Research 471
 Ethics and Scientific Integrity 471
 Measurement, Order, and Classification . . . 472
 Validity and Reliability of Measurement . . . 473
 Causality, Association, and Chance. 473
 Building Blocks of Research. 474
 Theories, Hypotheses, and
 Operational Definitions. 474
 Conceptual Models and Hypotheses 475
 Directed Acyclic Graphs. 476
 Research Approaches 477
 Quantitative Studies 477

xii Contents

Qualitative Studies 477
Mixed-Methods Studies 478
Study Design 478
 Nonexperimental Designs 478
 Experimental Designs 481
 Health Services Research
 and Evaluation 482
 Multilevel Models 484
Data for Research 484
 Types and Sources 484
 Data Visualization and Communication
 Tools 486
 Geographic Information Systems 486
Dissemination and Implementation
of Research 488
Conclusion 488
Discussion Questions 489
Additional Resources 490
References 490

**CHAPTER 18 Assessment
and Program Planning 495**

**Jennifer Marshall, Karen D. Liller,
Russell S. Kirby, Piia T. Hanson,
and Allison Parish 495**

Introduction 495
 Overview of Key Program Planning
 Components 495
Understanding the Broader Context 496
 Literature Review 497
 Reviewing the Program
 and Policy Landscape 497
 Reviewing the Secondary Data 498
Community Assessment 498
 Purpose 499
 Partners 499
 Process 500
 Connecting Needs Assessment
 to Program Design 500
Program Design 500
 Models for Program Design 503
Intervention Development
and Implementation 503
 Implementation Science 506

Evaluation and Continuous Quality
Improvement 507
Summary 509
Discussion Questions 509
Additional Resources 510
References 510

**CHAPTER 19 Program
Monitoring and Evaluation 513**

**Joseph Telfair, Allyson Kelley,
and Gaurav Dave 513**

Introduction 513
Context for the Practice of MCH
Monitoring and Evaluation 514
Questions That Can Be Answered
by M&E 515
 Public Health Approach
 to M&E Steps 1–4 516
 Public Health Approach
 to M&E Steps 5–6 518
 Public Health Approach
 to M&E Step 7 519
 Public Health Approach
 to M&E Step 8 520
Indicators and Their Use in M&E 520
Data Sources for Monitoring and
Evaluation 521
 Quantitative Data 522
 Qualitative Data 522
 Specific Data Sources 523
 Health Systems Data 523
 Population-Based Surveys 524
Study Designs for Evaluating
MCH Program Success 525
 Randomized Experiments 526
 Quasi-experimental Designs 528
 Non-experimental Designs 529
Choosing and Implementing
an Evaluation Design 530
The Importance of Engaging
Stakeholders 531
Monitoring and Evaluation
Guidelines 532

Conclusion 534
 Discussion Questions 534
 Additional Resources 534
 References 534
 Appendix A Useful Resources
 for Program Monitoring and
 Evaluation 538
 Online Resources for MCH
 Evaluation 538
 General Monitoring and
 Evaluation Online Resources 538
 Textbooks 538
 Participatory and Empowerment
 Focused 538
 Sampling Resources 539
 Appendix B MCH HRSA Grant
 Application Workplan Example 540
 Appendix C Generic Evaluation
 MCH Training Report Outline 541
 Appendix D Example of SDOH Public
 Health Program Logic Model 542
 Appendix E Theory of Change
 MCH Program 543

**CHAPTER 20 Medicaid and CHIP
 Coverage for Women and
 Children: Politics and Policy. 545**

Kay Johnson 545
 Introduction 545
 Medicaid and Medicare 546
 From Medicare to Medicaid: Medicaid
 Policy for Pregnant Women and
 Children, 1965–1976 546
 From CHAP to CHIP: Medicaid Policy for
 Pregnant Women and Children,
 1977–1997 547
 Medicaid Policy and Program Change
 in the 1990s 550
 *Medicaid-CHIP Coverage for Children
 with Special Health Care Needs and
 Disabilities.* 552
 Medicaid and the Affordable Care
 Act Era 554

The Impact and Legacies of
 Medicaid Policy Change 555
 Structural Changes 555
 Social Learning and Block Grants 556
 The Legacies of CHIP. 557
 Medicaid’s Comprehensive Child
 Health Benefit: EPSDT 558
 The Uniquely Child-Focused and
 Preventive Purposes of EPSDT 558
 The Origins of EPSDT in the War on
 Poverty 559
 The Ongoing Failure to Implement
 EPSDT 560
 The Role of Medicaid and CHIP in
 Health Coverage for Children 563
 Trends in Public and Private Health
 Coverage for the MCH Population 563
 Medicaid as a Program to Advance
 Equity 566
 Conclusion and Opportunities
 Ahead 571
 Discussion Questions 573
 Acknowledgments 573
 References 573

**CHAPTER 21 Advocacy and
 Policy Development. 585**

**Donna J. Petersen and
 Catherine A. Hess 585**
 Introduction 585
 Levels of Advocacy 586
 Why Is Advocacy Important in
 Maternal and Child Health? 587
 Who Are Advocates? 590
 Where Are Advocacy Efforts Directed? 593
 How Is Advocacy Conducted? 595
 How Does Advocacy Relate to
 the Policy Development Process? 598
 Conclusion 599
 Discussion Questions 600
 Additional Resources 600
 References 601

CHAPTER 22 Leadership in Maternal and Child Health 603

Jonathan Webb 603

Introduction 603
The MCH Leadership Challenge 603
What’s Happening Now? 604
What Must Be Different? 605
 A Focus on Antiracism and Equity 605
 A Broader Perspective on Partnership 607
 Community Engagement 607
 Nontraditional Partners 608
 Workforce 610
Characteristics of New Leaders 610
 Visionary 610
 Humble 611

Strategic 611
Reflective of Those Whom They Serve/
 Culturally Competent 611
Willing to Create a Culture
 of Learning 612
Willing to Make It Personal:
 Alignment of Purpose, Passion,
 and Position 612
Ready to Challenge the
 Status Quo 612
What Should the New World Order
 Look Like? 613
Discussion Questions 613
Additional Resources 614
References 614

Index 615



Foreword

Tyan Parker Dominguez, PhD, MPH, MSW

My parents were high school sweethearts who came of age in the early 1960s. After college, they moved to San Francisco to launch their careers, settling in the Mission District, not far from the Black Panther Party's local outpost. My father acquainted himself with some of its members, but he was more intent on staking his claim to the American dream than joining a revolutionary movement to bring "Power to the people!" Although ambitious and fiercely intelligent, my father was chronically underemployed. As a Black man trying to get ahead in a White man's world, he often found that his deft ability to code-switch did not alter the fact that, to those "crackers," he was just a "nigga" in a suit. Deciding to relocate back home to the opposite coast, my father left the corporate world and began hustling for odd jobs. Once they started a family, he insisted that my mother work at cooking, cleaning, and raising the children rather than contributing to the household's bottom line. With his dreams deferred, he became intensely frustrated and began to misuse drugs and displace his rage onto my mother, the "light, bright, damn near White" debutante daughter of small business owners. My parents divorced not long after an argument that left my mother crumpled at the bottom of a flight of stairs. She was 36 weeks pregnant. She delivered a "healthy" preemie, but remained hospitalized for 10 days with a pulmonary embolism. Her postpartum recovery involved a year-long course of heparin injections, and meticulous, surreptitious planning of our eventual getaway.

As a single parent, my mother quickly learned to navigate the social safety net that prevented our fall into complete destitution. I knew nothing

about the policies or politics that wove together the programs that sustained us, but I knew that I got shots and lollipops at the public clinic. I knew that the punch card tucked into my Trapper Keeper was my ticket to free meals at school. I knew that we tallied our grocery cart before entering the checkout line to avoid outspending our food stamps. And when we did, as was invariably the case, I knew that our next shopping trip would be to the food bank to queue for canned goods, powdered milk, and government cheese. With emotional support and tangible aid from our village of family and friends, my mother valiantly worked to raise us and to reclaim herself, ultimately earning a graduate degree and establishing a career in nonprofit management. Although I truly admired her tenacity and resilience, I vowed that the hardships of my childhood would not be revisited in my adulthood.

To my parents, our education always was a non-negotiable given. For me, school served not only as a source of personal edification, but as an emotional respite and a viable escape route from a life of tenuous subsistence. I worked hard, excelled academically, and set my sights on law school to secure my financial future as a highly paid, high-powered attorney. When I entered college as an undergrad, I thought I clearly grasped who I was and who I wanted to become. Rather than debating aspiring applicants to the bar, however, I found myself engaged in such extracurriculars as mentoring "at-risk" teens at a family service agency, speaking in high schools about rape and dating violence, playing with toddlers in a homeless shelter's nursery, cuddling NICU babies whose parents were MIA, and working with university administrators to recruit and retain a more diverse student body. By graduation, I realized my life did

not require a massive reboot. Instead, my upbringing had served as a profound training ground for what I now felt compelled to do with my life—simply and sincerely, to make the world a better place.

Now, plenty of people want to do some good in this world, and God bless them for it. “Good done anywhere is good done everywhere. . . . As long as you are breathing, it’s never too late to do some good” (Angelou, 2016). Given my life experience, though, I knew all too well that attempts at helping were not always helpful. Good intentions alone were insufficient—I needed specialized knowledge and skills to effectively contribute to positive social change. In my search for the best professional fit, I discovered that social work and public health both centered social justice in their core missions to optimize societal health and well-being, and they both advanced social equity in their ethical commitments to the common good. All of this deeply resonated with me, so I crammed for the GRE instead of the LSAT, and applied to dual-degree programs.

It is not uncommon for social work and public health students to begin their graduate training with a genuine desire to change the world, yet to have a rather amorphous sense of professional direction. I was no different. I knew I wanted to help “vulnerable” children and families, but I had yet to pinpoint a particular area of specialization or focus. That is, I was uncertain until the day I found myself shuffling through the class reader for the maternal and child health (MCH) core course, desperately seeking inspiration for a term paper. I found it stashed among the recommended readings: David and Collins’s (1991) revelatory account of “Bad Outcomes in Black Babies.” Of course, I knew of my own mother’s experience—her *personal* experience—but I was completely oblivious to the disproportionate burden of adverse birth outcomes and infant deaths long endured by the Black *population*. I tried in vain to choke back streams of angry tears as I contemplated the massive weight of this newly discovered, long-standing truth. David and Collins posited that racism was the foundation of these disparities, rather than some inherent genetic deficit tied to Black “race”;

trend data suggested that understanding and addressing its devastating effects would help to bolster infant health not only in Blacks, but also in Whites and the U.S. population overall. The future president of the American Public Health Association (2015–2016), Dr. Camara Jones (2003), later suggested, “the system of racism undermines realization of the full potential of our whole society because of the waste of human resources” (p. 9). Needless to say, David and Collins’s article quickly settled the issue of my paper topic and immediately ignited my professional passion.

In the 25 years since my epiphany, I have earned a doctorate and built a career around social inequity as a fundamental determinant of MCH health disparities. I have authored journal articles, book chapters, technical reports, policy statements, grant proposals, intervention programs, and training curricula. I have researched, presented, organized, advocated, educated, consulted, testified, given interviews, and served on innumerable committees, task forces, and advisory boards. In the midst of all of this, I also became a mother myself, intensifying the personal significance of my public health career. In an ironic twist of fate, my two pregnancies resulted in two emergency cesarean sections, one postpartum hemorrhage, one pulmonary embolism, and three preterm births. (By God’s amazing grace, my children have grown into healthy, happy, and genuinely decent young men.) “We carry our history in our bodies,” social epidemiologist, Nancy Krieger, observed. “How can we not?” (California Newsreel, 2008).

I was born in the twilight of the civil rights movement, at the dawn of the second feminist wave—a progressive era of grassroots organizing, protesting, and direct action to secure liberty and justice for all. However, my family struggled during my upbringing to negotiate the intersectional complexities of the multiple “-isms” that continued to pervade American society. Of course, our country has enacted significant social reforms since then, but we nonetheless remain a nation under God that is far from united and indivisible.

At this writing, more than 470,000 people in the U.S. (and more than 2.3 million worldwide)

have succumbed to COVID-19, a respiratory disease caused by a novel coronavirus that triggered a global pandemic the likes of which have not been seen since the Spanish flu of 1918. What was true then remains true now: Populations that have been historically marginalized are those who shoulder the highest burden of disease and suffer the greatest fallout from the attendant strains on personal resources and core societal infrastructure (Roberts & Tehran, 2020). At the same time, our country is besieged by racial and political divisiveness that threatens to undermine the very foundations of our democracy. “I can’t breathe!”, George Floyd’s tragic final words, and “Black lives matter!” have become a new generation’s rallying cry for civil rights and racial justice. The peaceful transition to power of a legitimately elected presidential ticket, notably distinguished by a female vice presidential candidate of African and East Asian descent, was illegitimately threatened by an incumbent administration that refused to accept the results of “the most secure [election] in American history” (Cybersecurity and Infrastructure Security Agency, 2020). While the outgoing president sought to “keep America great” through divisive politics, the undermining of science, conspiracy theories, and damaging rhetoric that stoked the fires of White nationalism, the incoming administration aimed to “restore the soul of America.”

Undoubtedly, we are facing a critical inflection point in our history. Public health’s charge to protect and promote population health by ensuring equitable access to social resources is more vital than ever. Whatever your background, upbringing, or personal journey to this profession, devote yourself wholeheartedly and courageously to advancing its noble mission. This singular edition of *Kotch’s Maternal and Child Health* boldly challenges “shallow understanding from people of good will” who champion the “absence of tension” rather than “the presence of justice” (King, 1963). Its aim is to ready the reader to make the “good trouble” (Porter, 2020) necessary to undo deeply entrenched systems of inequity that threaten the well-being of us all. The times

are ripe for courageous leadership and bold action that move us forward in solidarity toward a more just and compassionate future, the reason so many of us felt called into this profession in the first place. Sincerest thanks to the fourth edition’s editors, Sarah and Russ, whose visionary leadership guided an impressive slate of MCH leaders in authoring this most timely and uncompromising work.

*If there is no struggle, there is no progress . . .
Power gives up nothing without a demand.
It never has. It never will.*

—Frederick Douglass

References

- Angelou, M. (2016, November 16). I’m convinced of this: Good done anywhere is good done everywhere. For a change, start by speaking to people [Personal post]. Facebook. Retrieved March 22, 2021 from <https://www.facebook.com/photo.php?fbid=10155074180829796>
- California Newsreel. (2008). Nancy Krieger, Harvard School of Public Health: Edited interview transcript. Retrieved March 22, 2021 from https://unnaturalcauses.org/assets/uploads/file/krieger_interview.pdf
- Cybersecurity and Infrastructure Security Agency. (2020, November 12). Joint statement from Elections Infrastructure Government Coordinating Council and the Elections Infrastructure Sector Coordinating Executive Committees. Retrieved March 22, 2021 from <https://www.cisa.gov/news/2020/11/12/joint-statement-elections-infrastructure-government-coordinating-council-election>
- David, R. J., & Collins, J. W. Jr. (1991). Bad outcomes in Black babies: Race or racism? *Ethnicity & Disease*, 1(3), 236–244.
- Jones, C. P. (2003). Confronting institutionalized racism. *Phylon*, 50, 7–22.
- King, M. L. Jr. (1963). Letter from the Birmingham jail. *Atlantic Monthly*, 212(2), 78–88. Retrieved March 22, 2021 from <https://www.theatlantic.com/magazine/archive/2018/02/letter-from-a-birmingham-jail/552461/>
- Porter, D. (Director). (2020). *John Lewis: Good trouble* [Film]. Magnolia Pictures.
- Roberts, J. D., & Tehran, S. O. (2020). Environments, behaviors, and inequalities: Reflecting on the impacts of the influenza and coronavirus pandemics in the United States. *International Journal of Environmental Research and Public Health*, 17(12), 4484–4511.



Introduction

Russell S. Kirby and Sarah Verbiest

Much has changed and much remains the same for families since the last edition of this text was published. Racial and ethnic disparities for children, mothers, and families have remained stagnant or widened across many indicators. Improvements in areas such as tobacco prevention among adolescents have been jeopardized by the introduction of new products such as electronic cigarettes. Maternal mortality and morbidity have finally been given the spotlight required to focus attention and resources on women and mothers—not just their infants. Investments in the Maternal Infant and Early Childhood Home Visiting Programs, among others, have increased access to developmental and health support. There is a slow but growing movement to better address and honor the needs of LGBTQ+ children, adolescents, and parents.

The past few years have also witnessed policies that have separated children from their families at the border, increased U.S. Immigration and Customs Enforcement (ICE) raids, forced hysterectomies upon women held at detention centers, and made some immigrant families afraid to access needed services. We have witnessed more school shootings, including in Parkland, Florida, which prompted a wave of youth activism. The Zika virus became a problem due to its impact on fetal formation and birth defects.

The year 2020, during which much of this text was written, has been historic. The global coronavirus (COVID-19) pandemic has disrupted daily life in many ways. Efforts to reduce the spread of infection have impacted well-child visits, dental care, maternity care, education (at all levels), child feeding programs, child abuse and neglect

reporting, access to reproductive health services, and economic security. The full impact of COVID-19 on children and families is certain to be remarkable and will be important for maternal and child health (MCH) practitioners to carefully track and understand. At the same time, the implications of climate change have led to an unprecedented number of tropical storms/hurricanes and devastating fires blazing across the western U.S. Individuals who are Black, Indigenous, or People of Color (BIPOC) continue to disproportionately bear the burden of these problems, dying at much higher rates than White people and living in more environmentally at-risk areas due to historical and structural racism.

There is a significant amount of work to be done in the U.S. toward racial equity, justice, and democracy. The murders of George Floyd, Breonna Taylor, and many other BIPOC served as a turning point in U.S. history, triggering outcries, protests, and crucial conversations across people of all identities about structural and historic racism and the truth about America. This has led to the public health community declaring racism as an “epidemic” and calls at all levels for dismantling systems and reimagining new ways of giving all children, women, families, and communities equitable access to what they need to thrive.

The chapter content of this fourth edition seeks to place equity at the center of these debates and clearly discuss where change needs to happen. This context is important for many reasons, including its deep impact on the health and well-being of children, women, and families. The health of the nation’s women, children, youth, and families is influenced by a wide array of factors, including the health practices of individuals and groups, the availability of public health and

xx Introduction

health care resources, and the social determinants of health. We are now recognizing that health is impacted at all levels by historical and structural racism and systems built on White supremacy.

Much remains to be done in the MCH arena. As described in the third edition of this text, MCH is a profession rather than a discipline. It is a big tent characterized by a multidisciplinary (e.g., public health, pediatrics, nutrition, nursing, psychology, social work, family self-advocacy, women's health) group of people who share a commitment to a particular population. We need trained academics, researchers, and practitioners to improve the health and well-being of women, children, and families. In taking this broad tack, MCH has borrowed from many health and social science disciplines, while also developing and refining a set of knowledge and skills of its own. Life course theory, as described in Chapter 2, has become a unifying paradigm across the MCH profession, as has reproductive justice.

The original set of Maternal and Child Health Leadership Competencies were developed in 2007 and revised in 2018. The 12 competencies are organized into three categories (**Box 1**). While no single book can address all of these competencies in depth, this text was designed to build knowledge in many of these areas. Readers who are interested in exploring these competencies and finding resources to further their learning will find a wealth of information at www.hrsa.gov/library/index.html.

The structure of this text is straightforward. The first four chapters cover equity, rights, and MCH history and provide the ethical and philosophical underpinnings necessary for understanding the field. The chapter on families provides background for the changing social context affecting the health and development of children and their families. The next set of chapters follow the developmental cycle, beginning with women's health and family planning and proceeding through maternal and infant health, preschool, school-age, and adolescent health. The chapters that follow address issues that cut across the developmental stages; they address a variety of topics, including children and youth with special health care needs, nutrition, mental health, oral health, environmental health, and global MCH. The final set of chapters presents public health skills that no MCH professional should leave home without—namely, MCH research, planning, monitoring and evaluation, and policy. The text closes with a focus on what new MCH leaders will need to be successful in improving the lives of children and families. As with any edited text, the chapters are written in a variety of styles that reflect the different expertise of the chapter authors as well as the various ways they approach their different areas of expertise.

We were honored that Jonathan Kotch chose us to take on the fourth edition of this text. It is no small task to be handed a text widely known as “Kotch's book” and bring forward a new version. We retained the original structure of the text, but added chapters on mental health, Medicaid, and leadership. We also reordered the presentation of topics to begin with the chapter on equity and justice.

BOX 1 Core MCH Leadership Competencies

I. Self

1. MCH knowledge base/context
2. Self-reflection
3. Ethics
4. Critical thinking

II. Others

5. Communication
6. Negotiation and conflict resolution
7. Cultural competency
8. Family-professional partnerships
9. Developing others through teaching, coaching, and mentoring
10. Interdisciplinary/interprofessional team building

III. Wider Community

11. Working with communities and systems
12. Policy

Source: Human Resources and Services Administration. Maternal and child health leadership competencies, version 4.0. Retrieved March 22, 2021 from https://mchb.hrsa.gov/training/documents/MCH_Leadership_Compencies_v4.pdf

Several authors from the third edition agreed to write for this new edition, which we greatly appreciated. At the same time, we were able to broaden the diversity of authors, who represent a variety of universities, identities, professional backgrounds, and regions of the country. We asked authors to consider the identity of the people they were citing, to be inclusive in their language and definition of family, to center on equity and racial justice, and to contextualize all data presented by race/ethnicity. We encouraged authors to consider the impacts of structural and historical racism on the health and well-being of maternal, child, and family populations. While we hope this new edition will expand the thinking and perspectives in our field as we become more diverse and equity-centered, we fully acknowledge that gaps remain and much more work needs to be done. We encourage our readers and professors alike to critically analyze the content presented here, discuss it, identify what is missing, and work with us to make our field better.

Finally, we offer our deepest gratitude to all of the chapter authors, who completed their work in

the middle of a pandemic and an emerging and revitalized civil rights movement that demanded both attention and action. They worked on their chapters while homeschooling their children, moving their own classrooms online, caring for patients in a complex environment, supporting staff virtually, and trying to maintain some kind of balance and self-care when deeply impacted by the blatant and rampant racism in America. Their commitment to maternal, child, and family health and to the readers of this text is exemplary. We would also like to thank Jennifer Delva, a doctoral student at the University of Southern Florida, for her time and support throughout this process.

We encourage all of our readers to accept the challenge and excitement of working to improve the health and well-being of America's children, youth, women, families, and communities. MCH work offers an opportunity for a two-generational approach and the chance to work at individual, family, community, organizational, systemic, and policy levels. There is much to learn and much work to be done. We wish you well on your journey!



Acknowledgments

We would like to thank Bill Sappenfield, Donna Petersen, and Jonathan Kotch for supporting us in taking on this task and offering encouragement along the way. We would like to thank the faculty in the MCH concentration at the University of South Florida (USF) and colleagues in the Collaborative for Maternal and Infant Health at the University of North Carolina at Chapel Hill, as well as many colleagues around the nation who graciously agreed to develop and write chapters for the new edition. We also thank the doctoral students in the community and family health PhD program at USF, especially Jennifer Delva, who as a doctoral graduate research assistant helped with

logistical details and gave input on the content of the text from the student perspective. We are looking forward to creating an annual MCH award with the royalties from this text, which we and the chapter authors have all agreed to donate toward this end.

Finally, we would like to thank our partners Elizabeth (Russ) and Dirk (Sarah) for keeping us focused on the more important things in life. We appreciate the friendship we have formed in the process of editing this text and look forward to future collaborations!

Russell S. Kirby and Sarah Verbiest



Contributors

Nupur Agrawal, MD, MPH

Assistant Professor
Department of Medicine, Division of Internal
Medicine and Pediatrics
University of California, Los Angeles

Fernando Althabe, MD, MSc

Medical Officer, Maternal and Perinatal Health
UNDO-UNFPA-UNICEF-WHO-World Bank
Special Programme of Research, Development,
and Research Training in Human Reproduction
(HRP)
Department of Sexual and Reproductive Health
and Research
World Health Organization

Stephanie Arteaga, MPH

Research Associate
School of Social Welfare
University of California, Berkeley

Megan C. Barry, MSPH

University of North Carolina at Chapel Hill

Ariana H. Bennett, MPH

University of California, Berkeley

Anne E. Brisendine, DrPH, MPH, CHES®

Assistant Professor
Department of Health Care Organization and
Policy
University of Alabama at Birmingham, School
of Public Health

Dorothy C. Brown, DrPH, MPH, MSW

Senior Research Scientist
Shaw University
Adjunct Professor, Department of Maternal and
Child Health
Gillings School of Global Public Health
University of North Carolina at Chapel Hill

Pierre Buekens, MD, PhD

W. H. Watkins Professor of Epidemiology
School of Public Health and Tropical
Medicine
Tulane University

Christina Chauvenet, PhD

Postdoctoral Fellow
Prevention Research Center
University of South Carolina

Janet Choongo, MPH, DrPH(c)

Department of Health Policy and Community
Health
Jiann-Ping Hsu College of Public Health
Georgia Southern University

Joanne Chopak-Foss, PhD

Associate Professor
Department of Health Policy and Community
Health
Jiann-Ping Hsu College of Public
Health
Georgia Southern University

Ellen M. Daley, PhD, MPH

Professor and Associate Dean for Research and
Practice
University of South Florida, College of Public
Health

Gaurav Dave, MD, DrPH, MPH

Associate Professor
School of Medicine
University of North Carolina at
Chapel Hill

Daniel E. Dawes, JD

Director
Satcher Health Leadership Institute
Morehouse School of Medicine

xxvi Contributors

Margaret Mary Downey, MSW, PhD

Assistant Professor
Tulane University

Susan Duan, MD

Assistant Professor
Department of Medicine, Division of Internal
Medicine and Pediatrics
University of California, Los Angeles

Nelson J. Dunlap, JD

Morehouse School of Medicine

Deborah B. Ehrenthal, MD, MPH

Professor
School of Medicine and Public Health
University of Wisconsin–Madison

Ruth A. Etzel, MD, PhD

Milken Institute School of Public Health
George Washington University

Kate H. Gillespie, DNP, RN

Assistant Scientist
School of Medicine and Public Health
University of Wisconsin–Madison

Anu Manchikanti Gomez, PhD

Associate Professor
School of Social Welfare
University of California, Berkeley

Andrea N. Goodwin, MA, MS

Doctoral Student, Department of
Sociology
University of North Carolina at
Chapel Hill
Biosocial Predoctoral Trainee, Carolina
Population Center

Candace Gagnani, MD, MPH

Department of Pediatrics
Child Health Policy Program
University of California, Los Angeles

Carmen L. Green, MPH

National Birth Equity Collaborative

Madelyne Z. Greene, PhD, RN

Assistant Professor
School of Nursing
University of Wisconsin–Madison

Katherine E. Grimes, MD, MPH

Associate Professor, Psychiatry
Harvard Medical School

Carolyn T. Halpern, PhD

Professor
Department of Maternal and Child Health
Gillings School of Global Public Health
University of North Carolina at Chapel Hill

Arden Handler, DrPH

Professor
Community Health Sciences
University of Illinois School of Public Health

Piia T. Hanson, MSPH, MBA

Principal Consultant
Ph Solutions, LLC

Kim Harris

MPH Graduate Student
Department of Health Policy and Community
Health
Jiann-Ping Hsu College of Public Health
Georgia Southern University

Abigail A. Haydon, MPH, PhD

Carolina Population Center
University of North Carolina at Chapel Hill

Catherine A. Hess, MSW

Principal
Hess Health Policy

Ashley Lewis Hunter, MD, MS

Assistant Clinical Professor
Department of Medicine, Division of Internal
Medicine and Pediatrics
University of California, Los Angeles

Iheoma U. Iruka, PhD

Research Professor, Public Policy and Fellow
Frank Porter Graham Child Development Institute
University of North Carolina at Chapel Hill

Kay Johnson, MPH, EdM

President
Johnson Group Consulting, Inc.

Allyson Kelley, DrPH, CHES

President
Allyson Kelley & Associates, PLC

Joan Kennelly, MPH, PhD

Research Assistant Professor
Community Health Sciences
University of Illinois Chicago School of Public
Health

Alice A. Kuo, MD, PhD

Professor and Chief
School of Medicine – Pediatrics
University of California, Los Angeles

Jack K. Leiss, PhD

Director
Epidemiology Research Program
Cedar Grove Institute for Sustainable
Communities

Karen D. Liller, PhD, CPH, FAAAS

Professor
Director of the Activist Lab
University of South Florida College of Public
Health

Hope K. Lima, PhD, RDN, IBCLC

Department of Human Nutrition
Winthrop University

Inas Mahdi, MPH

Birth Equity Research Scholar
National Birth Equity Collaborative

Cassandra Marshall, DrPH, MPH

School of Public Health
University of California, Berkeley

Jennifer Marshall, PhD, CPH

Associate Professor
College of Public Health
University of South Florida

Honour McDaniel, BPH, MPH

Graduate Trainee Department of Health Care
Organization and Policy
School of Public Health
University of Alabama at Birmingham

Alison K. Nulty, MSPH Nutrition

University of North Carolina at
Chapel Hill

Allison Parish, MS, EdS, IMH-E (IV-P)

Director
Maternal, Infant, Early Childhood Home Visiting
Technical Assistance Resource Center
Education Development Center

Joia Crear Perry, MD

President
National Birth Equity Collaborative

Donna J. Petersen, ScD, MHS, CPH

Dean
College of Public Health
University of South Florida

Rocio B. Quinonez, DMD, MS, MPH

Professor
Associate Dean for Educational Leadership and
Innovation
Adams School of Dentistry
University of North Carolina at
Chapel Hill

Liana J. Richardson, PhD, MA, MPH

Assistant Professor
Department of Sociology
University of North Carolina at
Chapel Hill

Meghan E. Shanahan, PhD, MPH

Assistant Professor
Gillings School of Global Public Health
University of North Carolina at Chapel Hill

Chelse Spinner, MPH, CPH

Doctoral Student, Public Health Sciences
College of Health and Human Services
University of North Carolina at Charlotte

Lisa Stern, RN, MSN, MA

Senior Advisor
Coalition to Expand Contraceptive Access

Kelly L. Strutz, PhD, MPH

Assistant Professor
Department of Obstetrics, Gynecology, and
Reproductive Biology
College of Human Medicine
Michigan State University

xxviii Contributors

Joseph Telfair, DrPH, MSW, MPH, FRSPH

Professor and Associate Dean of Practice and
Research

Jiann-Ping Hsu College of Public Health
Georgia Southern University

Amanda L. Thompson, PhD, MPH

Professor

Departments of Anthropology and Nutrition
University of North Carolina at Chapel Hill

Mahia A. Valle, MBA

Senior Communications Specialist
Satcher Health Leadership Institute
Morehouse School of Medicine

Cheryl A. Vamos, PhD, MPH

Associate Professor

Director, University of South Florida Center of
Excellence in Maternal and Child Health
Education, Science and Practice
Fellow, Chiles Center

College of Public Health
University of South Florida

Allysa Ware, MSW, LMSW

Program Manager
Family Voices

Jonathan Webb, MPH, MBA

Chief Executive Officer

Association for Maternal and Child Health
Programs

Martha S. Wingate, DrPH

Professor

Department of Health Care Organization and
Policy
University of Alabama at Birmingham, School
of Public Health

Bharathi J. Zvara, MS, PhD

Assistant Professor

Gillings School of Global Public Health
University of North Carolina at Chapel Hill



SECTION I

Foundations of Maternal and Child Health

CHAPTER 1	Rights, Justice and Equity.....	3
CHAPTER 2	A Life Course Perspective on Maternal and Child Health and Health Inequities.....	37
CHAPTER 3	Families and Health.....	63
CHAPTER 4	An Overview of Maternal and Child Health History: A Political Determinants of Health Perspective.....	81



CHAPTER 1

Rights, Justice, and Equity

Dorothy C. Browne, Joia Crear-Perry, Carmen L. Green, and Inas Mahdi

- **Health** is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (World Health Organization [WHO] [2005])
- **Health disparities** are the differences in health status rates between population groups.
- **Health equity** is the absence of avoidable, unfair, or remediable differences among groups of peoples.
- **Health inequities** are unfair and avoidable differences in health across the population and between different populations or groups.

Reproduced from WHO remains firmly committed to the principles set out in the preamble to the Constitution <https://www.who.int/about/who-we-are/constitution#:~:text=Health%20is%20a%20state%20of,belief%2C%20economic%20or%20social%20condition>.

Introduction

This chapter begins with a discussion of the social justice and rights-centered framing for eliminating health disparities to achieve health equity. It describes governmental publications and reports that demonstrate the evolution of this

line of thinking, which has moved from an emphasis on minority health to the conceptualization of health inequities. The chapter also focuses on the changing U.S. demographics and the implications of these changes on health disparities, and the key indicators of health disparities in maternal and child health (MCH). In addition to highlighting several key indicators of maternal and child disparities, the moral and ethical basis for addressing health disparities is presented. Health is then defined based on “causes” or determinants of health disparities, and the presentation of cases that demonstrate the policies and programs that created structural determinants underlying health disparities. A model for incorporating the categories of social and structural determinants with an understanding of the factors that reduce and eliminate health disparities is shared. Several national and international programs designed to address critical issues of MCH disparities are described, followed by a discussion of the importance of examining issues of equity in MCH programming, research, and funding decisions. The chapter concludes with policy and program recommendations that ensure that equity is a core value in MCH research, teaching, and practice.

Moral and Ethical Bases for Ensuring Equity by Addressing Health Disparities

Social justice is a core value of public health, social work, and other professions, and it is the basis of addressing health disparities for the achievement of achieving health equity (Gostin et al., 2006). Social justice is about fairness and redistributing resources (distributive justice) that were legitimately earned by one person to another person who is less fortunate. In public health, this would be a distribution of services or health care. As it applies to public health, social justice is the view that everyone deserves equal rights and opportunities—including the right to good health. The key point is that there exist inequities in health, and that these inequities are avoidable, unnecessary, and unjust.

John Rawls's theory of distributive justice is often cited to support the need to address health inequities. In his book, *A Theory of Justice* (1971), Rawls elucidates the egalitarian principles of social justice, including the need for optimization of social, political, and economic processes within a society so that the group that is worse off is not further disadvantaged, and the better-off group is not in a favored position. Rawls's theory of social justice adopts the stance that individuals are ignorant of their place in society and of the claims they have to social goods. According to Rawls, individuals are likely to be fair when they form a social contract and will act according to two main principles. The first principle is justice, which means the equal right of individuals to have basic liberties, including freedom of speech, the right to assembly, and political and personal liberties. The second principle is that of difference, which states that individuals within a society, operating from the "original position," will be willing to accept inequalities in the distribution of social and economic advantages as long as the advantages disproportionately benefit the worse-off group (Rawls, 1971).

That these principles apply to the importance of addressing poor MCH outcomes that are

created by inequalities is not obvious in Rawls's writings. In fact, it was Norman Daniels and his colleagues (1999) who applied Rawls's theory of social justice to health and health care. According to Daniels and his colleagues, health is especially important in the realization of fair equality of opportunity, and health care makes a limited but essential contribution to health. Daniels posits that disparities in health outcomes are precisely the sort of consequences that the principle of fair equality of opportunity treats as unjust and, therefore, require remediation by the government. Both Rawls and Daniels (2002) suggest that disparities in services received (as well as disparities in health outcomes) based on racial and ethnic considerations warrant moral scrutiny and attention. Therefore, governments should pursue social strategies to reduce health inequalities by implementing policies "aimed at equalizing individual life opportunities, such as investment in basic education, affordable housing, income security and other forms of antipoverty policy" (Daniels et al., 1999, p. 238).

Children's Rights

Children do not make decisions to live in poverty, nor do they choose to experience homelessness and suffer economic and sexual exploitation. When parents are unable to act in the best interests of their children, governments and their legal and social systems are responsible for ensuring that children have access to education, health care, and other protected rights. Unfortunately, many governmental practices and policies related to children's rights are inconsistent and contrary to their written acknowledgments.

Data from Pope Francis, the head of the Catholic Church and sovereign of the Vatican City State, December, 2015

As suggested by Pope Francis's words, the "rights" of children and pursuing changes based on (social) "justice" are important concepts in discussions of ensuring equity by addressing health disparities in the health of mothers and children. In fact, children's rights and social justice have

contributed to the moral foundation for the pursuit of equity. According to the United Nations Convention on the Rights of the Child (UNICEF, n.d.), children—defined as all human beings younger than the age of 18 (unless the local legislation provides otherwise)—are holders of rights in the same way that adults have rights. It is generally accepted that children are entitled to fundamental universal human rights, such as the right to life, equality, and dignity. Children also own child-specific rights, such as the right to development, to nurture and care, and to education. Legal rights such as the right to free speech, due process, and privacy have also been acknowledged in laws and legal precedents, but their scope is generally more limited than that of the legal rights of adults. WHO's Constitution as well as myriad international human rights treaties have advanced the right to “the highest attainable standard of health” (Meier, 2017) and asserted that children have the same right as adults do in this case. Although some public health practitioners have criticized “the right to health” as being vague and difficult to operationalize, accumulating experiences give credence to this view. This experience is reflected in the standard of health enjoyed by the most socially advantaged groups within our society. Thus, one could argue that, given sufficient resources, the highest standard of care should be possible to attain for everyone in that society within a foreseeable future.

Over the years, various organizations have championed the rights of children. Organizations chartered to protect children, such as the Children's Defense Fund International (CDFI) and UNICEF, include the rights of children as part of their core agendas. Nonetheless, no national consensus exists regarding the rights of children. In the debates regarding the rights of children, these questions are posed: Do children have rights? Should they have rights? If so, who should determine the rights to which children should be entitled? What is the appropriate age at which children should be permitted to exercise those rights? Most people agree that children have the right to be protected from danger and abuse. But do children also have rights to self-determination?

Should children's voices be heard in a meaningful way? Should the best interests of the child take precedence over the desires of other interested parties?

Those thorny questions are rife with controversies that cannot be resolved quickly. In the MCH field, there exists the moral axiom that children are the most vulnerable class of people, and they are most influenced by and least able to protect themselves from detrimental circumstances. It is for this reason that children are considered a special class and are to be protected. When their parents are not able to protect them, then others must advocate for children and/or act on their behalf or *in loco parentis*.

For hundreds of years, children were treated as chattel. Pappas (1983) noted that children commonly were “neglected, abandoned, abused (sexually and otherwise), sold into slavery, mutilated and even killed with impunity.” From antiquity to the 18th century, almost every childrearing treatise advocated the corporal punishment—sometimes extreme—of children (McGowan, 2010). Indeed, some individuals charged with the care and upbringing of children made meticulous records of their “exemplary” disciplinary measures, supported adult control of children, even to the point of allowing capital punishment for unruly youngsters (Walker et al., 1999). These commonly held attitudes gave birth to a 19th-century child-saving era focused on ensuring the health and welfare of children. During the early years of the 20th century, progress on this front was slow; however, children's status as persons finally emerged during the last half of the 20th century (Walker et al., 1999). Two years after U.S. Supreme Court decisions established certain constitutional rights of children, such as the right to due process in adult court (*Kent v. United States*, 1966) and the same rights as adults in criminal court (*In re Gault*, 1967; Dorsen & Reznick, 1967), children at long last were designated as persons under U.S. law in the 1969 landmark decision in *Tinker v. Des Moines Independent Community School District* (Johnson, 1997). In the *Gault* ruling (1967), children charged with crimes in the U.S. were guaranteed the right to notice of charges, to counsel, to confrontation and

cross-examination of witnesses, and to privilege against self-incrimination—the same rights that adult defendants had enjoyed for many years (Dorsen & Reznick, 1967). A later decision (*Planned Parenthood of Central Missouri v. Danforth*, 1976) established that children had rights that even parents may not overrule.

Meanwhile, child abuse and neglect legislation—the Child Abuse Treatment and Prevention Act of 1973, for example—mandated that children must be protected from abuse and that parents may be prosecuted for failing to provide necessary food, clothing, shelter, education, medical care, and even love and affection, as determined by state governments. Protection from abuse corresponds with a negative right, whereas protection from neglect corresponds with the child's positive right to subsistence. Other rights established at the federal level include the right to free, public education for all disabled children, under the Education for All Handicapped Children Act of 1975, and the right to a barrier-free environment for children and adolescents with disabilities, in accordance with the Americans with Disabilities Act of 1990. Today, the notion that children have rights emerges from both the legal system and legislation that views children as juristic persons having rights as well as duties. Legal reality corresponded for centuries to the social reality of childhood. As stated earlier, before the 19th century, the prevailing jurisprudential emphasis was on the child as property. In recent times, the legal status of children has continued to improve. Indeed, the field of children's rights is perhaps the most rapidly changing area of family law (McGowan, 2010; McLeod, 2018)

Significant legislative advances have become evident in the past decade. Some recent reforms in the American system of jurisprudence include improving the position of children born to unmarried parents; reducing the age of majority; permitting young people younger than a certain age to give valid consent to surgical, medical, or dental treatment, and to seek contraceptives and to undergo abortions without their parents' consent; increasing protection against abuse and neglect;

increasing rights for disabled and institutionalized children; and improving the legal rights of students. Legislation has also resulted in enhanced administrative and judicial machinery for the protection of children's rights.

As applied to MCH, social justice and children's rights mean that everyone has rights, including the right to good health. Inequities in health are differences that are avoidable, unnecessary, and unjust. These inequities often result from policies and practices that create an unequal distribution of money, power, and resources among communities based on race, class, gender, place, and other factors. They have profound impacts on the health and the development of children throughout their life course. Furthermore, these socially determined factors result in the most disadvantaged populations having the highest risk of poor health outcomes.

To assure social justice and human rights, the government is obligated to promote equity by advancing policies that improve living and working conditions, education, health, and the environment and create conditions under which all people can thrive. Inequities can be reduced by actions that require political will. A commitment to social justice requires that all levels of government, policymakers, and professionals are committed to the health and well-being of all individuals functioning as mothers, children, and families, and that they focus on advancing equity as a priority and ensuring their rights to experience high-quality health, health care, increased economic and educational opportunities, positive reproductive outcomes, adequate nutrition, clean water and sanitation, reduced pollution, and total well-being across the life course.

Health Disparities and Health Inequities

The concept of health disparities has been defined in myriad ways. The definition given at the beginning of this chapter references differences in health

status between two groups. This definition is most often used when discussing specific differences in measures of health status between two groups. When discussing overall differences in the health status between groups, the definition used acknowledges the existing differences and states that these observed differences systematically and negatively impact less advantaged groups. Thus, the definition used in this chapter is that health disparities are “differences in specific health outcomes that are closely linked with social, economic, and/or environmental disadvantages, which adversely affect groups of people who have systematically experienced greater obstacles to health based on their religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion” (Braveman et al., 2011). Notably, not all differences are disparities. The definition of disparities, however, not only acknowledges that negative health impacts stem from social, economic, and environmental disadvantages, but also identifies groups of people in the U.S. who suffer from health disparities due to their marginalization and differential treatment.

“Health disparities” and “health equity” have become increasingly familiar terms in public health, but rarely are they defined explicitly. Ambiguity in the definitions of these terms could lead to misdirection of resources. Therefore, it is important to differentiate the terms. Health disparities focus on differences due to situations such as economic disadvantage (lack of material resources and opportunities), low income or lack of wealth, and the consequent inability to purchase goods, services, and influence. Social disadvantage is a broader concept. While it includes economic disadvantage, it also refers more generally to someone’s relative position in the social pecking order—the order in which individuals or groups can be stratified by their economic resources, as well as by race, ethnicity, religion, gender, sexual orientation, and disability. These characteristics can influence how people are treated in a society. In the *Healthy People 2020*

definition, environmental disadvantage refers to residing in a neighborhood characterized by concentrated poverty and/or the social disadvantages that often accompany it. Health equity is the principle underlying a commitment to reduce—and, ultimately, eliminate—disparities in health and their determinants, including social determinants. Pursuing health equity means striving for the highest possible standard of health for all people and giving special attention to the needs of those at greatest risk of poor health, based on social conditions.

While *Healthy People 2020* emphasized understanding and addressing the social determinants of health (i.e., poverty and disadvantages), *Health People 2030* (n.d) goes beyond, focusing on the social determinants of health. Under the topic of “Social Determinants of Health,” *Healthy People 2030* acknowledges that health disparities continue to be a burden for large segments of the U.S. population—even after addressing some of the determinants. It speaks to the elimination of disparities by viewing disparities through an equity lens. Such an approach requires the engagement of all stakeholders and the formation of partnerships across all sectors of society to change policies and practices that cause inequities, and the use of data to assess systems and policies that affect health equity. So, rather than looking at poverty rates as indicators of success, attention is directed to the examination of rates of home ownership, livable incomes, employment, and other indicators of changes in policies and regulations that ensure equity.

Racial/Ethnic Disparities

In the U.S., the focus of efforts related to health disparities, for the most part, is on race/ethnicity, and the goal is to increase health equity. Public health continues to focus primarily on examining racial/ethnic groups because Black people, Hispanic people, American Indians/Alaska Natives, Asian people, and Native Hawaiian or Other Pacific Islanders bear a disproportionate burden of disease, injury, premature death, and disability compared to other groups. Expected demographic

changes will only magnify the adverse impact of these disparities on public health in the U.S.

When considering “race” and “ethnicity,” it is essential to recognize that they are complex constructs (Anderson, Bulatao, & Cohen, 2004; Sandefur, Campbell, & Eggerling-Boeck, 2004). For many years, specific genetic and biological differences were cited to define racial groups. In the 1830s, Samuel George Morton, a White man, espoused the view that biological differences distinguished members of different races (Mitchell, 2018). As a result of his writings, there was a tendency to use “race” as a way of explaining observed racial differences in diseases and health outcomes, such as sickle cell anemia in a Black person and cystic fibrosis in a White person. These findings led to people stating that a specific group is genetically predisposed to a disease or condition.

The U.S. has a long history of using race to justify the condition of Black Americans, with many scholars searching for racial differences that could be associated with behavior and performance. For hundreds of years, medical, psychological, and anthropological studies violated human bodies while searching for the biological basis of race (Williams et al., 1994). No body part went untested—in vivo and in vitro—in the quest for this biological justification. Genital size studies and the emergence of phrenology (the study of personality and character based on brain size/shape) exemplified scientists’ drive to create measurements that would illustrate race intelligence and relation to animals. The preoccupation with finding the organ or body part that fundamentally explained race dominated science for 200 years.

In 1896, Frederick Hoffman, a statistician for Prudential Life Insurance, published a book about the traits and tendencies of Black people (Hoffman, 1896). The same year, the Supreme Court legalized segregation. Hoffman’s work was a transformative and popular text, influencing both policy and culture. Hoffman concluded that Black people were at higher risk of disease and death and asserted that those differences were due to genetic factors. Hoffman compared his biological assumptions to the social condition of Black people in America at the time, which was

marked by high rates of death, disease, and poverty. The enormous disparities in the data, he suggested, supported his hypothesis of death and disease clustering among Black people. Hoffman’s academic representation of his White supremacist beliefs was compelling to those then in power in the U.S. Hoffman believed that the poor health status of Black people meant that they would eventually become extinct. Hoffman’s book was a destructive text that set the stage for a White supremacist hierarchy of human value, which permeated academic thinking (Wolff, 2006).

(Being) Black isn’t a risk factor, racism is.

Dr. Joia Crear Perry: President of National Birth Equity Collaborative

Race is a construct invented by humans to define physical differences between groups, but it is more often a proxy for other factors. For example, preterm births, which are a leading contributor to the unacceptably high infant mortality rate in the U.S., are 60% more common in Black babies than in White babies. It would be inappropriate for one to assume that race (being of the “Black race”) causes a high rate of preterm birth. When scientists set out to map the first complete human genome, which was a composite of several individuals, they deliberately gathered samples from people who self-identified as members of different races.

At a White House ceremony in June of 2000, J. Craig Venter, a pioneer of DNA sequencing, announced, “The concept of race has no genetic or scientific basis.” The bottom line is that race does not cause anything except the social and political responses that give it social meaning (Morning, 2007).

Ethnicity is also a social construct—one that describes unique characteristics of a group, such as culture, art, or diet, or a group’s social location (Bhopal, 2004; Bhopal & Rankin, 1999). Ethnicity, in terms of culture, is used to classify people or categories considered to be significantly different from others due to language, customs, or other factors in culture. Commonly recognized American ethnic groups include, but are not limited to, African Americans, American Indians,

Latino/as, Chinese Americans, European/Anglo-Americans, and Pacific Islanders.

Racial and ethnicity constructs can overlap. For example, someone can identify being Black (race) and Hispanic (ethnicity). It is important not to confuse the term “minority” with an ethnic group. Ethnic groups may be either a minority or a majority in a population, and that has nothing to do with “who was here first” (O’Neill, 2008). Whether a group is in the minority or the majority also is not an absolute fact: It depends on the perspective of group members as well as the perspective of those not in the group. The terms “race” and “ethnicity” are both associated with human categorizations. People frequently use these constructs interchangeably, but they are separate designations. Both designations are invaluable in the study of health disparities since they do predict differences in the quality of health care and access to health services. Later in the chapter, we will discuss the impact of race as demonstrated by racism, which underpins many of the components of inequity.

From Minority Health to Health Disparities

While rarely mentioned in the literature on health disparities, more than a century ago, W. E. B. Du Bois documented in his book, *The Philadelphia Negro* (1899), that Black people suffered from some diseases at higher rates than White people. Moreover, he posited that the differences did not reflect physical “Black inferiority” but rather represented “an index of a social condition,” meaning the result of social and economic conditions. Despite the work of Dubois and the proliferation of other literature documenting disparate rates of morbidity and mortality among the races, it was not until 1985 that the U.S. government devoted attention to the health of minorities with the landmark publication, *Report of the Secretary’s Task Force on Black and Minority Health* (1985), commonly known as the Heckler Report. The Heckler Report marked the first time the U.S. government had comprehensively studied the health status of racial and ethnic minorities and elevated minority

health onto the national stage. The publication of this report was the beginning of the evolution of thought to focusing on health disparities. This shift began with a focus on “the state of minority health,” rather than a search for the reasons underlying the differences between ethnic/racial subgroups and the White population. Statistics were presented in the Heckler Report that describe the “health of those people (i.e., minorities and ethnic groups).” The report showed that six causes of death accounted for more than 80% of mortality among Black people and other minority populations. Furthermore, it outlined several recommendations to reduce the differences in health status, identified areas in which data were limited or lacking, and revealed the need to improve data collection among Hispanic, Asian American, and American Indian/Alaska Native populations.

Although the Heckler Report neither addressed reasons for disparities nor proposed interventions for narrowing the gap between these groups, it did introduce the concept of excess deaths to capture the differences between the actual number of deaths in a subgroup and the number of deaths that would have occurred if the mortality rate of that group was the same as that of the White population. Ultimately, the Heckler Report was transformative in reshaping the discussion—that is, moving it from a focus on minority health to a discussion of disparities in health outcomes.

The Impact and Legacy of the Heckler Report

The Heckler Report led to the passage of pivotal legislation that provided funding for research in the area of minority health and the establishment of Minority Health Programs within the National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), and the Health Resources and Services Administration (HRSA). Additionally, this work created actions that led to the development of more inclusive data collection techniques and prompted state and local governments to establish offices of minority health.

The Heckler Report was issued 5 years after the federal government produced its first *Healthy People* initiative. In 1979, when it was still the Department of Health, Education, and Welfare (DHEW), the Department of Health and Human Services (HHS) officially launched the publication of *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* (1979). The *Healthy People* initiative has survived for multiple decades, with phases including *Healthy People 2000*, *2010*, *2020*, and now *2030* (Healthy People 2020, n.d.).

It was *Healthy People 2010* (2011) that first called for the elimination of health disparities. Sub-objectives for racial and ethnic minorities and other special populations were established to address increased health risks or disparities among these groups compared with the total population. Notably, the 2010 initiative called for the *elimination*—not just the reduction—of health disparities. Additionally, it specifically stated that the elimination of health disparities included other groups, such groups characterized by gender, race and ethnicity, education, income, disability, living in rural localities, and sexual orientation.

Healthy People 2020 (2010) set the goal to achieve health equity for “all people,” rather stressing outcomes for specific subgroups who were disadvantaged due to discrimination or differential treatment. This initiative contained a set of goals and objectives with 10-year targets designed to guide national health promotion and disease prevention efforts to improve the health of all people in the U.S. Building on three decades of work, *Healthy People 2020* offered a renewed focus on identifying, measuring, tracking, and reducing health disparities by targeting social determinants of health, such as behavior, biology, genetics, access to health services, and the social and physical environments in which people live.

Before *Healthy People 2020* was launched, the Patient Protection and Affordable Care Act was signed into law by President Barack Obama on March 23, 2010 (NCSL, 2011). More commonly known as the Affordable Care Act (ACA; also known as Obamacare), this act sought to broaden access to health insurance coverage, and thus

health care, and reform some aspects of health insurance provision. Less well known are the numerous provisions contained in the ACA that focus on improving the health of racial and ethnic minorities and other underserved or vulnerable populations. These provisions address many of the factors, in addition to health insurance and health care access, that have long been associated with health disparities:

- The transfer of the Office of Minority Health to the Office of the Secretary
- The establishment of individual Offices of Minority Health within all of the following agencies: Agency for Healthcare Research and Quality (AHRQ), CDC, Centers for Medicare and Medicaid Services (CMS), Food and Drug Administration (FDA), HRSA, and Substance Abuse and Mental Health Services Administration (SAMHSA)
- The elevation the National Center on Minority Health and Health Disparities to an institute (the National Institute on Minority Health and Disparities [NIMHD]) within the National Institutes of Health, which gave the office more prominence in the public realm and more power to accomplish those efforts aimed at achievement of reductions in health disparities in communities of color

The ACA also contains provisions related to health disparities reduction, data collection and reporting for monitoring progress toward reducing health disparities, quality improvement and prevention, and grants for health professions training programs for diversity and health disparities interventions within communities. In addition, it supports the various *Healthy People* goals, which are the federal government's way of monitoring the country's progress in addressing health disparities. The ACA is considered transformational in that for the first time, all Americans have access to medical care when they are acutely ill and when they need continuous treatment for a chronic condition. In addition, preventive care, such as vaccinations, and health screening, has become available to millions of Americans, and health equity has been advanced.

Although the ACA has not eliminated all health disparities, it has narrowed the gaps between racial groups on some indicators. For example, prior to the ACA, Black Americans were 70% more likely to be uninsured than White people, and the uninsured rate for Latinx people was nearly three times the uninsured rate for White people (Artiga et al., 2020). After the ACA became law, Latinx people had the largest decrease in uninsured rates, with these rates falling from 32.6% in 2010 to 19.1% in 2016. Uninsured rates also fell by 8% for Asian Americans and Black Americans during the same period.

States that expanded their Medicaid programs under the ACA experienced significant coverage gains and reductions in uninsured rates among low-income individuals and within specific vulnerable populations (Artiga et al., 2020). A study by the National Bureau of Economic Research examined outcomes for states that expanded Medicaid versus states that did not expand Medicaid by comparing how much the ACA reduced disparities in access to health care among Black, Hispanic, and White adults (Baumgartner et al., 2020). Using data from the federal American Community Survey (ACS) and the Behavioral Risk Factor Surveillance System (BRFSS) for the years 2013 to 2018, the authors reported that the gap between Black and White adult uninsured rates decreased by 4.1 percentage points, while the difference between Hispanic and White uninsured rates decreased by 9.4 points. In Medicaid-expansion states, all three groups had better overall access to care than they did in non-expansion states, and there were generally smaller differences between White people and the two minority groups. Five years after the ACA's implementation, Black adults living in states that expanded their Medicaid programs reported coverage rates and access to care measures as good as or better than those for White adults in non-expansion states.

In addition, post-ACA data show improvements in MCH indicators. The ACA drastically improved coverage for women—including pregnant women—by expanding Medicaid eligibility to all adults with incomes up to 138% of the fed-

eral poverty level (FPL). The ACA also expanded presumptive eligibility, which allows women to access needed care more quickly.

Whether the positive health outcomes resulting from ACA will continue remains uncertain. Baumgartner et al. (2020) indicated that progress related to the ACA has stalled in many areas, and that the stagnation was due to the policy agenda of the Donald Trump administration, which did not support the ACA. Researchers as well as practitioners and policymakers contended that the Trump administration's policy agenda was fraught with measures that would exacerbate health disparities (Artiga et al., 2020; Baumgartner et al., 2020; Boozary, 2015)

- Asking the Supreme Court to repeal the ACA
- Weakening the rules that protected individuals from discrimination by health facilities on the basis of sex and gender identity
- Eliminating the requirement that ensures that people with limited English proficiency will receive information and health care in languages other than English
- Zeroing out of the individual mandate's tax penalty
- Loosening restrictions on non-ACA-compliant health plans
- Moving funds allocated for preventive services to other areas of ACA
- Inaction in providing Congress with racial and ethnic data necessary for the monitoring of the progress toward eliminating health disparities

In addition to the changes in the ACA, the Trump administration promoted changes in regulations, programs, and practices in areas, though not labeled as “health,” that impacted the health of the population, in general, and MCH, in particular. These actions include:

- The Environmental Protection Agency giving a boost to production and use of coal and other fossil fuels, as well as oil pipelines likely to despoil the land
- Weakening standards for gas emissions
- Gutting the Clean Water Act

- Weakening of the FDA's oversight of food and drugs
- Rolling back the Obama-era housing rule (Affirmatively Furthering Fair Housing) that halts racial segregation and eliminates racial disparities in American suburbs

Specific to MCH, the Trump administration created a new rule that forbids agencies receiving Title X (family planning) funding from referring patients to abortion providers, even when patients request such information. In addition, it made a change to the ACA that exempts groups from paying for birth control if the practice is against their religious beliefs. Both actions impact low-income women in terms of the affordability of health care and accessibility of abortions and birth control.

Demographic Changes

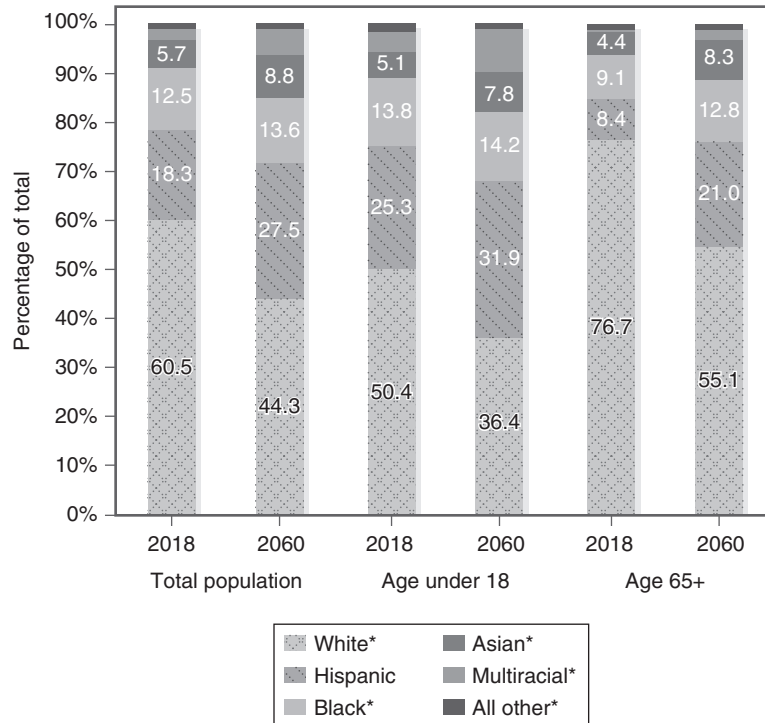
Beginning with the 2000 Census, data have been reported by five racial groups: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Pacific Islander, and White. Ethnicity is a separate category from race, and currently Hispanic/Latino is the only ethnic category identified in the Census data (Federal Register, 1997). However, since 1977, in response to questions and requests from the public, the Census officials have allowed individuals to self-identify their ethnicity and race, and permitted individuals to select more than one race and ethnicity (OMB, 1977). This change allows for a more accurate reflection of racial and ethnic backgrounds. Notably, the 2020 U.S. Census expanded reporting options to seven categories: American Indian or Alaska Native, Asian, Black or African American, Hispanic, Native Hawaiian or Other Pacific Islander, White, and two or more races (Marks & Jones, 2020). The U.S. is becoming an increasingly diverse nation, led by surging growth among individuals of Asian and Hispanic descent. Stagnating fertility rates among the White population are slowing the overall population growth, meaning that the population growth is largely fueled by births among the Hispanic population and the emigration among the Asian

groups. In 2020, the U.S. population was 60.1% White, the lowest level ever recorded. Among those younger than 16 years of age, fewer than half are White, a sign that White Americans are having fewer children and doing so later in life (Artiga et al., 2020).

In 2045, ethnic and racial minorities are expected to make up 50% of the U.S. population. At that time, White people will account for 49.7% of the population, in contrast to 24.6% for Hispanic people, 13.1% for Black people, 7.9% for Asian people, and 3.8% for multiracial populations (Frey, 2018). Among the minority populations, the projection is that the most significant growth will occur among multiracial populations. Immigration will contribute to one-third of the growth in the U.S. Hispanic population over this time period, with the rest attributable to natural increase (i.e., the excess of births over deaths). Among Asian people, immigration will contribute three-fourths of the projected growth in their numbers. Asian immigrants tend to have high education levels. A significant fraction of Latinx people who immigrate to the U.S. are Mexican and Central American, and they have disproportionately lower education levels.

As shown in **Figure 1-1**, in 2060, Asian people, Hispanic people, Black people, and multiracial populations will constitute twice the percentage of the youths younger than 18 years of age as compared to White people in that age group.

That Mexican and Central American immigrants are disproportionately poor and that more than 60% of the youth younger than 18 years of age are members of racial and ethnic populations has implications for addressing health disparities in the U.S., specifically in terms of MCH. Census data indicate that the U.S. is undergoing a remarkable and profound demographic shift. Today, in eight U.S. states, the majority of children are children of color. That information, by itself, is not significant. What is worth noting is that of the groups that are growing in number, some experience significant obstacles and disparities because of their income and status, and they tend to come from countries of color and often are low income. The estimate is that disparities amount to approximately \$93 billion in excess medical care costs



*Non-Hispanic members of race

Figure 1-1 U.S. Race-ethnic profiles, 2018 and 2060.

Reproduced from Frey, W. The US will become "minority white" in 2045, Census projects: youthful minorities are the engine of future growth, Brookings Institute, March 2018.

and \$42 billion in lost productivity per year as well as economic losses due to premature deaths (Turner, 2018).

While there is a tendency to assume increased immigration into the U.S. has negative implications for the national economy and other systems, it is important to note that without immigrants and their children, the U.S. would soon begin to experience a demographic decline. The number of U.S.-born workers with U.S.-born parents is already declining because White women born in the U.S. have experienced a major decrease in fertility. Immigrants can extend the sustainability of federal retirement programs by slowing the rise in the ratio of retirees to workers. Without a growing workforce, the U.S. economy would begin to lose its dynamism and leadership role in the global economy. In addition, immigrants are consumers, so they also contribute to the economy in that way.

In considering the projections for the population in 2045 and beyond, it is essential to acknowledge that recent changes related to the 2020 Census may reflect inaccurate projections in the racial and ethnic populations, and thus the overall population of the U.S. These changes include the presence of COVID-19, the Trump administration's failed attempt to add a question on citizenship to the 2020 Census, and the numerous anti-immigration actions taken to limit immigration to the U.S. Despite efforts to increase Census response rates, the COVID-19 pandemic meant that many people responded to the 2020 Census questionnaire online instead of having it administered by a surveyor. The need to respond to this questionnaire online was expected to be a barrier to participation for low-income and racial and ethnic households, who are less likely to have access to the Internet, even though the Census has been translated into eight languages.

Another challenge relates to the Trump administration's 2018–2019 proposal to add a question about citizenship status to the 2020 Census. Even though the U.S. Supreme Court struck down that action, the announcement of the rule created fear among undocumented immigrants, who fear deportation. In the aftermath of extensive media coverage about citizenship questions, evidence shows that those who did not have citizenship or were undocumented were more reluctant to respond to the 2020 Census.

Finally, the Trump administration implemented anti-immigration policies that overwhelmingly targeted immigrants of color from South American, the Caribbean, Africa, and parts of Asia. These actions may have dissuaded large numbers of Hispanic people and other immigrant groups of color from responding to the 2020 Census. If the number of nonrespondents in these groups is significant, it will impact their total numbers tallied in the overall population.

Even if the impacts on the population projections do not come to fruition, health disparities among racial/ethnic minorities are expected to increase due to the recent pandemic of coronavirus disease 2019 (COVID-19). Racial and ethnic minorities have been disproportionately affected by COVID-19 in the U.S. For example, African Americans and Latinx people in the U.S. have been shown to be three times more likely to contract COVID-19 than White residents and nearly twice as likely to die from it. The health disparities observed during this pandemic reflect two important patterns of inequity.

First, minority communities have a high likelihood of contracting the virus because they tend to live in urban areas and disproportionately work in higher-risk environments. A greater number of African American workers are unable to work from home, compared to White workers. In certain industries, many workers are racial minorities who also are more likely to experience other health conditions, including obesity, diabetes, and kidney disease, that are risk factors for severe illness from COVID-19. These statistics occur against a backdrop of existing disparities in health outcomes. For example, African Americans

have higher rates of maternal mortality and death from cancer and heart disease than any other racial and ethnic group. Individuals from underserved communities are also more likely to have been undiagnosed with chronic diseases, which compound the acute impact of COVID-19. These inequities are tied to long-standing barriers to accessing essential resources such as food, transportation, and housing, as well as a long history of unequal treatment, discriminatory policies, and systemic racism.

Second, COVID-19 has resulted in discontinuation or scaling back of key social programs that are community lifelines, such as schools that also serve meals to students and home visitation programs that have been instrumental in reducing infant mortality. Many racial/ethnic individuals who have chronic conditions now face additional problems of accessing care, and the acute impacts of COVID-19 worsen underlying conditions in both individuals and communities. Therefore, the disparities in outcomes that were key concerns prior to the pandemic will most likely persist if nothing is done to address the health, social, and economic issues that undergird the problem of COVID-19.

Roots of Inequity: Social Determinants of Health

Many explanations are given for the existence of health disparities and inequities, including personal choices that people make, genetic predisposition, and inadequate health care. Although there is little doubt that genetics and lifestyle play a role in shaping the health of individuals, these factors do not adequately explain disparities in health. Sometimes barriers to optimal health care and services exceed individuals' abilities to overcome the inequities related to their environments. Therefore, to address health disparities adequately, attention must be given to those factors outside of the health sector and the individual that make individuals, groups, and communities sicker than others in the first place. Giving recognition to these factors is particularly necessary

when considering the health of children, who are born with nearly limitless potential, which is then shaped and too often constrained by the environments into which they are born. Such factors are apparent when a poor Black woman wants to manage her diabetes by improving her diet, exercising to lose weight, and eating nutritious foods, yet is constrained by her living conditions—a community that is a “food swamp” (i.e., an area in which people lack access to healthy foods and that has many nutrition-poor food options), a lack of indoor and outdoor recreational facilities, and intense and targeted advertisements encouraging the consumption of sugary drinks. Thus, reducing health disparities or ensuring health equities means addressing these determinants of the poor health outcome or disparities.

Social determinants of health is a term used to describe the context in which individuals live (Bharmal et al., 2015). These conditions lie outside

of the individual; they are beyond genetic endowment and individuals’ behaviors. Social determinants are mostly responsible for health disparities or inequities—the unfair and avoidable differences in health status seen within and between different groups. Numerous models are used to illustrate the role of social determinants in health outcomes, diseases, and disparities. The conceptual model presented in this chapter is that offered by the WHO (Solar & Irwin, 2010), which depicts the relationships between the determinants of health and the disparate outcomes. This comprehensive model demonstrates the bidirectional relationships between social inequities and structural and intermediary determinants (Figure 1-2).

The framework depicted in Figure 1-2 includes two key components: structural determinants and intermediary determinants of health inequities. It shows how the causes of health inequities are rooted in the socioeconomic and political context, which give rise a set of

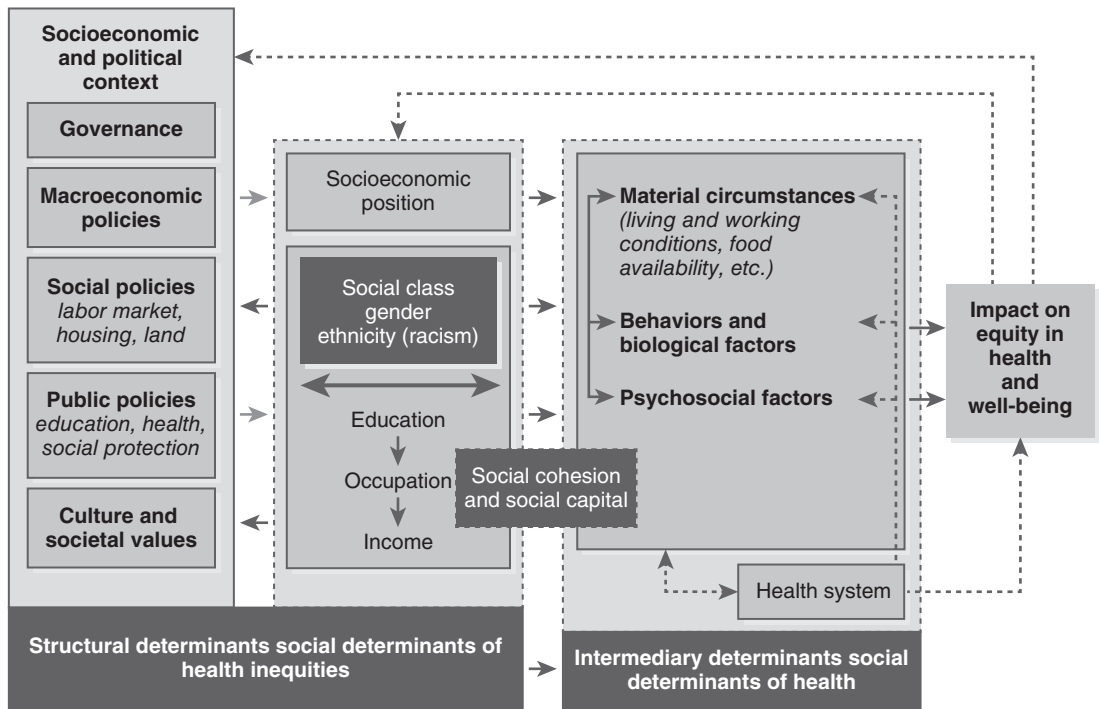


Figure 1-2 Conceptual framework for social determinants of health.

Data from Solar O, Irwin A. A conceptual framework for action on the social determinants of health. Social Determinants of Health Discussion Paper 2 (Policy and Practice). WHO, 2010.

socioeconomic positions, whereby societies are stratified mainly according to income, education, occupation, gender, and ethnicity. These socioeconomic positions, in turn, have an indirect effect on health status, and they operate through a set of specific determinants (intermediary determinants) of health to shape health inequities (Solar & Irwin, 2010).

Structural social determinants are those factors that operate in the social, economic, political, and historical arenas (Solar & Irwin, 2010). Governance, socioeconomic (i.e., labor market, housing, land), and public (i.e., education, health, safety) policies combine with culture and societal values to create the structure of a society. Thus, structural social determinants are policies, legislation, and regulations made by governmental and businesses entities that can exacerbate or improve social inequities that are manifested in the intermediate social determinants. Examples include policies and legislation related to childcare subsidies, inheritance taxes, and same-sex marriage. Often these policies, practices, and regulations create an atmosphere of social injustice for racial/ethnic groups

and other marginalized groups, such as individuals of various sexual orientations, women, and immigrants of color.

Intermediate social determinants of health (**Figure 1-3**) are the conditions in which individuals are born, live and grow, work, and age. The broad categories in which these factors organized are based on differences in lifestyle, such as nutritional habits and physical activity, as well as genetic factors. Psychosocial circumstances are linked to stressful events in the life course. Finally, the health system itself is a social determinant of health. The intermediary determinants are the most immediate mechanism through which socioeconomic position operates on child health inequities; in turn, their identification may contribute to the determination of the interventions at this level.

In addressing social determinants of health, two main types of interventions are used: upstream and downstream (Bharmal et al., 2015). Upstream interventions focus on the public policies made by governing bodies that impact entire populations, including state and national legislatures, school boards, community governments or

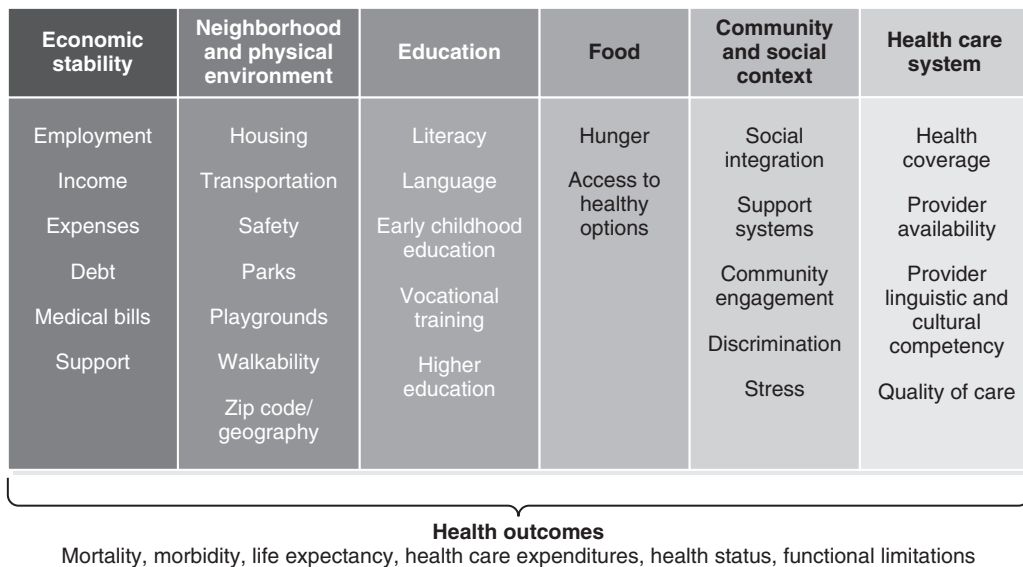


Figure 1-3 Social determinants of health.

Samantha Artiga and Elizabeth Hinton, *Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity*. Kaiser Family Foundation. Published: May 10, 2018. Retrieved from <https://www.kff.org/racial-equity-and-health-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>

organizations, and zoning authorities. These upstream interventions address laws, regulations, ordinances, and budgets, which are often implemented at the downstream level. The downstream level encompasses individuals such as patients, parents, health care providers, and community members; interventions at this level focus on strategies to improve individual-level policies, practices, and behaviors. Identification of and distinction between these levels provides a continuum of opportunities to intervene for maximal and targeted impact at the individual level (downstream) and the societal/decision makers level (upstream).

Upstream interventions include strategies used to decrease and eliminate the social, economic, and educational policies, legislation, and practices that negatively affect or disadvantage the population or group experiencing the disparities. Such an intervention or strategy might be to work assiduously to eliminate racism as manifested in housing and other policies. Another upstream policy is the restoration of the ACA provision of mandating that all employers provide birth control, free of charge, in insurance coverage. Other examples of upstream strategies include expansion of Medicaid coverage to more people and the elimination of food deserts in communities via legislation providing incentives to supermarket chains to address high insurance premiums.

Downstream interventions and strategies are actions that provide equitable access to care and services to mitigate the negative impacts or disadvantages on health. These kinds of approaches include those often implemented in clinic or health care settings. Examples of downstream approaches are linking a pregnant mother with social services to obtain food stamps, which will enable her to purchase nutritious food during pregnancy, and income support. The “River Story” feature highlights the importance of distinguishing between use of downstream (i.e., pulling the babies out of the water) and upstream (i.e., stopping babies from being thrown into the water) approaches in finding solutions to the health disparities or inequalities of mortality, morbidity, or wellness.

River Story

Imagine a large stream with a cascading waterfall. At the bottom of the waterfall, you see hundreds of babies in the water floating by as you and your friends stand on the bank of the stream. Upon seeing these babies, you and your friends jump into action to save the babies from drowning. A passerby, seeing the activity on the bank, looks up to see a never-ending stream of babies falling over the waterfall. He begins to run toward the waterfall. One of your friends hollers at the passerby asking, “Where are you going? There are too many babies floating downstream. We need you to help us so that they don’t drown!” The passerby, looking bewildered, turns and replies, “I’m going upstream to stop the person from throwing the babies into the stream.”

Social inequities result when resources in a society are distributed unevenly, typically through norms of allocation—that is, specific patterns established along the lines of socially defined categories of persons. They represent the differentiated preference for and access to social goods in the society brought about by power, religion, kinship, prestige, race, ethnicity, gender, age, sexual orientation, and class. Social inequality usually implies a lack of equality of outcomes, but may alternatively be conceptualized in terms of a lack of equality of access to opportunities for income or participation. A person’s race, ethnicity, gender, or sexual orientation may lead to the promulgation of policies that create inequalities, or policymakers and legislators may, either intentionally or unintentionally, create social inequities for specific groups (e.g., racial, ethnic, gender).

Connecting the Past to the Present

History is replete with examples of events and trends that created social inequities for African Americans and other racial and ethnic groups. These inequities, though created years ago, have proved so persistent that their effects are still felt

today. Knowing this history is essential to fully understanding structural racism, which influences the social determinants of health as described in the WHO model. This section of the chapter highlights three key policy issues—upstream issues—that have led to generations of economic and health disparities.

Case Example 1: The Social Security Act

The passage of the Social Security Act in 1935, which authorized today's welfare benefits of unemployment and social security payments, was considered a significant piece of legislation that improved the health and well-being of women and families. However, this legislation did not help all families in need and gave advantages to White families over Black families. When the act was passed, it excluded individuals who worked on farms or as domestic help—jobs often held by people of color during the 1930s, due to segregation of the job market. (Lichtenstein et al., 2000, p. 429)

Although African Americans made up 11.3% of the labor force in 1930, they made up 23% of the workers who were not covered when the Social Security Act was enacted (DeWitt, 2010). Thus, the government created a system where its aid was largely reserved for the White population, which lifted many White families out of poverty and further oppressed Black people. Some evidence indicates that this decision was racially motivated—that members of Congress from southern states wanted Black sharecroppers to remain bound to White farm owners, with no alternative to working for meager wages (Lieberman, 1995). Even if the decision to exclude domestic workers and farm workers from coverage was not racially based, this decision created a structural barrier that resulted in a disproportionate share of Black workers being excluded from coverage, compared with White workers. In 1965, Black people gain some access to the nation's social safety net, the Social Security Act remains an inequitable system from the point of view of African Americans. While all workers,

Black and White, pay into the program at the same rate, the dramatically lower life expectancies of African Americans result in their collecting benefits from the program in proportions far below those of White people. As stated, much of this racial discrepancy was designed into the Social Security Act in its original 1935 formulation specifically to disadvantage African Americans. Even though, it is argued that intentional racism was not a factor the Act's origin and some its subsequent revisions, its discriminatory effects linger to the present (Holtz, 1996)

Case Example 2: Redlining and Restrictive Covenants

In the practice of redlining, government and banks mapped out neighborhoods that are considered not suitable for bank loans, mortgages, or insurances (Rothstein, 2017). This practice began in the 1930s and resulted in inequities for Black communities, as the redlined areas were predominantly occupied by Black families. Because these neighborhoods rarely qualified for federal housing assistance or local bank loans, Black communities were underdeveloped in comparison to surrounding White neighborhoods, thus leading to a cycle that deterred future investments. Even though the practice of redlining was banned more than 50 years ago, its aftermath remains salient today. A recent study of Black communities showed that three out of four once redlined communities are still struggling today. In these areas, because of redlining, “grocery stores disappeared, creating food deserts. Hospitals closed and those that remained, like the schools, were substandard because there was little funding behind them (Mitchell & Franco, 2018). Another practice that created social inequities was implementation of restrictive covenants. Restrictive covenants prevented the migration of persons of color into many White neighborhoods during the first half of the 20th century (Welch, 2018). The first racially restrictive covenants emerged in California and Massachusetts at the end of the 19th century, taking the form of limited agreements governing individual parcels of land (Welch,

2018). Within a decade, racially restrictive covenants had been enthusiastically embraced by the real estate industry. African Americans and other people of color had to settle for living in segregated communities, where they faced the problems that accompany residential segregation. The early 20th century was also marked by the rise of sundown towns (in which people of color were threatened with sanctioned harassment and violence after sunset) and the adoption of racial zoning ordinances (Lowen, 2005). Baltimore Mayor Barry Mahool captured the tone of the era when he opined that “Black people should be quarantined in isolated slums in order to reduce the incidents of civil disturbance, to prevent the spread of communicable disease into the nearby White neighborhoods, and to protect property values among the White majority (Silver, 1997).

As speculative suburban development captured the real estate market, community builders sought more secure means to protect their investment from the “economic threat” of racial mixing (Welch, 2018). Racially restrictive covenants became even more appealing in 1926, when the Supreme Court upheld their constitutionality as a form of private contracts. Restrictive covenants even gained approval from the Federal Housing Authority (FHA), which began as a New Deal program that expanded the housing market by insuring low-interest loans for home ownership. The FHA’s 1935 underwriting manual stated, “If a neighborhood is to retain stability it is necessary that properties shall continue to be occupied by the same social and racial classes (FHA, 1936). Furthermore, it noted that a change in social or racial occupancy generally leads to instability and a reduction in value. This language was removed in 1947, but the practice continued. In short, the FHA’s underwriting standards advantaged White and deed-restricted developments, leading to the proliferation of homeowners’ associations.

In 1948, the U.S. Supreme Court, in *Shelley v. Kramer*, held that racially restrictive covenants could not be enforced, but the practice of inserting such covenants into title documents remained common. Finally, in 1968, the Federal Fair Housing Act made the practice of writing racial

covenants into deeds illegal. However, 70 years after the U.S. Supreme Court ruling and 60 years after the passage of the Fair Housing Act, racially restrictive covenants remain common features of deeds. Three reasons are cited for their inclusion: (1) Covenants run with the land so they become part of the land title in perpetuity; (2) to remove covenants is expensive and time-consuming; and (3) many owners may not be aware that their properties are subject to racially restrictive covenants. Despite these challenges, the existence of these covenant should be addressed a policy level, given their legacy.

Case Example 3: The GI Bill

The Servicemen’s Readjustment Act of 1944, commonly known as the GI Bill, is another federal program that discriminated against Black Americans and contributed to intergenerational disadvantages, including opportunities for amassing wealth. The GI Bill provided a range of benefits for returning World War II veterans. White veterans used the government-guaranteed housing loans provided by this act to buy homes in the fast-growing suburbs. Those homes subsequently increased in value and created new household wealth for White people during the postwar era. Black veterans were not able to make use of the GI Bill’s housing provisions for the most part, however, because banks would not make loans for mortgages in Black neighborhoods.

While the GI Bill’s language did not specifically exclude African American veterans from its benefits, it was structured in a way that ultimately shut doors to 12 million African Americans who bravely served in segregated units in World War II.

The GI Bill was administered locally and, in the South, it was adapted to the “southern way of life.” There was an unwillingness to offer loans to African American veterans even when the grants were insured by the federal government (Katznelson & Mettler, 2008). Of the 3,229 GI Bill-guaranteed home, business, and farm loans made in Mississippi, only two were offered to African American veterans (Darity & Mullen, 2020). In short, the GI Bill and other inequalities

related to homeownership enabled a long-term boom in White wealth and did almost nothing to help build Black wealth. Black veterans were unable to pass on wealth in the form of equity in their homes to their offspring, thus creating an intergenerational disadvantage for African Americans. The GI Bill led to other opportunity differences related to higher education and jobs as well. For example, veterans were guaranteed funding for education. In their search for educational opportunities that had been guaranteed, Black veterans fared no better than they had with the housing benefits. As veterans completed applications to attend Northern universities, these universities dragged their feet on admitting them or denied them admission. On the other hand, the Veteran's Administration steered Black veterans to vocational training and then arbitrarily denied their benefits (Herbold, 1994). According to Herbold, "Though Congress granted all soldiers, theoretically, the segregationist principles of almost every institution of higher learning effectively disbarred a huge proportion of Black veterans from earning a college degree." During the period employment, college attendance, and wealth surged for White veterans, while disparities between them and their Black counterparts not only continued but widened. As far as the GI Bill, there was no greater instrument for widening an already huge wealth gap (Katznelson and Mettler, 2008). New data from the 2019 Survey of Consumer Finances (SCF) show the long-standing and substantial wealth disparities between racial and ethnic families (Bhutta, 2020). White families had the highest level of both median and mean family wealth: \$188,200 and \$983,400, respectively. Black and Hispanic families have considerably less wealth than White families. Black families' median and mean wealth was less than 15 percent that of White families, at \$24,100 and \$142,500, respectively. Hispanic families' median and mean wealth is \$36,100 and \$165,500, respectively.

Wealth is a better barometer of inequality than income. In fact, wealth is a source of income since it includes stocks and shares in financial markets which guarantee a source of income

in the forms of dividends and capital gains; holding bonds or savings generates interest. In addition, wealth allows one to purchase better health care, education, and other goods and services.

In unexpected emergencies, such as the COVID19 pandemic, an individual's or a family's wealth can provide them with protection. Wealth, especially liquid wealth—resources that can be readily converted into cash—allows individuals and families to respond to a loss of income due to unemployment and virtually any expenses that may result from a pandemic. Unfortunately, Black and Latinx families are less likely to afford several days—let alone weeks—without income. Black and Latinx households have fewer resources in case of an emergency, such as COVID-19. Thus, the lack of wealth and other disparities account for the disproportionate impact of COVID-19 on Black and Latinx families.

Racism is an umbrella concept that encompasses specific mechanisms that operate at the intrapersonal, interpersonal, institutional, and systemic levels. As described earlier, redlining and restrictive housing covenants put into motion in the 1930s promoted segregation at an institutional and systemic level. In essence, this segregation was created by legislation and reinforced by the policies and practices of economic institutions and housing agencies (e.g., discriminatory banking practices and redlining), as well as enforced by the judicial system and legitimized by churches and other cultural institutions (Darity & Mullen, 2020). Segregation was, and remains, deeply interactive and cumulative. The cumulative and pervasive nature makes racism difficult to measure by the person experiencing it. The evidence linking racism to health disparities is expanding rapidly, demonstrating clear connections between the experience of racism and increased risks and problems such as cardiovascular disease, mental health problems, and preterm birth. Racial factors play an important role in structuring socioeconomic disparities. Disparities based on race and ethnicity, in turn, remain the most persistent and difficult to address (Williams & Mohammed, 2009).

However, addressing socioeconomic factors without addressing racism is unlikely to remedy these inequities.

Layers of Inequities

As described earlier, social inequities are deeply embedded in the fabric of society. These inequities produce systemic disadvantages, which lead to inequitable experiences with the social determinants of health and ultimately shape health outcomes. Following are some examples of additional identities that are subjected to inequities across the life course.

Religious Identity

Religion is a deeply salient, and broadly polarizing, part of human existence. Religion has been used throughout history as a sociological lever for culture change. In the U.S., Christianity, in particular, was positioned to justify the horrors of the transatlantic slave trade, the construction of race, and the narratives that have held it in place. It has also been used to justify the revocation of human rights, such as bodily autonomy, access to health care, and access to contraception.

Queer Identity

The process of becoming pregnant and parenting as a queer woman for gender-expansive individuals assigned female at birth can be profoundly difficult on many levels—socially, emotionally, logistically, and financially. As family compositions change, research and resources must respond to the barriers of family formation. Supporting queer individuals with a full range of conception, birthing, and parenting options can move us toward reproductive justice—a state in which all people have the bodily autonomy to have children, and to build and support a family. Social norms around partnership and family building will continue to change as more options for family building become accessible to all birthing people.

The literature suggests that while queer individuals face higher rates of unwanted, unintended, or mistimed pregnancies compared

to heterosexual individuals, they also face significant barriers to achieving wanted pregnancies (Everett et al., 2017; Hayman et al., 2015). Many queer individuals lack the capacity to become pregnant with their current partner. Some states discriminate against LGBT parents by declining to make foster and permanent child placements with such individuals (Movement Advancement Project, 2021). Legal constraints around adoption also make it a difficult choice, even though same-sex couples can adopt in all 50 states. These structural factors contribute to parenting and pregnancy decisions for queer birthing people.

Transgender Parenting

Transgender people have endured both macro and micro aggressions, oppressions, and opposition just to exist. The devaluation of trans lives, as shown by the disproportionate number of violent attacks and murders committed against such individuals in the U.S., has sparked a social justice response. Trans people have had to fight for many years just to have their individual rights recognized in such basic matters as having public venues agree to self-identification, changing a name, gaining access to health systems, and gender nondiscrimination. Trans people are also birthing people and should be able to have as many children as they want. Gestational paternity is a reality today. Despite more transgender men and nonbinary people becoming pregnant and having children, the specialized scientific literature describing the trans and pregnant experience remains scarce.

Numerous biological, social, psychological, and legal factors may impact a trans person's ability to parent children of their own, all of which have a structural component that may or may not operate in an inclusive framework. Strategies to mitigate barriers for trans birthing people need to be explored so that we can consider trans parenthood more holistically. Currently, although there are no physical barriers to gestational paternity for trans people, social taboos and barriers may deeply affect the experience. Even though there are increasing efforts to raise awareness among

the population so that all birthing people are accepted and supported, the concept is still far minimally accepted. Queer- and trans-serving providers are not necessarily trained in gender justice or reproductive justice, so they may not have an equitable or inclusive lens. Queer- and trans-specialized providers, by contrast, are ready to provide medical information and co-create plans based on shared decision making to intervene and care for their patients

Immigrant Populations

It is not uncommon for undocumented individuals to be detained when seeking out routine health care for themselves or their children (Farfán-Santos, 2019). Although the Health Insurance Portability and Accountability Act of 1996 (HIPAA) is a federal patient–physician privacy law, in some cities undocumented immigrants run the risk of being turned in by their providers to Immigration and Customs Enforcement (ICE), due to interpersonal racism in interactions between providers and undocumented patients. ICE has been used, in the Trump administration especially, as a tool to target and deport people whose immigration status is undocumented. Indeed, research has demonstrated that stress derived from the expectation of racial bias and deportation in the first year of Trump’s presidency negatively affected Latinx birth outcomes (Krieger et al., 2018).

Paid Leave

Despite more than 20 years of research proving the far-reaching benefits of paid family leave, this practice remains a luxury reserved for those who can afford it or whose social networks can handle it. Research indicates the benefits of paid leave on MCH outcomes, breastfeeding rates, mental health, parental life span, and long-term achievement for children. Despite this, most American workers lack access to paid leave to take care of a loved one, a new infant, or even themselves. One-fourth of both Black and Hispanic workers report that they have not been able to take time

off from work for parental, family, or medical reasons in the last 2 years (Horowitz et al., 2017). While Black women have higher participation in the labor force than other demographic groups, they are also more likely to experience unemployment or long gaps in employment, or work in low-wage jobs when compared to White women.

The Family Medical Leave Act (FMLA) Act established the program that acts the source of paid leave for many birthing people and families, yet fewer than one-third of Black working mothers are eligible for the program. The majority of mothers who worked during pregnancy return to work within 6 weeks of giving birth, and nearly one-fourth of mothers return to work less than 2 weeks after giving birth to their infants, contributing to reduced breastfeeding rates among these women (Ogbo et al., 2011).

Intersectionality

Peoples’ lives are not siloed and mutually exclusive, so their challenges are fundamentally inseparable from each other. A single-axis analysis can lead to unnecessary exclusion and conflict in otherwise positive movements for change. In cases where race, gender, religion, class, and sexual identity coalesce to create unique barriers to attaining social goods, research and intervention must be grounded in intersectional analysis that combines these factors (Cho et al., 2013).

Intersectionality enables us to recognize that dynamic group membership can subject people to various forms of bias and oppression, which can be perceived and internalized in many ways. For example, men and women can experience racism, but in different manners because of their gender identity. Intersectionality provides a tool to render certain experiences more visible and points us in the direction of a reframed approach to social justice politics. Responses created with a single-axis lens are not as effective as the intersectional solutions we could create.

Better Frames for Addressing Disparities: Moving Toward Health Equity

Early framing for health disparities sought to explain how patterns of behaviors were clustered in marginalized populations. While this logic was reflective of the culture of health care and medicine at the time, researchers, communities, and equity advocates have since created more robust frames to examine health equity, particularly within the MCH field.

Reproductive justice is defined as the human right to maintain personal bodily autonomy, to have or not have children, and to parent the children we have in safe and sustainable communities.

One such group of Black women, collectively known as the Women of African Descent for Reproductive Justice, understood that the principles espoused by mainstream women's rights and reproductive health movements were largely ignoring marginalized women's and communities' needs, women's bodily autonomy, and human rights frameworks (Ross & Solinger, 2017). These advocates recognized that it was time to center their needs and lead their movement for reproductive justice. The Reproductive Justice founders sought to decenter individual choice, abortion, and contraceptive access, instead utilizing a broad approach encompassing the sociopolitical and economic conditions that dictate women's reproductive outcomes (Sasser, 2018). Critical to understanding the concept of reproductive justice is the notion that a woman's ability to create her reproductive future is correlated with the social and economic conditions of the woman's community. Organizing bodies like the SisterSong Women of Color Reproductive Justice Collective carry the torch for the social justice, policy advocacy and cultural movement of reproductive justice (SisterSong). Utilizing reproductive justice as a framework for health equity ensures that the root causes

contributing to health inequities are examined and addressed.

Further, the reproductive justice framework insists that professionals in maternal health shift from blaming women for having poor health outcomes to holding the systems accountable for programs and policies that directly impact the quality of care as well as barriers to and accessibility of health care services necessary for individuals to curate positive health outcomes (Scott et al., 2019). The reproductive justice framework forces acknowledgment that the social determinants of health are dictated by the fundamental root causes of health inequities, and are held firmly in place by societal belief systems, policies, practices, leadership, and organizational governance (Phelan & Link, 2015). Under this framework, maternal health advocates can focus on developing system-level accountability for operationalizing reproductive justice principles across the reproductive life course.

For those experiencing pregnancy, **pregnancy well-being**, rooted in reproductive justice, asserts that regardless of access to knowledge, power, or wealth, all birthing people are supported by the government and health systems to be physically and mentally well through their pregnancy.

At the root of each of these concepts is the belief that people are valued, that they have the same human rights, and that they are supported by governments and health systems to achieve the best possible health outcomes across the reproductive life span. Applying and operationalizing these basic frameworks not only ensures positive outcomes for Black women and other marginalized women, but can also improve health outcomes for all women.

Birth equity, a term coined by National Birth Equity Collaborative, is the assurance of the conditions supporting optimal birth and well-being for all people, combined with a willingness of systems to address racial and social inequalities in a sustained effort.

While many in the reproductive health community have seemingly embraced reproductive justice, there is a tendency toward use of “reproductive justice” as a buzzword. Such a cavalier attitude allows the user to appear politically progressive while ignoring the racism and oppression that reproductive justice organizes against (Sasser, 2018).

Reproductive well-being is assured when all people have the information, services, and support they need to have control over their bodies and to make their own decisions related to sexuality and reproduction throughout their lives.

Many of those aligning with reproductive justice activist principles focus primarily on abortion access, essentially applying an incrementalist approach to the full reproductive justice framework—that is, preferring to address small increments of change instead of pushing for systemic reform. Black and Indigenous women in the U.S. have envisioned brighter futures for community health outcomes and, ideally, should lead this charge. Operationalization of reproductive justice requires programs to adhere to the fullness of the reproductive justice framework as envisioned by the Women of African Descent for Reproductive Justice, which is the truest, most comprehensive envisioning of reproductive justice that broadens the scope of health outcomes for all women.

Operationalizing reproductive justice requires that we do the following: analyze systems of power that hold in place systemic oppression; incorporate multiple intersecting oppressions and understand how they impact marginalized women; center the most marginalized in our society; and unify across intersectionality to assure human rights for all (SisterSong, n.d.).

Strategies for MCH Policy and Programs

Before we can attest to whether we are on the right path to eliminating health inequities, we must ask ourselves what goals we are working toward. What kind of framework are we using to measure our progress? Mainstream? Community-

BOX 1-1 Reproductive Justice: Human Rights, Social Justice, and Structural Competence

The Women of African Descent for Reproductive Justice have embraced the broader global human rights issues that impact Black women’s reproductive health goals. Synchronizing these global human rights ideas with social justice led to the creation of reproductive justice as a concept of reproductive health not previously considered by maternal health leadership. The radical idea that not only could women decide to have or not have children, but also that those children should be reared in safe and sustainable communities, pointed to larger issues routinely dismissed by the larger social and structural determinants of health. By using a lens that looks at the full life course of reproductive health, from the decision to parent or not parent to the ability to live in a society that ensures that each parent can live in environments that support the full recognition of childhood, this was a revolutionary statement.

The Women of African Descent for Reproductive Justice highlighted a key human rights fallacy in the U.S., which urged a focus on individual behavior while neglecting to see the impact of systemic marginalization and the lack of equitable systems to achieve peak reproductive health. This broadening of the conversation was the precursor to structural competence, encouraging systems to recognize and correct the economic and political factors that create reproductive health inequities in the first place.

Data from SisterSong. How We Achieve Reproductive Justice. <https://www.sistersong.net/reproductive-justice>

centered? If our goals are to drive systems toward equity, the answers are reflected in our current efforts. The following are complementary strategies that MCH organizations, health systems, and funders can take to meaningfully advance equity in MCH outcomes.

Strategy 1: Decolonize Funding and Research

As equity changes and reframes the conversation around outcomes in our health care system,

conversations about equity in funding can open new doors for disrupting long-lasting systems of inequities. Philanthropic redlining—especially when it focuses on research—serves to further notions that devalue the expertise of Black birthing people and the scholarship of Black women scholars (Scott et al., 2020). Unbroken cycles of research funding to primarily White-led institutions suggest that only these institutions possess the scientific rigor and expertise to conduct research, thereby devaluing innovations within the non-White community and implying that solutions to decreasing reproductive morbidity and mortality do not exist within the burdened community, but can only be found outside the community (Scott et al., 2020).

We must continue to reshape MCH by looking at approaches from top to bottom, both upstream and downstream. Reviews of research funding indicate that Black women scholars receive less National Institutes of Health funding than their White peers, despite similar research productivity, publication records, previous research awards, experience, education, and other factors (Ginther et al., 2016). In particular, Black women PhDs and MDs less often receive research awards compared to their White counterparts (Ginther et al., 2016). Black women scholars have deeply personal connections to addressing inequities within their own communities, yet encounter institutional barriers to obtaining mainstream funding that hinder them from pursuing community-based, engaged, and informed research (Black Women Scholars and the Research Working Group of the Black Mamas Matter Alliance, 2020; Scott et al., 2020).

Equity programming at the state and federal levels must acknowledge how previous funding has contributed to inequities in maternal health programming. Care provision varies on a state-by-state basis and is subject to political perspectives that impact health care structures for Black, poor, and other marginalized women.

While recent shifts in allocation of public health dollars have improved the distribution of funds in historically underserved and rural areas, more work remains to be done to ensure that women, no matter which state and political sys-

tems they live under, can access equitable, quality care. Without guiding frameworks to contextualize patterns of inequitable public health spending and outcomes, investments will continue to be made in ineffective ways. The root causes of inequitable funding influence individuals' perceptions of the root causes of disparities. In the past, federal tax dollars have funded misguided programs that have not significantly disrupted cycles of inequity. In conversations about sustainability, public health researchers and funders are often left asking how to sustain gains. If equity is not factored into the equation, the impacts of MCH programs will be term limited.

Additionally, philanthropic structures in the U.S. have contributed to limiting the power and community leadership of organizations seeking to improve health status within minority communities. Some argue that public health funding for maternal mortality research is rooted in the belief that solutions to maternal mortality crises exist outside of community knowledge and internal leadership. Instead of looking at the systems that create the inequities, philanthropy continues to fund these systems that perpetuate disinvestment in community-generated solutions and community-led research and advocacy (Scott et al., 2020). This research injustice serves to diminish both the power and the positioning of the community perspective in maternal health research and practical settings.

It is not immediately clear how equity analysis is occurring behind the scenes of major funders of MCH research and programming. As the path to equity is illuminated, organizations must begin to shift their expectations in regard to the types of research conducted so that policies and intervention development can follow suit. Without this critical engagement in determining what has been funded and what can be funded, the field of MCH will move forward slowly, replicating a model that reinforces the existing inequities in care, policy, and interventions. Funders should consider how women-centered community organizations can build organizational capacity against the backdrop of larger, predominantly White organizations, helping these local organizations continuously secure funding to

work with and research the lives of Black mothers and communities. The equity practices incorporated within the funding algorithms and grant-making practices propagated by funders should be examined as well. Funding organizations must conduct internal racial justice and reproductive health equity readiness assessments to create new standards for funding priorities, algorithms, and expectations, enabling them to determine whether their funding mechanisms obstruct (similar to philanthropic redlining) or truly advance racial justice and health equity (Scott et al., 2020).

One organization working to change this research framing is the Black Mamas Matter Alliance (BMMA). BMMA's research working group, along with its alliance members, has launched an initiative to decolonize maternal health research by introducing principles that should guide research done with, for, and by Black mothers (Black Women Scholars and the Research Working Group of the Black Mamas Matter Alliance, 2020). In part, this work involves advocating for equitable approaches in the research methodologies and drawing attention to Black female researchers whose contributions to the body of research have been largely ignored despite their scientific basis and the innovative frameworks proposed. This dismissal of Black female researchers translates into funding disparities among federal research project grant applicants and limitations in the dissemination of meaningful work.

To address the persistent problems in MCH, innovative community-driven solutions must be sought out—not as supplements to major awardees, but as the first line of solution generation. We require thought leaders to do original research and provide leadership regarding the solutions that Black women need. In keeping with this view, the leadership of nongovernmental organizations has introduced new strategies to fund organizations representing marginalized communities. It is no longer enough to subcontract with organizations representing marginalized communities: Funders must make these organizations leaders and support development of their institutional capacity building. General operation grants can help build

the sustainability of these organizations and thus shift capable organizations away from being consistently designated as sub-awardees.

Strategy 2: Propose Policies and Legislation to Close Equity Gaps

Congresswoman Lauren Underwood, Congresswoman Alma Adams, Senator (now Vice President) Kamala Harris, and members of the Black Maternal Health Caucus developed and introduced the Black Maternal Health Momnibus Act of 2021 to address Black maternal mortality and advance birth equity on the legislative front (Black Maternal Health Caucus Members, 2021). The Momnibus Act aims to address gaps in current legislation that contribute to inequities in Black maternal health. Building on legislative foundations such as the Midwives for MOMS Act, which was designed to diversify the midwifery workforce, and the MOMMA's and Helping MOMS Acts, which focused on extending Medicaid coverage into the 1-year postpartum time period, the Momnibus Act identified additional gaps in policy and created nine bills to comprehensively address the Black maternal mortality crisis (Black Maternal Health Momnibus, 2021). Key to this legislation is inclusion of leadership, scholarship, and advocacy from communities historically marginalized in developing policies that impact communities, with support from more than 120 organizations, including the Black Mamas Matter Alliance and National Birth Equity Collaborative.

The Momnibus package offers opportunities to advance equity by investigating the social and structural determinants of health that impact maternal health outcomes, funding research on maternal health outcomes among incarcerated women and veterans, examining community-based models and programs, and providing support for maternal mental health and substance use treatment. It is visionary in that it broadens that capacity of legislation to look more deeply into the supporting structures that impact a woman's reproductive future.

BOX 1-2 The Black Maternal Health Mamnbibus Act of 2021

The Mamnbibus Act consists of several legislative bills with the following aims (Black Maternal Health Caucus, 2021):

- Make critical investments in social determinants of health that influence maternal health outcomes, such as housing, transportation, and nutrition.
- Provide funding to community-based organizations that are working to improve maternal health outcomes for Black women.
- Comprehensively study the unique maternal health risks facing women veterans and invest in Veterans Administration (VA) maternity care coordination.
- Grow and diversify the perinatal workforce to ensure that every mother in America receives maternity care and support from people she can trust.
- Improve data collection processes and quality measures to better understand the causes of the maternal health crisis in the U.S. and inform solutions to address it.
- Invest in maternal mental health care and substance use disorder treatments.
- Improve maternal health care and support for incarcerated women.
- Invest in digital tools such as telehealth to improve maternal health outcomes in underserved areas.
- Promote innovative payment models to incentivize high-quality maternity care and continuity of health insurance coverage from pregnancy through labor and delivery and up to 1-year postpartum.

Policymakers working on maternal and infant health inequities must value the health of pregnant women and birthing people both in theory and in practice. Ensuring the availability of high-quality, affordable, and universal childcare; implementing comprehensive national paid family and medical leave policy; and enforcing and expanding the Pregnancy Discrimination Act may improve birth outcomes and quality of life for all families. Reproductive justice demands economic justice, which can only come through intersectional policymaking.

The Black Maternal Health Mamnbibus Act is endorsed by more than 120 organizations: the Black Mamas Matter Alliance; Black Women’s Health Imperative; National Birth Equity Collaborative; Mamatoto Village Inc; Ancient Song Doula Services; National Perinatal Task Force; Commonsense Childbirth; NAACP; American College of Obstetricians and Gynecologists; Center for Reproductive Rights; National Partnership for Women and Families; March for Moms; Association of Maternal and Child Health Programs; March of Dimes; Society for Maternal–Fetal Medicine; American Academy of Family Physicians; Families USA; Every Mother Counts; Association of Women’s Health, Obstetric and Neonatal Nurses; American College of Nurse–Midwives; Blue Cross Blue Shield Association; Federation of American Hospitals; America’s Health Insurance Plans; National Association of Nurse Practitioners in Women’s Health; Moms Rising; Mom Congress; Center for American Progress; Planned Parenthood Federation of America; NARAL Pro-Choice America; American Public Health Association; National Council of Urban Indian Health; National Association of Certified Professional Midwives; National WIC Association; First Focus Campaign for Children; American College of Physicians; Northwestern Medicine; Ann and Robert H. Lurie Children’s Hospital of Chicago; National Women’s Law Center; DONA International; Physician Assistant Education Association; Health Care Transformation Task Force; Centering Healthcare Institute; Nurse–Family Partnership; American Organization for Nursing Leadership; National Organization for Women; In Our Own Voice; National Black Women’s Reproductive Justice Agenda; Preeclampsia Foundation; WomenHeart: The National Coalition for Women with Heart Disease; National Health Law Program; Blavatnik Family Women’s Health Research Institute, Icahn School of Medicine, Mount Sinai; Northwestern University’s Center for Health Equity Transformation; Shades of Blue Project; Access Community Health Network; Association of Black Cardiologists; Trust for America’s Health; Society for Public Health Education; Alliance Chicago; Jacobs Institute of Women’s Health; Urban Mommy Inc; Save

the Mommies; California Breastfeeding Coalition; Northern Illinois Church of God in Christ; Circle Up: United Methodist Women for Moms; Muslims for Progressive Values; National Council of Jewish Women; American Association of Birth Centers; Lamaze International; Children’s Health Fund; Center for Black Women’s Wellness; Alliance for Early Success; Sésé Doula Services; Johnson & Johnson; Association of State Public Health Nutritionists; Community Catalyst; Society for Nutrition Education and Behavior; A Better Balance; Power to Decide; Raising Women’s Voices for the Health Care We Need; APS Foundation of America; African American Breastfeeding Network; Healing Hands Community Doula Project; HealthConnect One; Women’s Health and Family Planning Association of Texas; SisterReach; Children’s Defense Fund (Texas); United Way of Texas; Breastfeed LA; Pretty Mama Breastfeeding; Advanced Practice Wellness; Children’s HealthWatch; National Association of Professional and Peer Lactation Supporters of Color; Indiana Religious Coalition for Reproductive Choice; Dem Black Mamas Podcast; Atlanta Doula Collective; Majaica and Save 100 Babies; Afiya Center; Ounce of Prevention Fund; MS Black Women’s Roundtable; Black Mamas ATX; Hollywood NOW; YWCA USA; Mama Glow; Nzuri Malkia Birth Collective; Mothering Justice; Black Women for Wellness; Physicians for Reproductive Health; Diversity Uplifts; Restoring Our Own Through Transformation; Cityblock Health; Black Women Birthing Justice; Alliance for the Implementation of Clinical Practice Guidelines; National Action Network; Childbirth and Postpartum Professional Association; National Association to Advance Black Birth; Sista Midwife Productions; Doula Philosophy; and What to Expect Project. Individual endorsers are Dr. Jamila Taylor, Director of Health Care Reform, Century Foundation; Elizabeth Dawes Gay, MPH, founder of Sisu Consulting and co-founder of Black Mamas Matter Alliance; Elizabeth A. Howell, Director, Blavatnik Family Women’s Health Research Institute, Icahn School of Medicine, and Mount Sinai.

Strategy 3: Prioritize Learnings from Communities Experiencing Burden of Inequities

Anything done about us, without us, is not for us.

—Loretta Ross, founding mother of Reproductive Justice

Going beyond their place as tokenized voices, leadership roles should be taken by communities affected by negative maternal health outcomes. Passing the microphone is the only strategy worth pursuing; speaking for the voiceless is no longer an option. As a part of adopting an antiracism approach, health departments, government, and nongovernmental organizations must review the composition of leadership, positioning of community members, and community voices they seek to impact. Are community members relegated to tokenized roles? Or are community members placed on an equal footing with other leaders in terms of organizational projects, program direction, and data collection and sharing? Are community members paid for their time? Meaningful engagement with communities requires full partnership and the ability and capacity to see one another as equal partners for decision making. Meaningful community engagement tenets include that organizations must review meaningful community engagement principles to ensure they are working toward organizational change that reflects antiracist values.

One notable example of community-derived research and voice is the work done by Black Mamas Matter Alliance (BMMA). BMMA developed a core set of principles describing principles of Holistic Maternity Care for Black Mamas (**Box 1-3**). Within BMMA, reproductive health organizations, midwives, birth paraprofessionals, OB-GYNs, researchers, and policy advocates, along with centers focusing on human rights and reproductive justice and the lived experiences of Black women, sought to derive a set of principles to reduce maternal morbidity and mortality. The resulting principles of holistic maternity care for Black women emphasize centering in the

BOX 1-3 Principles of Holistic Maternity Care for Black Mamas

According to BMMA, holistic maternity care:

- Addresses gaps in care and ensures continuity of care
- Is affordable and accessible
- Is confidential, safe, and trauma-informed
- Ensures informed consent
- Is Black Mama-, family-, and parent-centered and patient-led
- Is culturally informed and includes traditional practices
- Is provided by culturally competent and culturally congruent providers
- Respects spirituality and spiritual health
- Honors and fosters resilience
- Includes the voices of all Black Mamas
- Is responsive to the needs of all genders and family relationships
- Provides wraparound services and connections to social services

Reproduced from Sunshine Muse (2018), *Setting the Standard for Holistic Care of and for Black Women*. Black Mamas Matter Alliance (BMMA).

community, cultural rigor, and racial and birth equity to ensure improved care for Black mothers and Black communities—those at the heart of the U.S. maternal mortality crisis. While these principles were developed with Black women, they also apply more broadly to providers working with other marginalized communities, including Latinx and LGBTQIAA (lesbian, gay, bisexual, transgender, questioning, intersex, asexual, and ally) clients.

Drawing on the principles, recommendations for those who provide care for Black women are as follows:

- Listen to Black women.
- Recognize the historical experiences and expertise of Black women and families.
- Provide care through a reproductive justice framework.
- Disentangle care practices from the racist beliefs in modern medicine.

- Replace White supremacy and patriarchy with a new care model.
- Empower all patients with health literacy and autonomy.
- Empower and invest in paraprofessionals.
- Recognize that access does not equal quality care (Black Mamas Matter Alliance, 2020).

Other policy efforts include recent measures to improve access to midwife and doula support. Nearly 100 years after the Sheppard-Towner Act began shrinking the numbers of Black midwives, a number of Black midwifery models working with women of color, using culturally competent, evidence-based, and cost-effective midwifery and maternity care home models, are reemerging to reduce birth inequities. Central to improving birth equity is implementation of a birthing center model that focuses on family and holistic maternity care and that acknowledges the social context in which women live.

For example, Commonsense Childbirth, a model program based in Florida, offers easy access prenatal care clinics that are affordable and accessible to women who are indigent, underinsured, uninsured, or otherwise vulnerable to poor outcomes due to their lack of a maternal medical home (Day, 2014). Care delivery within Commonsense's JJ Way approach hinges on bonding with mothers through respect, self-reliance, easy access to prenatal care, an intentional coordinated mother/family/staff support team, parental education, encouragement, and empowerment. Women are allowed freedom of choice throughout the care process, deciding where and how they would like to give birth. Mothers are considered equal partners in decision making, as evidenced by the provision of health educational materials at the appropriate literacy level, access to tangible medical records, and support for the mother's autonomy and self-reliance. The JJ Way also facilitates a unified care approach among all health care members, from the receptionist to office manager to provider. This unified approach follows the mother throughout her care, with

staff conducting weekly meetings to review each mother's case, enabling them to identify gaps in care and related supports and tailor services to each woman's unique social circumstances. The team works collaboratively to deliver multiple methods of education, through peers as well as informal and extra time with providers, to ensure women receive consistent supportive and postpartum-specific messages. The JJ Way also incorporates family members, the father of the baby, and other pregnancy supports to build the social capital around the mother needed for pregnancy and delivery success (Day, 2014).

The literature has identified doulas as a cost-saving support whose services can increase quality of care, improve satisfaction with childbirth experience, and reduce rates of cesarean section, postpartum depression, and other poor outcomes for women of color (Attanasio & Kozhimannil, 2015; Bohren et al., 2017). Operationalizing these models must be intentional about incorporating the community-based doulas who have traditionally cared for marginalized Black and Brown women, so as to ensure equity and incorporate sustainable models that are already present within these communities.

Strategy 4: Adopt an Antiracist Stance as an Organization

It is no longer enough to be nonracist; instead, organizations must be actively antiracist and committed to undoing community harm inflicted by society, the field, and both themselves and their predecessor organizations. Organizational reviews and related antiracism trainings are expected to increase in many communities after the eruption of racial justice protests in 2020, followed by a violent 2021 insurrection; both of which were highly racialized social and political events. Critically analyzing organizational policies and harms done as a result and seeking to understand passive colorblindness are no longer enough to ensure equity in an organization's

impact. Rather, they represent just a first step in undoing harm and committing to continued critical analysis of the organization's methods, funding, programming, and internal- and external-facing policies. Adopting antiracism as a theme, without engaging in a critical assessment of an organization's actions, results in just a slogan without the necessary support to shift the organization's culture and policies.

Strategy 5: Employ Respectful Maternity Care

Every birthing person has the right to dignified, respectful care throughout pregnancy and childbirth (Khosla et al., 2016). Implementing the Standards for Respectful Maternity Care (RMC) will contribute to improving the quality of care provided to women who have been marginalized—and ultimately to all women. The New York City Health Department has spearheaded the development and rollout of these standards in an effort to reduce the inequities in maternal mortality and morbidity between Black and White women. The core standards of NYC RMC are education, informed consent, decision making, support, and nondiscrimination. Closely tied to reproductive and birth justice, these standards reinforce the idea that every birthing person has the right to safe, respectful, and quality care with freedom and support to make decisions about pregnancy, childbirth, and postpartum with dignity (NYC Department of Health and Mental Hygiene, 2018).

Strategy 6: Improve Data Collection and Analyses Processes

State-level policies guide the collection and analyses of maternal mortality and morbidity data. To determine the extent of equity in these system-level processes, services provision, and health outcomes, we must examine how data are

utilized to support health equity. Organizations limit their ability to examine equity issues when they dismiss data-related concerns and do not look more deeply at racial disparities in outcomes. In recent years, data analysis utilizing a health equity lens has been limited within maternal mortality and morbidity review committees (Global Health Justice Partnership - Yale Law School, n.d.). Without a lens that enables them to look more closely at the systemic factors contributing to morbidity and mortality, these committees' recommendations will continue to perpetuate harm based on assumptions that absolve systems of responsibility and instead pin blame on individual behaviors. As the U.S. mortality and morbidity crises vary by state, the resulting state decisions, policies, and procedures will be factors that impact maternal health outcomes for Black mothers. Utilizing racial data to examine state policies and systems can support better understanding of ways to mitigate poor health outcomes.

Strategy 7: Provide Visionary Leadership

Forging a path toward health equity requires visionary leadership to shift and restructure organizations. Examining the harm committed by organizations and reckoning with that harm, regardless of the organizations' original intent, is a task for courageous leadership. Previous generations of public health and medical leaders envisioned and implemented the system we currently operate under. As public health leaders, we can develop new systems that support all people and cultivate leaders who can bring us closer to the vision of health equity. Doing so requires that we are honest about the impact of decades of discriminatory policies, racist and biased beliefs about people, and our desire to uphold new frameworks and principles that support the achievement of health equity for all people. This is certainly not a menial task.

Maternal health advocates must seek visionary leaders across the field who will strive to shift national legislation, shake up provider education practices, reconsider funding patterns, and seize new opportunities to shift the landscape by supporting representative research, programming, and policies, as well as courageous leaders who can guide major changes in organizational culture.

Summary and Charge for the Future

MCH, with its foundational roots in social justice and protection of nonprotected classes, is at a critical inflection point. The murders of George Floyd and Breonna Taylor, both Black, by police have sparked a global movement to end the belief in a hierarchy of human value based on skin color (Movement for Black Lives, n.d.). To achieve that goal, we must have truth, racial healing, and transformation (Christopher, 2016). Birth equity and reproductive justice provide MCH advocates with frameworks to acknowledge the historical wrongs caused by a White-dominated culture, such as in regard to family planning and population control (Roberts, 2015). Building on this truth telling will allow us to build an intersectional movement for reproductive and sexual well-being, where children's rights and maternal rights are not seen in opposition to one another for birthing people of color, unlike in our current child welfare system. We recognize that it is racism that drives racial inequities in MCH outcomes and it is racism that created race. We need to be actively antiracist and anti-incrementalist (Kendi, 2019; Levmore, 2010). We are transforming our system to one where all people can thrive. MCH has a critical role to play in ending racism, classism, and gender oppression so that the social determinants of health inequities no longer cause disparities in morbidity and mortality.

WRAP-UP

Discussion Questions

1. What is the role of public health leaders in changing the narrative around health disparities? The role of local health departments? The role of hospitals and clinics? The role of community organizations? Nonprofit organizations?
2. What are two concrete actions that MCH leaders can take to reframe health disparities?
3. What are two concrete action policies and action steps that the federal government can take to ensure equity for these populations? Which sectors should government partner with for these actions?
4. In what ways have communities led efforts to reframe health disparities? What additional support would be helpful?
5. What are the central components of reproductive justice? How do these components overlap with social justice activism?

References

- Anderson, N. B., Bulatao, R. A., & Cohen, B. (Eds.). (2004). *Understanding racial and ethnic differences in health in late life: A research agenda*. Washington, DC: National Academies Press.
- Artiga, S., & Hinton, E. (2018, May 10). Beyond health care: The role of social determinants in promoting health and health equity. Kaiser Family Foundation. Retrieved January 21, 2021, <https://www.kff.org/racial-equity-and-health-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>
- Attanasio, L., & Kozhimannil, K. B. (2015). Patient-reported communication quality and perceived discrimination in maternity care. *Medical Care*, 53(10), 863–871. <https://doi.org/10.1097/MLR.0000000000000411>
- Baumgartner, J., Collins, S., Radley, DC., & Hayes, S. (2020). How the Affordable Care Act Has Narrowed Racial and Ethnic Disparities in Access to Health Care. Commonwealth Fund. Retrieved February 15, 2021 from <https://www.commonwealthfund.org/publications/2020/jan/how-aca-narrowed-racial-ethnic-disparities-access>
- Bailey, Z., Krieger, N., Agénor, M., Graves, J., Linos, N., & Bassett, M. (2017). Structural racism and health inequities in the USA: evidence and interventions. *The Lancet*, 389(10077), 1453–1463. [https://doi.org/10.1016/s0140-6736\(17\)30569-x](https://doi.org/10.1016/s0140-6736(17)30569-x)
- Bharmal, N., Pitkin, K., Derose, M., & Weden, M. (2015). *Understanding the Upstream Social Determinants of Health*. RAND Health WR-1096-RC. Prepared for the RAND Social Determinants of Health Interest Group. Retrieved February 15, 2021 from https://www.rand.org/pubs/working_papers/WR1096.html
- Bhopal, R. (2004). Glossary of terms relating to ethnicity and race: for reflection and debate. *Journal of epidemiology and community health*, 58(6), 441–445. <https://doi-org.ezproxy.hsc.usf.edu/10.1136/jech.2003.013466>
- Bhopal, R., & Rankin, J. (1999). Concepts and terminology in ethnicity, race and health: Be aware of the ongoing debate. *British Dental Journal*, 186, 483–484.
- Bhutta, N., Chang, A., Detling, L., & Hsu, J. (2020). Disparities in Wealth by Race and Ethnicity in the 2019 Survey of Consumer Finances, FEDS Notes. Washington: Board of Governors of the Federal Reserve System, September 28. <https://doi.org/10.17016/2380-7172.2797>
- Black Women Scholars and the Research Working Group of the Black Mamas Matter Alliance. (2020). The Politics of Pregnancy: Black Maternal Health Research Re-Envisioned: Best Practices for the Conduct of Research With, For, and By Black Mamas. Harvard Law and Policy Review. 14, 393–415 Retrieved February 15, 2021 from <https://harvardlpr.com/wp-content/uploads/sites/20/2020/11/BMMA-Research-Working-Group.pdf>
- Black Mamas Matter Alliance—Advancing Black Maternal Health. (n.d.). Black Mamas Matter Alliance. Retrieved February 14, 2021, <https://blackmamasmatter.org/>
- Black Maternal Health Momnibus. (2021). Black Maternal Health Caucus. Retrieved February 15, 2021 from <https://blackmaternalhealthcaucus-underwood.house.gov/Momnibus>
- Bohren, M. A., Hofmeyr, G. J., Sakala, C., Fukuzawa, R. K., Cuthbert, A., & Bohren, M. A. (2017). Continuous support for women during childbirth. *Cochrane Library*, 2017(8), CD003766–CD003766. <https://doi.org/10.1002/14651858.CD003766.pub6>

- Boozary, A. (2015). President Donald Trump is a Threat to Public Health. *Harvard Public Health Review*. Retrieved February 15, 2021 from <http://harvardpublichealthreview.org/the-inauguration-of-donald-trump/>
- Braveman, P. A., Kumanyika, S., Fielding, J., LaVeist, T., Borrell, L. N., Manderscheid, R., & Troutman, A. (2011). Health disparities and health equity: The issue is justice. *American Journal of Public Health, 101*(suppl 1), S149–S155.
- Caucus Members. (n.d.). Black Maternal Health Caucus. Retrieved February 14, 2021, <https://blackmaternal-healthcaucus-underwood.house.gov/members>
- Cho, S., Williams, C., & McCall, L. (2013). Toward a field of intersectionality studies: Theory, applications, and praxis: intersectionality: Theorizing power, empowering theory. *Signs: Journal of Women in Culture and Society, 38*(4), 785–810.
- Christopher, G. C. (2016). The time for truth, racial healing & transformation is now. *Liberal Education, 102*(4), 8.
- Cohan, A. S. (1986). No legal impediment: Access to abortion in the United States. *Journal of American Studies, 20*(2), 189–205.
- Daniels, N. (2002). Justice, health, and health care. In R. Rhodes, M. Battin, & A. Silvers (Eds.), *Medicine and social justice: Essays on the distribution of health care* (pp. 6–23). New York: Oxford University Press.
- Daniels, N., Kennedy, B. P., & Kawachi, I. (1999). Why justice is good for our health: The social determinants of health inequalities. *Daedalus, 128*(4), 215–251.
- Darity, W., & Mullen, K. A. (2020). *From here to equality: Reparations for Black Americans in the twenty-first century*. Chapel Hill, NC: University of North Carolina Press.
- Day, S. J. (2014). *Exploring The JJ Way®: A Model of Care for Reducing Disparities and Improving Perinatal Health* [ProQuest Dissertations Publishing]. Retrieved February 15, 2021 from <https://pqdtopen.proquest.com/doc/1566193765.html?FMT=ABS>
- DeWitt, L. (2010). The decision to exclude agricultural and domestic workers from the 1935 Social Security Act. *Social Security Bulletin, 70* (4), 49–68.
- Dorsen, N., & Reznick, D. (1967). *In re Gault* and the future of juvenile law. *Family Law Quarterly, 1*(4), 1–46.
- Du Bois, W. E. B. (1899). *The Philadelphia negro: A social study*. Philadelphia: University of Pennsylvania Press.
- Everett, B. G., McCabe, K. F., & Hughes, T. L. (2017). Sexual orientation disparities in mistimed and unwanted pregnancy among adult women: Sexual orientation and unintended pregnancy. *Perspectives on Sexual and Reproductive Health, 49*(3), 157–165. <https://doi.org/10.1363/psrh.12032>
- Farfán-Santos, E. (2019). Undocumented motherhood: Gender, maternal identity, and the politics of health care. *Medical Anthropology, 38*(6), 523–536. <https://doi.org/10.1080/01459740.2019.1587421>
- Federal Register / Vol. 62, No. 210 / Thursday, October 30, 1997 <https://www.govinfo.gov/content/pkg/FR-1997-10-30/pdf/97-28653.pdf>
- Federal Housing Administration (FHA). (1938). *Underwriting Manual: Underwriting and Valuation Procedure Under Title II of the National Housing Act*. (Washington, D.C.), Part II, Section 2, Rating of Location. Retrieved February 15, 2021 from <https://www.huduser.gov/PORTAL/publications/Federal-Housing-Administration-Underwriting-Manual.html>
- Frey, W. (2018). *The US will become “minority” white in 2045, Census projects: Youthful minorities are the engine of future growth*, Brookings Institute. Retrieved February 15, 2021 from <https://www.brookings.edu/blog/the-avenue/2018/03/14/the-us-will-become-minority-white-in-2045-census-projects/>
- Ginther, D. K., Kahn, S., & Schaffer, W. T. (2016). Gender, race/ethnicity, and national institutes of health R01 research awards: Is there evidence of a double bind for women of color? *Academic Medicine, 91*(8), 1098–1107. <https://doi.org/10.1097/ACM.0000000000001278>
- Global Health Justice Partnership—Yale Law School. (n.d.). Retrieved February 14, 2021, <https://law.yale.edu/ghjp>
- Gostin, L., & Powers, M. (2006). What does social justice require for the public’s health? *Health Affairs, 25*(4), 1053–1060.
- Hayman, B., Wilkes, L., Halcomb, E., & Jackson, D. (2015). Lesbian women choosing motherhood: The journey to conception. *Journal of GLBT Family Studies, 11*(4), 395–409. <https://doi.org/10.1080/1550428X.2014.921801>
- Healthy People: The Surgeon General’s Report on Health Promotion and Disease Prevention. (1979). Office of the Assistant Secretary for Health, Public Health Service (DHHS), Rockville, Maryland. Retrieved February 15, 2021 from <https://profiles.nlm.nih.gov/spotlight/nn/catalog/nlm.nlmuid-101584932X92-doc>
- Healthy People 2010. (2011). Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. Retrieved February 15, 2021 from https://www.cdc.gov/nchs/healthy_people/hp2010/hp2010_final_review.htm
- Healthy People 2020. (2010). Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. Retrieved February 15, 2021 from https://www.cdc.gov/nchs/healthy_people/hp2020.htm
- Health People 2030. (n.d.). Healthy People 2030 Development and Framework. Retrieved February 15, 2021 from <https://www.healthypeople.gov/2020/About-Healthy-People/Development-Healthy-People-2030/Framework>
- Herbold, H. (1994). Never a level playing field: Black people and the GI Bill. *The Journal of Black People in Higher Education, 6*(Winter, 1994-1996), 104–108. <https://doi.org/10.2307/2962479>
- Hoffman, F. (1896). Race traits and tendencies of the American Negro. *Publications of the American Economic Association, 11*(1-3), 329. New York: The Macmillan Company. <https://doi.org/10.1177/000271629700900108>
- Holtz, G. (1996). Social Security Discrimination against African-Americans: An Equal Protection Argument. *Hastings Law Journal, 48*(1), 105–127. https://repository.uchastings.edu/hastings_law_journal/vol48/iss1/4

- Horowitz, J.L., Parker, K., Graf, N., Livingston, G. (2017, March 23). An inside look at family and medical leave in America. *Pew Research Center's Social & Demographic Trends Project*. Retrieved February 15, 2021 from <https://www.pewresearch.org/social-trends/2017/03/23/an-inside-look-at-family-and-medical-leave-in-america-the-experiences-of-those-who-took-leave-and-those-who-needed-or-wanted-to-but-couldnt/>
- Johnson, J. W. (1997). *The struggle for student rights: Tinker v. Des Moines and the 1960s*. Lawrence, KS: University Press of Kansas.
- Katznelson, I., & Mettler, S. (2008). On race and policy history: A dialogue about the G.I. Bill. *Perspectives on Politics*, 6(3), 519–537.
- Kendi, I. X. (2019). *How to be an antiracist*. New York: One World Publishers.
- Khosla, R., Zampas, C., Vogel, J., Bohren, M., Roseman, M., & Erdman, J., (2016). International human rights and the mistreatment of women during childbirth. *Health and Human Rights*, 18(2), 131–143.
- Krieger, N., Huynh, M., Li, W., Waterman, P. D., & Van Wye, G. (2018). Severe sociopolitical stressors and preterm births in New York City: 1 September 2015 to 31 August 2017. *Journal of Epidemiology and Community Health*, 72(12), 1147–1152.
- Levmore, S. (2010). Interest groups and the problem with incrementalism. *University of Pennsylvania Law Review*, 158(3), 815–858.
- Lichtenstein, N., Strasser, S., Rosenzweig, R., & Bier, S. (2000). *Who built America? Working people and the nation's economy, politics, culture, and society*. New York, NY: Worth Publishers.
- Lieberman, R. (1995). Race, institutions, and the administration of social policy. *Social Science History*, 19(4), 514–515.
- Lowen, J. (2005). *Sundown towns: A hidden dimension of American racism*. New York: The New Press.
- Marks, R., & Jones, N. (2020). *Collecting and Tabulating Ethnicity and Race Responses in the 2020 Census*. Race & Ethnicity Research and Outreach Population Division, U.S. Census. Retrieved February 15, 2021 from <https://www2.census.gov/about/training-workshops/2020/2020-02-19-pop-presentation.pdf>
- McGowan, B. G. (2010). An historical perspective on child welfare. In S.B. Kamerman, S. Phipps, & A. Ben-Arieh, (Eds.), *From child welfare to child well-being. Children's well-being indicators and research* (Vol 1, pp. 24–48). New York: Springer. https://doi.org/10.1007/978-90-481-3377-2_2
- McLeod, C. (2018). *Are Children Rights Important? Philosophical Foundations of Children's Rights and Family Law*. Brake, E., & Ferguson, L. (Eds.). New York: Oxford University Press, 190–208.
- Meier, B. M. (2017). Human rights in the World Health Organization: Views of the Director-General candidates. *Health and Human Rights*, 19(1), 293–298.
- Mitchell, B., & Franco, J. (2018). *HOLC Redlining Maps: The Persistent Structure of Segregation and Economic Inequality*. National Community Reinvestment Coalition Research, March 20, 2018. Retrieved February 15, 2021 from <https://ncrc.org/holc/March20>
- Mitchell, P. (2018). The fault in his seeds: Lost notes to the case of bias in Samuel George Morton's cranial race science. *PLoS Biology*, 16(10), e2007008.
- Morning, A. (2007). "Everyone knows it's a social construct": Contemporary science and the nature of race. *Sociological Focus*, 40(4), 436–454.
- Movement Advancement Project | Foster and Adoption Laws. (n.d.). Retrieved August 11, 2020 from https://www.lgbtmap.org/equality-maps/foster_and_adoption_laws
- NCSL-National Conference of State Legislatures (2011). *The Affordable Care Act: A Brief Summary*. Retrieved February 15, 2021 from <https://www.ncsl.org/portals/1/documents/health/HRACA.pdf>
- Ogbuanu, C., Glover, S., Probst, J., Liu, J., & Hussey, J. (2011). The effect of maternity leave length and time of return to work on breastfeeding. *Pediatrics*, 127(6), e1414–e1427. <https://doi.org/10.1542/peds.2010-0459>
- OMB. (1977). Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Retrieved February 15, 2021 from <http://www.whitehouse.gov/omb/fedreg/1997standards.html>
- O'Neil, D. (2008). Ethnicity and race: An Introduction to the Nature of Social Group Differentiation and Inequality. Retrieved February 15, 2021 from <https://www2.palomar.edu/anthro/ethnicity/Default.htm>
- Pappas, A. M. (1983). Introduction. In A. M. Pappas (Ed.), *Law and the status of the child* (pp. xxvii–lv). New York, NY: United Nations Institute for Training and Research.
- Phelan, J., & Link, B. (2015). Is Racism a Fundamental Cause of Inequalities in Health? *Annual Review of Sociology*. (n.d.). Retrieved December 19, 2020, <https://www.annualreviews.org/doi/abs/10.1146/annurev-soc-073014-112305?journalCode=soc>
- Rawls, J. (1971). *A theory of justice*. Cambridge, MA: Harvard Press.
- Report of the Secretary's Task Force on Black and Minority Health, Task Force on Black Minority Health, and Task Force on Black and Minority Health. (1985). United States Department of Health and Human Services. Task Force on Black and Minority Health, Heckler, Margaret. Washington, D.C.: U.S. Dept. of Health and Human Services.
- Ross, L., & Solinger, R., 1947. (2017). *Reproductive justice: An introduction* (Vol. 1). University of California Press. <https://www.ucpress.edu/book/9780520288201/reproductive-justice>

- Rothstein, R. (2017). *The color of law: A forgotten history of how our government segregated America*. New York; London: Liveright Publishing Corporation, a division of W.W. Norton & Company.
- Sandefur, D., Campbell, M., & Eggerling-Boeck, J. (2004). Racial and ethnic identification, official classifications, and health disparities. National Research Council Panel on Race, Ethnicity, and Health in Later Life., National Academies Press, Washington, DC.
- Sasser, J. S. (2018). *On infertile ground: Population control and women's rights in the era of climate change*. NYU Press.
- Scott, K. A., Bray, S., & McLemore, M. R. (2020). First, do no harm: Why philanthropy needs to re-examine its role in reproductive equity and racial justice. *Health Equity*, 4(1), 17–22. <https://doi.org/10.1089/heq.2019.0094>
- Scott, K. A., Britton, L., & McLemore, M. R. (2019). The ethics of perinatal care for black women: Dismantling the structural racism in “mother blame” narratives. *The Journal of Perinatal & Neonatal Nursing*, 33(2), 108–115. <https://doi.org/10.1097/JPN.0000000000000394>
- Silver, C. (1997). The racial origins of zoning in American Cities. In C. Silver, M. Thomas, J. Ritzdorf, & M. Ritzdorf (Eds.), *Urban Planning and the African American Community*. SisterSong. (n.d.). Sister Song. Retrieved February 14, 2021 from <https://www.sistersong.net/mission>
- Solar, O., & Irwin, A. (2010). *A conceptual framework for action on the social determinants of health*. Social Determinants of Health Discussion Paper 2 (Policy and Practice). Geneva, Switzerland: World Health Organization. Retrieved February 15, 2021 from https://www.who.int/sdhconference/resources/ConceptualframeworkforactiononSDH_eng.pdf
- Turner, A. (2018). *The Business Case for Racial Equity, A Strategy for Growth*, (W.K. Kellogg Foundation and Altarum <https://altarum.org/publications/the-business-case-for-racial-equity-a-strategy-for-growth>)
- UNICEF. (n.d.). Convention on the Rights of the Child. Retrieved November 5, 2020, from <https://www.unicef.org/child-rights-convention>
- US. Department of Health and Human Services. (1998). Tobacco Use Among U.S. Racial/Ethnic Minority Groups—African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanic people: A Report of the Surgeon General. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
- Walker, N., Brooks, C., & Wrightsman, L. (1999). *Children's Rights in the United States: In Search of National Policy*. Thousand Oaks, CA: Sage Publication.
- Welsh, N. H. (2018). *Racially restrictive covenants in the United States: A call to action*. *Agora Journal of Urban Planning and Design*, 130–142.
- World Health Organization. (2005). In the Constitution of the World Health Organization: Basic documents. 45th ed. Geneva: World Health Organization. [Google Scholar]
- Williams, D., Lavizzo-Mourey, R., & Warren, R. (1994). The concept of race and health status in America. *Public Health Reports* 109(1), 26–41.
- Williams, D., & Mohammed, S. (2009). Discrimination and racial disparities in health: Evidence and needed research, *Journal of Behavioral Medicine*, 32, 20–47.
- Wolff, M. J. (2006). The myth of the actuary: Life insurance and Frederick L. Hoffman's race traits and tendencies of the American Negro. *Public Health Reports*, 121(1), 84–91. <https://doi.org/10.1177/003335490612100115>



CHAPTER 2

A Life Course Perspective on Maternal and Child Health and Health Inequities

Liana J. Richardson, Kelly L. Strutz, and Andrea N. Goodwin

It seems likely and biologically plausible that healthy children become healthy adults with reduced risk for a variety of health problems, including reproductive problems. The evidence for this simple principle has been accumulating over the last five decades and, I believe, has been neglected in the search for other causal factors that presumably are more amenable to immediate intervention. It does not seem likely that immediate interventions will solve the problems of interest. On the other hand, it appears that the roots of these problems to some extent are laid down in childhood.

Introduction

Historically, the prevailing approach to maternal and child health (MCH) research, policy, and practice has been dominated by a focus on temporally

proximate or contemporaneous risk factors. For example, efforts to understand and address perinatal health problems have focused on prenatal exposures, childhood health problems on childhood exposures, and adult health problems on adult exposures. Since the early 1990s, however, several factors—most notably the intractability of key MCH problems in the U.S. and beyond—have contributed to the questioning of this approach and the search for new ways to address these problems.

In the U.S., the discrepancy between expenditures and global rankings on key MCH indicators, as well as the persistence and growth of racial/ethnic and socioeconomic inequities in many of the indicators, are chief among the problems for which new answers are needed. Rates of low birth weight and preterm birth in this country remain higher than the Healthy People 2020 goals¹ (Martin et al., 2019; Office of

1 Healthy People is an initiative of the U.S. Department of Health and Human Services that establishes evidence-based, 10-year national objectives for improving the health of Americans. The most recent set of 10-year objectives, known as Healthy People 2020, were released in 2010 (Office of Disease Prevention and Health Promotion, 2020).

Disease Prevention and Health Promotion, 2020), and nearly double the rates observed in other developed countries (Organisation for Economic Co-operation and Development [OECD], 2019). In 2017, the low birth weight rate in the U.S. ranked 34th worst among the 36 member countries of the OECD² and five of its partner or candidate countries (OECD, 2019); the ranking of its infant mortality rate is similarly poor. Both rankings lie in stark contrast to the fact that the U.S. is one of the wealthiest nations in per capita gross domestic product and spends the most on health care (OECD, 2019). Within-country inequities in infant health are also a prominent feature of the troubling U.S. population health profile. African Americans experience a roughly two-fold higher rate of low birth weight than Whites. Moreover, their infant mortality rate, like that of American Indians and Alaska Natives, is also about two times higher than the infant mortality rate of Whites (Ely & Driscoll, 2019; Martin et al., 2019; Solomon et al., 2017). Even more problematic is the fact that known risk factors, including behavioral, biomedical, and socioeconomic factors, have not been able to fully explain these persistent inequities (Gennaro, 2005; Goldenberg et al., 2008; Shiono et al., 1997; Solomon et al., 2017).

Seemingly intractable problems in global MCH also lead us to reconsider prevailing approaches to understanding and addressing them. Approximately 5.3 million children younger than 5 years of age, almost half of whom were neonates, died in 2018 (United Nations Inter-Agency Group for Child Mortality Estimation, 2019).

In addition, about 300,000 women suffered pregnancy-related causes of death in 2015 (World Health Organization [WHO], 2015). Although there has been a greater than 50% decline in the global under-5 mortality rate and a 45% decline in the global maternal mortality ratio since 1990, the declines still fell short of the targets for 2015 set forth by the Millennium Development Goals³ (i.e., two-third and three-quarter reductions, respectively). The declines also have been less steep among the poorest and most vulnerable people in the world (United Nations Department of Economic and Social Affairs [UN DESA], 2015). In addition to high mortality, levels of morbidity are high among women and children in countries with endemic problems, such as undernutrition, gender-based socioeconomic inequalities, and short intervals between births due to unmet need for contraception (WHO, 2017).

If the answers to these problems cannot be found fully in temporally proximate risk factors, where can we find them? By focusing our attention instead on the potential long-term health impacts of experiences, exposures, and behaviors over individuals' *entire* life spans, a life course perspective on MCH provides one clear alternative. Among the questions that this perspective generates are the following: To what degree is our health impacted by our life history, our mother's and father's life histories, and the histories of our ancestors? Are exposures that we experienced *in utero*—or that our mothers experienced even before our conception—linked to our risk of developing hypertension or diabetes as adults? Do childhood adversities influence adult health and well-being?

2 The OECD is an international organization through which member countries and partners collaborate on key issues related to economic progress and trade, assess each other's performance with respect to various indicators (including population health indicators), and make suggestions for improvement. Typically, OECD members are developed countries with high-income economies and very high Human Development Indexes. At the time of the OECD's *Health at a Glance* report for 2019, there were 36 member countries. Now there are 37 (Source: oecd.org).

3 Millennium Development Goals (MDGs) are a set of international development goals (along with a set of measurable objectives) that were agreed upon by the 189 member states of the United Nations when they adopted the Millennium Declaration in 2000. By adopting the declaration, both developed and developing countries committed to achieve the MDGs by 2015. Several MCH outcomes are among the indicators used to measure progress toward the MDGs (UN DESA, 2015).

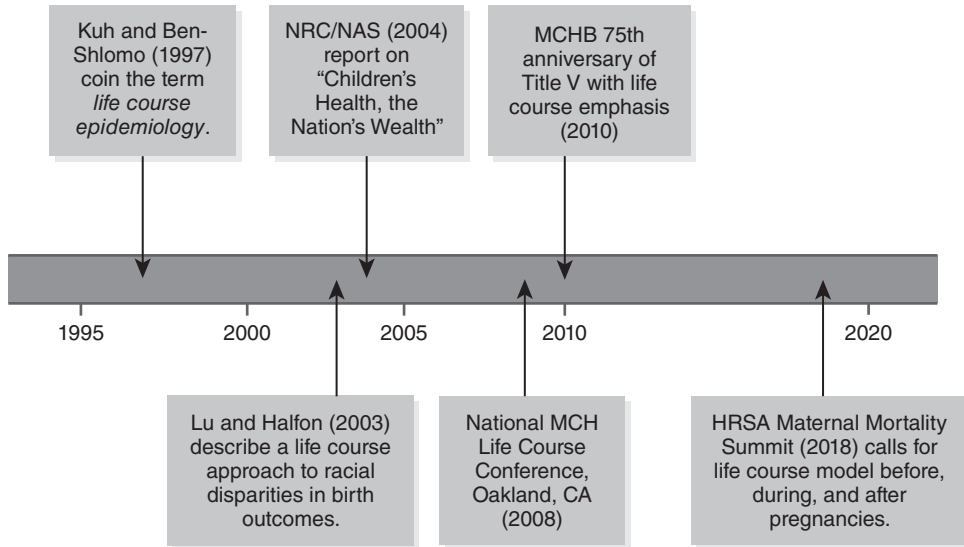


Figure 2-1 Key events in life course MCH since 1995.

Abbreviations: HRSA, Health Resources and Services Administration; MCHB, Maternal and Child Health Bureau; NAS, National Academy of Sciences; NRC, National Research Council.

Data from Kuh, D., & Ben-Schlomo, Y. (2004). Introduction. In D. Kuh, & Y. Ben-Schlomo (Eds.), *A life course approach to chronic disease epidemiology* (pp. 3–14). Oxford: Oxford University Press.; National Research Council [NRC] (2004); Van Dyck (2010); Lu, M. C., & Halfon, N. (2003). Racial and ethnic disparities in birth outcomes: A life-course perspective. *Maternal and Child Health Journal*, 7(1), 13–30.; Pies, C., Parthasarathy, P., Kotelchuck, M., & Lu, M. (2009). Making a paradigm shift in maternal and child health: A report on the national MCH life course meeting. Martinez, CA: Contra Costa Health Services. Retrieved on March 10, 2011 from http://cchealth.org/groups/lifecourse/pdf/2009_10_meeting_report_final.pdf; U.S. Department of Health and Human Services [USDHHS] Health Resources and Services Administration [HRSA]. (2019). HRSA Maternal Mortality Summit: Promising Global Practices to Improve Maternal Health Outcomes Technical Report. Washington, DC: U.S. Department of Health and Human Services. Retrieved on August 27, 2019 from <https://www.hrsa.gov/sites/default/files/hrsa/maternal-mortality/Maternal-Mortality-Technical-Report.pdf>

How might childhood and adolescent experiences impact our reproductive health during our 20s, 30s, and 40s? To what extent does the inequitable distribution of these exposures and experiences across social status groups contribute to MCH and other adult health inequities? And on which factors and in which life periods should we intervene in order to disrupt the inter-generational transmission of these inequities?

Current attention to these questions and excitement about the life course perspective within the MCH policy, practice, and scientific communities are unprecedented, although the suggestion that early life exposures may have important consequences for future health and well-being, including future reproductive health and pregnancy outcomes, dates back at least 150 years (Meckel, 1990). More recent events contributing to the revival of interest in applying a life course perspective to MCH include the emergence of life course epidemiology in 1997; the 2003 publication of Michael Lu and Neal

Halfon’s seminal conceptual paper, “Racial and Ethnic Disparities in Birth Outcomes: A Life-Course Perspective”; and the growing availability of longitudinal data suitable for evaluating life course hypotheses. The recent call for the use of a life course model before, during, and after pregnancies to reduce maternal morbidity and mortality at the U.S. Health Resources and Services Administration’s (HRSA’s) Maternal Mortality Summit is yet another example of the growing influence of this model on MCH policy and practice. (See **Figure 2-1**.) HRSA’s Maternal and Child Health Bureau is also currently funding Halfon’s Life Course Interventions Research Network.

The growth of interest in life course approaches is evident in patterns of publication, too. The number of research articles in which the terms “life course,” “lifecourse,” or “life-course” appear in the title, abstract, or list of keywords has steadily grown since the early 1990s, with even more rapid growth in the past decade.

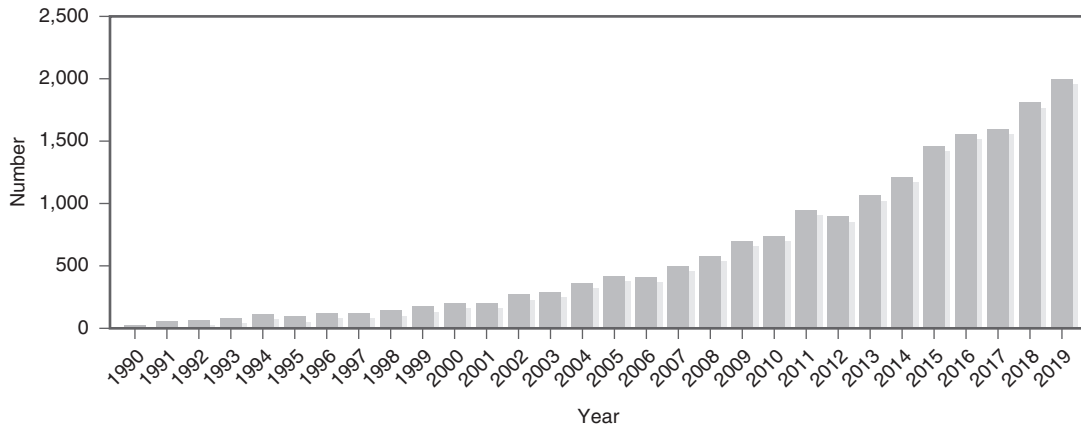


Figure 2-2 Annual number of research articles on life course topics, 1990–2019.

Developed by the authors using data from ISI Web of Knowledge.

(See **Figure 2-2**.) The recent publication of two edited volumes on life course theory and practice (Halfon et al., 2017; Verbiest, 2018) to which numerous MCH scholars and practitioners contributed reflects this growth and suggests that the life course perspective is now widely adopted in the field.

Given this widespread adoption, it is imperative that new MCH scholars and practitioners be familiar with the life course perspective. The goal of this chapter, therefore, is to provide an introductory overview of the perspective and its applications to some of the most active areas of investigation in the MCH field. The chapter begins by tracing the life course perspective to its roots in the social and behavioral sciences and reviewing eight fundamental principles and concepts in life course theory. Next, the translation of some of these principles and concepts into what has been dubbed “life course epidemiology” is discussed. Third, the chapter traces the emergence of life course scholarship within the MCH field, and reviews three key areas of contemporary scholarship on MCH and MCH inequities that are consistent with a life course perspective. The links between these areas and life course principles and concepts are explicated and drawn upon to identify new research questions that hold the potential for expanding the

evidence base. Finally, the chapter concludes with a discussion of the implications of a life course approach for MCH policy and practice, as well as a general discussion about what else is needed to advance this agenda.

Fundamental Concepts in Life Course Theory

Sociologist Glen Elder, Jr. played a leading role in the founding and growth of life course studies (Elder, 1975, 1979). In his seminal work on the changing historical and social contexts of lives and their consequences for human development and aging, the “life course” is both a concept and a theoretical orientation. As a concept, it refers to the sequence of events and roles—age-graded, socially defined, and nested within historical time and place—which form our individual biographies (Elder & Shanahan, 2006). At the same time, the life course is a theoretical orientation that can be used to identify questions suitable for scientific inquiry, justify the selection of research variables, guide the choice of study design and data analysis methods, and aid in the interpretation of study findings (Elder et al., 2004).

The paragraphs that follow focus on life course theory and describe its components.

The Five Defining Principles of Life Course Theory

Elder (2006) identifies five defining principles and three temporal concepts of life course theory. These principles and concepts are briefly described below, along with some corresponding MCH-relevant examples. A more detailed discussion of three key areas of current MCH investigation and their links to life course principles and concepts is provided later in the chapter.

1. The Principle of Life Span Development

The *principle of life span development* suggests that health and well-being are lifelong processes. Thus, they can only be fully understood within the context of experiences across one's entire life span. For example, studies that attempt to link birth weight to adult health outcomes reflect this principle (e.g., Morrison et al., 2016; Richardson et al., 2011).

2. The Principle of Human Agency

The *principle of human agency* calls attention to the impact of an individual's decisions and actions on their health and well-being. Given that these decisions and actions are influenced by motivations, goals, values, and personality, this principle highlights the central roles of personal control and behavior in health and illness. Another critical assumption of this principle, however, is that human agency is *embedded in social context*. Elder (2006) asserts that, while individuals select themselves into situations and social roles, decisions and actions are made "...within the opportunities and constraints of history and circumstance" (p. 2635). This assertion makes life course theory consistent with social ecological theories about how the social structural arrangements of society,

including racism, xenophobia, and patriarchy, shape opportunities and constrain agency among certain social status groups while bolstering it in others (e.g., Bird & Rieker, 2010; Chandler, 2019; Cockerham 2012; Link & Phelan 1995). Studies that acknowledge the mediating role of behavioral and psychosocial factors between racial residential segregation or neighborhood socioeconomic conditions and adverse birth outcomes (e.g., Clayborne et al., 2017; Mehra et al., 2017; Schempf et al., 2009) are, thus, good empirical examples of this principle.

3. The Principle of Timing

The *principle of timing* suggests that our health and well-being are shaped not only by *what* happens to us (i.e., the causes and consequences) but also by *when* in the life course it happens, how long it lasts (*duration*), and in what order it occurs relative to other roles and events (*sequencing*; Elder, 1994, 2006). For example, the impact of childbearing on female educational attainment greatly depends on the mother's age at the time of the birth (e.g., teens vs. 20s [Kane et al., 2013] or 30s [Hofferth et al., 2001]). Similarly, the consequences of family instability for a child may depend on their age at the onset of such instability (Cavanagh & Huston, 2008; Fomby & Bosick, 2013). Timing, or more specifically *social timing*, also applies to the goodness of fit between an individual's multiple life course trajectories. Among women, for example, asynchrony between work and fertility trajectories may increase the likelihood of experiencing fertility problems if it causes them to delay childbearing.

With regard to *duration*, life course scholars also invoke the concept of cumulative advantage/disadvantage (hereafter referred to as *cumulative dis/advantage*), particularly to explain inequality. Cumulative dis/advantage, which is traceable to Merton's (1968, 1988) work on the "Matthew effect," refers to the systematic tendency for inequality to widen over time (i.e., with increasing age) due to the social structuring of—and persistent differences in—risks, resources, opportunities, and returns to resources (Dannefer, 1987;

DiPrete & Eirich, 2006; O’Rand, 1996). This tendency may, therefore, explain diverging life and health trajectories (Willson et al., 2007). For example, as we discuss in more detail later in the chapter, MCH scholars have asserted for over two decades that the African American-White disparity in adverse birth outcomes and its widening with increasing age may be a result of cumulative dis/advantage (Geronimus, 1992).

4. The Principle of Linked Lives

The *principle of linked lives* suggests that our health and well-being are shaped by the social networks to which we belong and, particularly, our relationships with significant others (Elder, 2006). As Elder (1994) notes, “No principle of life course study is more central than the notion of interdependent lives ... The misfortune and the opportunity of adult children, as well as their personal problems, become intergenerational” (p. 6). Within the domain of MCH, an obvious example of this principle is the linkage between maternal and infant health. The linkages between parents’ circumstances and children’s outcomes more broadly also are central to scholarship on intergenerational health effects. For example, Chandler (2019) proposed a model for understanding how the social structural arrangements of society and other contextual factors (e.g., mass incarceration) have produced intergenerational cycles of disadvantage among African Americans with obvious impacts on child health and development. Similarly, Sotero (2006) developed a conceptual model for understanding and addressing the intergenerational transmission of historical trauma and its negative health effects on American Indians and Alaska Natives.

However, the range of relationships that matter to MCH scholars and practitioners extends well beyond direct biological connections. The associations between caregiver characteristics and child maltreatment risk (Hussey, Chang, & Kotch, 2006), peer relationships and adolescent risk behaviors (Huang et al., 2014; Kreager, 2007), and sexual network characteristics and sexually transmitted infection (STI) risk (Adams et al., 2013; Morris et al. 2009) are a few other MCH

examples that are consistent with this principle. The transmission of COVID-19 between family members, within friendship networks, and between coworkers in particular occupations also reveals, in a rather chilling way, how much our health and well-being can be influenced by the people to whom we are linked.

5. The Principle of Historical Time and Place

The *principle of historical time and place* highlights the ways in which period, cohort, and contextual factors influence the life course. Historical events, like the Great Depression in the past century or the Great Recession in the current one, may impact the life course in a variety of ways, with both immediate and long-term consequences for health and well-being. For example, economic stress within the household may have an immediate impact on parenting behaviors (Gershoff et al., 2007; Ponnet et al., 2013), which in turn has longer-term implications for a child’s health and development (Browne, & Jenkins, 2012; Repetti et al., 2002). It is also important to appreciate that the impact of historical events may vary by place or location (Elder, 2006). The economic downturn that has accompanied the COVID-19 pandemic in the U.S., for instance, may differentially impact women and children by region, state, city, or even neighborhood of residence, and in ways that differ from those created by the Great Recession of 2007–2009 or other historical events.

The link between place (or context) and other principles of life course theory also is clear. For example, understanding the impact of place on health and well-being requires that we consider the features of one’s current context, as well as the characteristics of the places to which they have been exposed over their entire life course—i.e., the *principle of life span development*. Furthermore, the *principle of timing* suggests that the impact of contextual factors on child and adult outcomes may vary according to the timing, sequencing, and duration of exposure. Context also figures prominently in the *principle of human agency* as a

key factor that constrains individual choices and behaviors. Finally, several health-relevant characteristics illustrative of the principle of linked lives, such as social networking opportunities (Swaroop & Morenoff, 2006) and exposure to infectious disease (Feldacker, Emch, & Ennett, 2010), vary by context. This is exemplified by the inequitable impact of COVID-19 on certain racial/ethnic groups throughout the U.S. Specifically, a disproportionately high number of COVID-19 cases can be found among African Americans and Latinos, both of whom are more likely to live and work in contexts that increase risk of exposure and infection. These contexts include crowded housing that makes social distancing and quarantine specifically challenging and workplace environments that require close and frequent contact with contact with unknown others and that do not offer paid sick leave or work-from-home alternatives (Gould & Wilson, 2020; U.S. Census Bureau, 2020).

Three Key Concepts in Life Course Theory: Trajectories, Transitions, and Turning Points

Elder (2006) also describes three temporal concepts—trajectories, transitions, and turning points—that are critical to life course scholarship. *Trajectories* are dynamic descriptors of health and well-being that typically describe a substantial period of the life span (Elder & Shanahan, 2006). For example, long-term patterns of an individual's behavior (e.g., physical activity and smoking) and health (e.g., depression and body mass index) can be described as trajectories. Importantly, each individual's life course is characterized by multiple, co-occurring trajectories (e.g., work, relationship, income, and health trajectories).

While trajectories typically capture the long-term picture of one's health and well-being, *transitions*—which are embedded within trajectories—usually take place within a relatively brief timeframe. For example, the onset of

parenthood or the aging of adolescents into adulthood may be described as a transition. A transition may also result in a *turning point*, defined as “a redirection of the life course through changes in situation, meaning, and/or behavior” (Elder, 2006, p. 2634). The transition to parenthood, for example, is associated with decreased alcohol consumption, at least in the short term (Borschmann et al., 2019; Wolfe, 2009).

Fundamental Concepts in Life Course Epidemiology

Public health scholars have adapted a number of Elder's life course principles and concepts to advance a “life course epidemiology” or life course perspective on health. First and foremost, consistent with the principle of life span development, this perspective is premised on the idea that the body records all of our life experiences and, as a result, tells a story of one's past and that of the preceding generation (Kuh & Ben-Shlomo, 2004; Nguyen & Preshard, 2003). Thus, in order to understand present health and well-being, experiences and events that may have occurred years, decades, or even generations earlier must be considered. Second, life course epidemiology draws on Elder's ideas that transitions, turning points, and durations embedded in social context have implications for health trajectories (Elder & Johnson, 2003), as well as the concept of cumulative dis/advantage (Dannefer, 1987; DiPrete & Eirich, 2006; O'Rand, 1996) to help explain the divergence of health trajectories (i.e., health disparities). What life course epidemiology adds to life course theory is a more clear delineation of the processes by which past experiences and events affect future health and development and, thus, a more nuanced explication of the principle of timing and the concepts of trajectories, transitions, and turning points. This task increases the utility of these principles and concepts for MCH research and practice because it facilitates their operationalization and the identification of the most

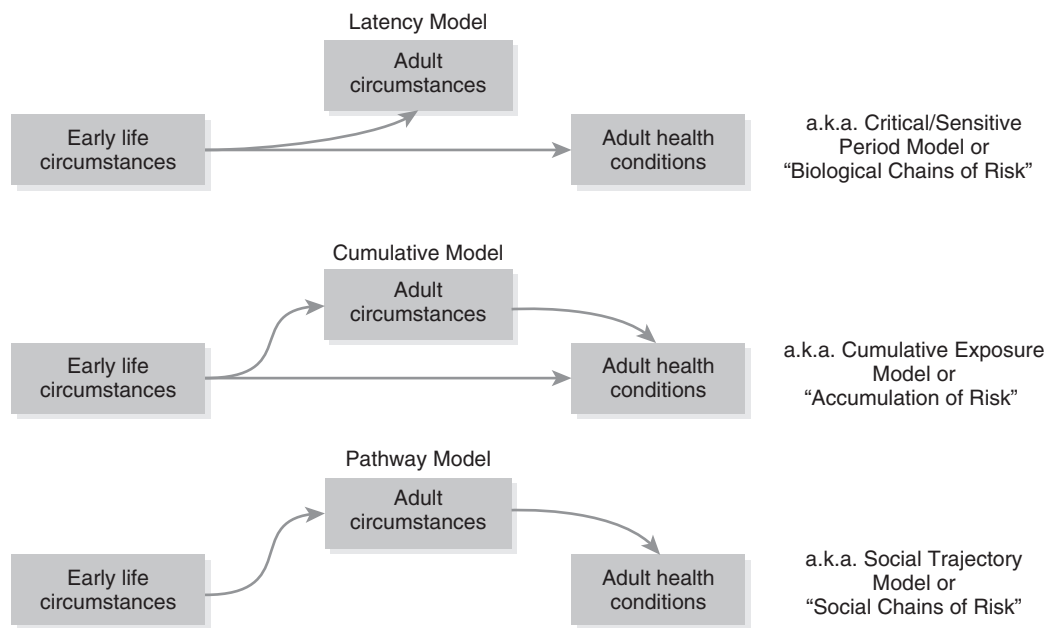


Figure 2-3 Three life course epidemiology models of health.

Republished with permission of Annual Review of Public Health, from Social epidemiology: Social determinants of health in the United States: Are we losing ground?, Berkman, L. F., 30, 27-41 (2009), permission conveyed through Copyright Clearance Center, Inc.

appropriate timing and targets for strategies to improve health and reduce health inequities.

Toward this end, life course epidemiology posits that risk (and protective) factors may combine cross-sectionally and accumulate or interact with each other longitudinally to impact current, future, and intergenerational health (Ben-Shlomo et al. 2016; Kuh & Ben-Shlomo, 2004). Thus, at least three life course models of health have been proposed: (1) a *latency*, “biological chains of risk,” or critical/sensitive period model; (2) a *cumulative*, “accumulation of risk,” or cumulative exposure model; and (3) a *pathway*, “social chains of risk,” or social trajectory model (Berkman, 2009; Hertzman, 2004; Hertzman & Boyce, 2010; Kuh et al., 2003). As **Figure 2-3** shows, a latency model suggests that early exposures are associated with later health risk, regardless of intervening exposures. A cumulative model posits that exposures across the life course combine to influence later health risk, producing a greater effect than would be produced by the same exposures at just one point in

the life course. A pathway model is one in which early experiences lead to a cascade of exposures and effects that eventually impact later health. The pathway model also suggests that changes (i.e., intervening exposures) in the trajectory at any point in time may modify the health effect (Hertzman, 2004; Pollitt et al., 2005).

It is important to note that the three life course epidemiology models are neither deterministic (Lu et al., 2018) nor mutually exclusive, but they do have different implications for research and practice. (See **Box 2-1**.) In addition, although their visual depictions are gross oversimplifications of a more dynamic and complex set of intra- and intergenerational phenomena, the models are useful heuristics for considering mechanisms by which both beneficial and harmful exposures may affect the development *over time* of differential risk for adverse health outcomes across groups (e.g., racial/ethnic or socioeconomic groups). To date, however, limited evidence about which life course causal models underlie health inequities exists. Nonetheless,

recommendations for how to apply life course theory to address them have recently been made (Abresh & Wyche-Etheridge, 2018).

BOX 2-1 A Life Course Epidemiology Example for MCH Research and Practice

To illustrate the implications of the life course epidemiology models in Figure 2-3 for research and practice, let's use the case of life course stress—measured during both childhood and adulthood—and its relationship to a stress-related health outcome during adulthood. (This example is partially adapted from Willis et al. [2019]).

- If the relationship between childhood stress and a stress-related health outcome during adulthood is *not* mediated by adult stress in a given population, then it is consistent with a *latency* model. In this case, interventions to reduce the stress-related health outcome should be timed before or during childhood and target the sources of maternal or childhood stress.
- The relationship between childhood stress and a stress-related health outcome during adulthood would be partially mediated by adult stress in the *cumulative* model. In this case, interventions throughout childhood and adulthood targeting the sources of stress during both of those periods are necessary to reduce the stress-related health outcome.
- If the relationship between childhood stress and a stress-related health outcome during adulthood is fully mediated by adult stress, then the relationships are consistent with a *pathway* model. Interventions focused on reducing stressors during adulthood are appropriate in this case.

These distinctions do not mean, however, that the interventions for each model *must* differ from each other. Programs to address housing and food insecurity, for example, are interventions that may reduce the socioeconomic sources of stress whether the relationships among childhood stress, adult stress, and adult health are consistent with a latency, cumulative, or pathway model. The difference between them would simply be a matter of intervention timing.

Applications of Life Course Theory and Epidemiology to MCH

Historical Applications to MCH

While the advent of life course epidemiology has been a key contributor to the widespread adoption of a life course perspective on MCH in recent years, its origins can be traced to at least 150 years ago when health reformers recognized the possibility that poor health could be transmitted from one generation to the next—a possibility that is consistent with the principle of linked lives. For example, it became clear to them that, “...if infant mortality was to be reduced, the health of all urban slum residents had to be improved” (Meckel, 1990, p. 22).

Similarly, it was nearly a century ago when MCH discourse began to include arguments consistent with the principle of life span development. For example, lack of knowledge about proper infant feeding and care among mothers was seen as the primary cause of infant mortality at the time, but this view did not supplant recognition of the potential impact of maternal health prior to pregnancy on birth outcomes. As Meckel (1990) observed:

Even those infant welfare activists who evinced greatest faith in the power of advice, had to admit that a mother's ability to carry and bear healthy infants could be seriously affected by a pre-gestative life of poor nutrition, debilitating physical activity, and exposure to infectious disease. Most physicians, for instance, were aware that childhood rickets, a common disease among the malnourished, often produced pelvic deformities that later complicated child-bearing. (p. 170)

Meckel, R. A. (1990). *Save the babies: American public health reform and the prevention of infant mortality: 1850–1929*. Baltimore: The Johns Hopkins University Press.

In the late 1940s, some of the first empirical evidence of this link came from a series of studies on adverse birth outcomes in Aberdeen, Scotland by Sir Dugald Baird and colleagues. They found that low birth weight and perinatal mortality were less common among taller women (who presumably enjoyed superior childhood nutrition) and those from higher social class origins. Moreover, a woman's social class during childhood predicted her likelihood of delivering a low birth weight infant *independent* of her current (adult) social class, suggesting that early life exposures may have an enduring effect on adult reproductive health (Baird, 1964). This suggestion is consistent with a latency or critical/sensitive period model.

Several decades later in the U.S., Irvin Emanuel emerged as one of the earliest proponents of a life course perspective on reproductive health outcomes. For more than three decades, beginning in the early 1970s, Emanuel's research and review articles advanced an intergenerational model of reproductive health that emphasized how women's life course exposures—starting *in utero* and continuing into childhood and beyond—influence the health of their offspring (e.g., Emanuel, 1986, 1993; Emanuel & Sever, 1973). Also noteworthy is Emanuel's early application of this model to the problem of racial disparities in birth outcomes (Emanuel 1986; Emanuel et al., 1989). Commenting on the inability of prenatal care or genetic factors to account for these persistent disparities, Emanuel, Hale, and Berg (1989) observed that:

It would be more fruitful to ask what it is about the lives of American black women which is apparently so hazardous to fetal and infant health, and we suggest that two aspects of their lives, the mothers' childhood environments and the environment in which their own pregnancies occur, merit additional study and attention. (p. 300)

Emanuel, I., Hale, C. B., & Berg, C. J. (1989). Poor birth outcomes of American Black women: An alternative explanation. *Journal of Public Health Policy*, 10(3), 299–308.

Their conclusion that studying racial differentials in life course exposures, beginning *in utero*,

is a more promising line of investigation than focusing on the prenatal period is an argument that reappeared 14 years later in Lu and Halfon's (2003) highly influential conceptual paper.

Other early examples of a life course perspective on MCH can be found in early theories and research linking infant and childhood exposures to a range of adult health outcomes. Interest in this topic dates back more than a century when there were growing concerns, in both the U.S. and Europe, about the physical degeneration of national populations. In particular, connections were made between the poor health of military recruits and early life health. During World War I, for example, 29% of American draftees were found to be physically unfit for military service, and the majority of their physical deficiencies could be traced to childhood illnesses, such as heart murmurs caused by scarlet fever or rickets-related physical deformities (Meckel, 1990).

One of the first empirical studies to link health across the full life span was published by Kermack, McKendrick, and McKinlay in 1934. Analyzing European data, they noted that the relative mortality rates of successive birth cohorts tended to track across the life course. In other words, cohorts that experienced lower infant and childhood mortality also experienced lower mortality across the full life span. This study, therefore, provides an early example of the principle of historical time and place.

Contemporary Applications to MCH

Now that there is renewed interest in adopting a life course perspective on MCH and a strong theoretical foundation on which to build, the opportunity to conduct even more nuanced life course MCH research exists. This potential is reflected in three important and illustrative areas of active MCH scholarship: (1) the role of *preconception* health and well-being on birth outcomes, (2) the life course impact of adverse childhood experiences, and (3) the fetal origins of adult disease. The paragraphs that follow review these areas of investigation, uncover their implicit life course

theoretical underpinnings, and identify additional questions that life course theory compels researchers and practitioners to ask.

1. Preconception Health and Well-Being

Studies of adverse birth outcomes have historically demonstrated a predominant focus on prenatal exposures—a practice that has limited our understanding of the factors that may precede pregnancy (or even the entire childbearing period) and be instrumental in precipitating preterm birth and low birth weight, as well as inequities in these outcomes. As a result, many MCH scholars have grown interested in preconception health, viewing pregnancy as part of an integrated continuum or trajectory of health rather than a disconnected stage of development (Pies et al., 2008; Steegers, 2019). Consistent with the principle of life span development, therefore, the preconception health perspective argues that birth outcomes are affected not only by maternal exposures during the 9-month prenatal period, but also by maternal health and development across the life span prior to pregnancy.

For nearly two decades, supporters of a preconception care agenda have promoted efforts to expand women's health care beyond the prenatal period to include preconception and interconception care (Moos, 2010) and, during the past 5 years, to measure preconception wellness (Frayne et al., 2016; Robbins et al., 2018). Despite these efforts, a somewhat sparse amount of evidence exists on the relationship between preconception maternal exposures and birth outcomes. To date, the most commonly studied exposures have been prepregnancy folic acid consumption, which has long been known to prevent neural tube defects (Wald, 1993); prepregnancy chronic stress, which has been shown to contribute to restricted birth weight (Strutz et al., 2014) and preterm birth (Kramer et al. 2011); and prepregnancy obesity, which is associated with an increased risk of fetal death and macrosomic infants (Strutz et al., 2012), prenatal and intrapartum complications (Arendas et al., 2008), and preterm delivery (Torloni et al., 2009). Previous research also suggests that daily consumption of vegetables,

smoking cessation, and management of chronic conditions prior to pregnancy may be associated with improved MCH outcomes (Anderson et al., 2019; Weisman et al., 2011), while preconception smoking and poor physical functioning and prepregnancy depression may be associated with adverse birth outcomes (Gavin et al., 2009; Haas et al., 2005), although findings have been inconsistent across studies (e.g., Phillips et al., 2010). Group differences in these preconception factors may also help explain racial disparities in birth outcomes. In one study, for example, the positive relationship between prepregnancy overweight/obesity and macrosomia was modified by mother's race (Strutz et al., 2014).

The focus on behavioral and psychosocial factors in the aforementioned studies reveals their bias toward factors that are amenable to health care intervention. Yet consistent with the principle of human agency embedded in social context, studies that focus on preconception (or early life) social conditions also are important subjects for research on the contribution of preconception exposures to adverse birth outcomes and to the inequitable distribution of these outcomes. For example, some studies have examined the effects of intergenerational changes or consistencies in individual-level and neighborhood-level socioeconomic status (i.e., early life vs. contemporaneous socioeconomic status) on birth outcomes, independent of prenatal exposures (Colen et al., 2006; Collins, David, et al., 2009; Collins, Wambach, et al., 2009; Love et al., 2010; Morton et al., 2014; Slaughter-Acey et al., 2016). Life course theory, however, makes clear that many important gaps in this body of literature remain to be filled. For example, the social mobility studies capture little of women's exposure histories prior to their pregnancies—e.g., exposures that intervene in the pathway between early life and adult factors (principle of life span development)—partially because they rely on data at only two time points. They also do not examine the role of duration, timing, and sequencing to determine whether the effects of early life factors on later birth outcomes are lagged (latency or critical/sensitive period model) or,

when considered along with adult factors, interactive or cumulative.

Toward this end, one of the more active areas of inquiry within the preconception health literature concerns the *weathering hypothesis*. This hypothesis, coined by Arline Geronimus (1992), posits a cumulative negative impact of social environmental stressors on reproductive health and birth outcomes, and hypothesizes that the disproportionate burden of these accumulating stressors among African American women may explain the widening of African American-White disparities in adverse birth outcomes with increasing maternal age (principle of life span development and cumulative dis/advantage). Among the stressors that are posited to play roles in this process are socioeconomic challenges; residence in areas characterized by disadvantage and environmental hazards; and, more fundamentally, racism. In addition, African American women may have limited access to health services and the informal social resources and institutions to which they have traditionally turned to offset the impact of these stressors, engaging instead in prolonged active or “high effort coping” which further damages health (Geronimus, 1992). Thus, the weathering hypothesis goes beyond cumulative dis/advantage by providing a more explicit description of the mechanisms that lead to diverging trajectories of reproductive health decline as women move through the reproductive age period. Not only are these mechanisms thought to underlie age patterns of African American-White inequities in birth outcomes, but scholars and practitioners now believe they may explain African American-White inequities in maternal mortality, too (Roeder, 2019). Given the nature of the hypothesized mechanisms, it is not unreasonable to consider them as a potential explanation for the alarmingly high rates of infant mortality, maternal mortality, and maternal morbidity among American Indian and Alaska Native women as well (Peterson et al., 2019; Solomon et al., 2015).

To date, evidence supporting the weathering hypothesis remains incomplete. While researchers have documented age patterns that are consistent with those that prompted the weathering

hypothesis, the cumulative mechanisms posited by Geronimus to underlay racial differences in the rate of weathering have been underinvestigated (Forde et al. 2019). In most studies that purport to provide evidence of weathering, age and health outcomes that are believed to capture the effects of cumulative stress (e.g., allostatic load or telomere length) serve as mere proxies for the hypothesized mechanisms or the specific experiences that were hypothesized to be involved in them (Geronimus et al., 2006, 2010). Another important limitation in this literature is that most studies have relied on cross-sectional data to evaluate a hypothesis that demands longitudinal data. Consequently, the majority of studies of the maternal age-birth outcome relationship rest on the questionable assumption that contemporaneous circumstances reflect women’s lifetime exposure histories.

2. The Life Course Impact of Adverse Childhood Experiences

The long-term consequences of adverse childhood experiences, such as childhood maltreatment, are areas of MCH investigation that also reflect a life course perspective. Over the past two decades, this topic has attracted increased attention due in large part to findings from the Adverse Childhood Experiences (ACE) Study, which has been following a cohort of adult health maintenance organization enrollees since the mid-1990s. In their initial paper, the ACE study team documented associations between adverse childhood experiences and a variety of adult health outcomes, including current smoking, severe obesity, depressed mood, attempted suicide, alcoholism, illicit drug use, sexual promiscuity, history of sexually transmitted infection, and chronic bronchitis or emphysema (Felitti et al., 1998). In subsequent papers, adverse childhood experiences have been linked to ischemic heart disease (Dong et al., 2004); anxiety, anger management, sleep disturbance, and memory impairment (Anda et al., 2006); mortality risk (Brown et al., 2009); sexual victimization in adulthood (Ports et al., 2016); and adverse birth outcomes (Mersky & Lee, 2019; Smith et al., 2016).

Importantly, these ACE studies have provided evidence of a dose-response relationship: As the number of adverse childhood experiences increases, so too do the odds of engaging in a health risk behavior or experiencing an adverse health outcome. Studies using other data sources have found a similar pattern. For example, in the 2001–2003 National Comorbidity Survey Replication involving a national probability sample of U.S. adults, a dose-response relationship between number of adverse childhood experiences and multiple psychiatric outcomes was found among both women and men (Afifi et al., 2008). More recently, in the Philadelphia ACE study involving a diverse sample of adults living in Philadelphia, researchers found that high ACE scores were associated with physical and mental illness, as well as high risk health behaviors (Wade et al., 2016). These findings are, therefore, consistent with a cumulative life course epidemiology model.

Moreover, several fundamental principles and concepts of life course theory are implicit in ACE studies. Consistent with the principle of life span development, a key implication of these studies is that adult health and well-being can only be fully understood by considering early exposures along with more temporally proximate influences. The principle of linked lives also is implicit in these studies, as most of the adverse events experienced by children stem from the behaviors and experiences of people in their immediate social network. Many events, such as the incarceration of a parent or the change from a dual-parent to a single-parent household, also represent important transitions or turning points in a child's life.

In recent years, scholars have increasingly called for the identification of additional adverse experiences beyond those included in the original ACE studies. Interpersonal racism and other forms of discrimination/stigma (e.g., heterosexism, xenophobia, etc.) are leading candidates. Yet, Lanier (2020) also recommended that *institutional and structural* racism, as well as other social contextual sources of toxic stress (e.g., migration and family separation, war, famine) be included in an expanded set of ACEs. Similarly, Ellis and Dietz (2017) proposed a model to address both adverse

childhood experiences and adverse *community* experiences, such as poverty, community disruption, poor housing quality, lack of opportunity, and community violence, making it consistent with the emphasis on context and place in the life course principles. The need for this upstream focus is particularly apparent in the present historical moment: Police brutality against African Americans has become increasingly visible while other forms of white supremacist actions and rhetoric have also gained popularity, and COVID-19 (or the U.S. government's failed response to it) is ravaging Latino and African American families, the male members of which were already the victims of disproportionately high rates of premature mortality, unemployment, and incarceration (DeVuono-Powell et al., 2015; U.S. Bureau of Labor Statistics, 2018; Xu et al., 2010). It is hard to imagine that the psychological, social, emotional, and physical well-being of African American and Latino children living through these circumstances will not be damaged for years to come.

Although life course principles and concepts already permeate the literature on adverse childhood experiences, life course theory still has much more to offer this area of investigation. For example, beyond existing research on social inequalities in the experience and effects of ACEs (e.g., Maguire-Jack et al., 2020), efforts to understand why adverse childhood experiences do not affect all individuals equally could benefit from greater attention to the life course principle of timing. While existing research has devoted a great deal of attention to measuring the quantity of adverse childhood experiences, much remains to be learned about whether the timing (i.e., early vs. middle vs. late childhood), duration, or sequencing of exposures matters. The principle of historical time and place is also largely absent from this scholarship, leaving several other questions unanswered. For example, is it possible that the life course impact of a parental separation or divorce experienced in the 1940s, 1950s, or 1960s (when many ACE study participants were children) would differ from the same event experienced by the children of the 1980s, 1990s, or

2000s? Similarly, did the Great Recession of 2007–2009 and its aftermath affect the quantity, frequency, duration, or severity of adverse childhood experiences? How will children, especially Latino and African American children, fare during and after the COVID-19 pandemic and concomitant economic downturn of 2020 relative to how children fared during and following previous periods of economic decline or natural disasters?

3. Fetal Origins of Adult Disease

The fetal origins hypothesis, conceived by David Barker and associates, is one of the most prominent examples of a life course perspective on MCH. Consistent with the principle of life span development and a latency (i.e., critical/sensitive period) model, the hypothesis suggests that adult disease cannot be fully understood without considering early life exposures at critical or sensitive periods, beginning *in utero*, that may “program” the body’s susceptibility to adult disease outcomes (Barker, 1998).

Much of the work on the fetal origins hypothesis has focused on fetal nutrition. Reflecting the life course principle of linked lives, fetal nutrition is a function of maternal nutrition (e.g., metabolism; pregnancy diet) and how well the placenta is able to transport nutrients from the mother to the fetus (Eriksson et al., 2010). Fetal undernutrition, it has been proposed, may produce permanent structural and functional changes that can increase one’s risk for a variety of adult chronic diseases, including chronic kidney disease, hypertension, and diabetes. For example, in the presence of inadequate nutrition, the fetus may give priority to the brain and other vital organs over the kidneys (Eriksson et al., 2010), which in turn may reduce the number of nephrons, the basic functional units of the kidney. This reduction places greater stress on kidney function, and ultimately damages the kidney (glomerular sclerosis) and compromises its ability to regulate blood pressure (Barker, 1998). Hypertension, in turn, can further damage the kidney, potentially leading to a self-perpetuating process (Barker, 1998). Consistent with the life course principle of timing, the fetal origins hypothesis

also suggests that fetal undernutrition in mid- to late gestation is most consequential for adult disease risk, as this is the period when key developmental processes occur, such as those affecting the nephron count (Barker, 2006; Bateson et al., 2004) and glucose intolerance (Ravelli et al., 1998).

Support for these assertions comes from three strands of research: (1) experimental studies on rodents and other animals, (2) so-called “natural” experiments in humans (i.e., famines), and most commonly (3) large observational studies in human cohorts. First, evidence for fetal programming has been found in numerous animal studies, which have modeled the impact of a variety of maternal pregnancy exposures and conditions (e.g., caloric, protein, and micronutrient restriction; gestational diabetes) on offspring health (e.g., Arentson-Lantz et al., 2016; for a review of earlier studies, see Fernandez-Twinn & Ozanne, 2010). Second, consistent with the life course principle of historical time and place, researchers have studied the adult disease outcomes of human birth cohorts exposed to famine—a natural experiment that allows us to study the long-term health impacts of fetal undernutrition at different stages of pregnancy. For example, investigators have linked *in utero* exposure to the Dutch famine to a range of adult outcomes, including obesity, schizophrenia, and a variety of metabolic and cardiovascular outcomes (Lumey et al., 2007; Stein et al., 2006).

The third and primary sources of evidence in fetal origins research have been large case-control and cohort studies on human populations. Since Wadsworth and colleagues (1985) first reported a significant inverse association between birth weight and adult systolic blood pressure in the 1946 British birth cohort, hundreds of observational studies have been published on the association between birth weight and various adult health outcomes. One of the most consistent findings is a modest inverse association between birth weight and adult systolic blood pressure that generally ranges from -1.0 to -4.0 mm Hg/kg (de Jong et al., 2011; Ferguson et al., 2015; Gamborg et al., 2007; Richardson et al., 2011; Roberts & Wood, 2014). Meta-analyses have also

found an inverse relationship between birth weight and type 2 diabetes risk for birth weights less than approximately 2,500 grams (Knop et al., 2018; Whincup, 2007), although the relationship varies by sex (Yarmolinsky et al., 2016; Zimmermann et al., 2015).

Although evidence to support the fetal origins hypothesis has been accumulating for more than 30 years, many important questions remain. How to measure fetal exposures continues to be a major challenge. Moreover, much remains to be learned about the mechanisms linking these exposures to future health. Based on the principles of life span development, human agency embedded in social context, and timing, one must ask, What role do intervening exposures play in the link between birth weight and adult disease? and What are the critical intervening exposures and periods? Current models, referred to as the “developmental origins of health and disease” (DOHaD), are premised on emerging evidence about the mediating role of postnatal exposures (Adair & Dahly, 2005), such as childhood body mass index (Hertzman & Boyce, 2010). Some scholars also acknowledge the need for research on intervening social and contextual factors (Avison, 2010).

Nascent research on epigenetic processes involving social, contextual, or environmental stimuli suggest that epigenetic regulation also may be an important contributor to DOHaD (Goyal et al., 2019; Susiarjo 2016). Indeed, evidence that it might provide a mechanistic link between exposure to intrauterine stress and adult health status, as well as birth outcomes in subsequent generations, is accruing (St. Fleur et al., 2016). For example, studies have found that childhood abuse or trauma leads to gene methylation associated with adult psychiatric symptoms or accelerated aging (Cecil et al., 2016; Lawn et al., 2018; Smearman et al., 2016; Tyrka et al., 2016). Such epigenetic modifications also have been theorized to underlie the life course and intergenerational health impacts of historical trauma among American Indian and Alaska Native populations (Conching & Thayer, 2019). In a different vein, some scholars have noted their suspicion that the *microbiome* may be a new player

in developmental programming and mediation of early life exposures on later disease risk (Bianco-Miotto et al., 2017).

Implications of a Life Course Perspective on MCH Policy and Practice

Traditional policy and practice responses to MCH (and other health) problems have rarely attempted to address them at multiple time points over the life course and simultaneously consider the social context in which they are embedded. The emphasis on prenatal care and neonatal care technologies to improve perinatal health outcomes in the U.S. is one example of this neglect (Lu, 2010). The almost exclusive focus of U.S. health policy on health care is yet another example because it (1) distracts us from focusing on the preconception and childhood periods when the need for health care is presumably lower (Forrest & Riley, 2004) and (2) diverts attention away from considering social policies that hold the potential for producing long-term population health improvements, including the elimination of health disparities, that have their origins in the social conditions of childhood (Forrest & Riley, 2004; Johnson, 2010). These problems are evident in the most recent health care law, the Patient Protection and Affordable Care Act of 2010 (ACA), which includes several MCH-relevant provisions and requirements that could potentially facilitate health care providers' ability to adopt a life course perspective, but does not reflect the longitudinal, multilevel, and multifaceted nature of life course theory. Yet, it should be clear that adopting a life course perspective on MCH *research* will offer incomplete prospects for change if corresponding changes to *policy* and *practice* are not also considered. The necessary changes, and the challenges or barriers to implementing them in the U.S., are discussed below. Examples of current life course initiatives for improving MCH are also described.

Implications for the Timing of Strategies to Improve MCH Outcomes

As this chapter makes clear, the findings of life course research on MCH suggest that some of the key determinants of perinatal health outcomes precede conception (and perhaps even the entire childbearing period) and that the origins of many adult health problems can be traced to childhood. For many women, interventions initiated during pregnancy may provide “too little” and come “too late” to offset a lifetime of reproductive health-damaging exposures (Haas et al., 2005; Lu & Halfon, 2003; Moos, 2010). Thus, the first and most important change to MCH policy and practice demanded by a life course perspective on MCH is to expand strategies for improving perinatal health beyond an exclusive focus on pregnancy outcomes to a focus on the overall health of women, regardless of their childbearing history or plans (Halfon et al., 2008; Hughes & Simpson, 1995; Misra et al., 2000). Focusing on early life health and development regardless of gender also seems warranted due to increasing recognition of and interest in examining the paternal contribution to MCH outcomes (Lanier, 2018).

Implications for the Types and Targets of Strategies to Improve MCH Outcomes

Not only does a life course perspective beg us to increase the timeframe of interventions and policies that are introduced or developed to address MCH problems, but it also requires that their range be expanded. By calling attention to the embedding of human agency within social and larger contexts, life course theory suggests intervening at multiple time points, and in multiple domains, to interrupt both downstream and upstream phenomena that contribute to adverse MCH outcomes and MCH inequities. It, therefore, requires an expansion of the definition of health policy to include social policy (Littlejohns

et al., 2019; Marmot, 2017; Raphael, 2011; Woolf, 2009) because the health sector has little or no control over many of the upstream determinants of MCH (and other health) problems (Forrest & Riley, 2004). Social policies could influence population-wide exposures, such as adverse environmental conditions or income inequalities, thereby altering the multiple contexts in which individuals are embedded early enough to prevent the preconception or childhood precursors of adult health and disease (Forrest & Riley, 2004; Graham & Power, 2004; Johnson, 2010; Melchior et al., 2007). They also hold greater potential for reducing MCH disparities and, thus, increasing health equity (Abresch & Wyche-Etheridge, 2018).

Translating this into practice means offering comprehensive health care services for women and their families over the entire life span, plus intensive health and social services focused on critical or sensitive periods of development (Fine & Kotelchuck, 2010). To improve perinatal health and reduce perinatal health inequities, for example, it has been suggested that a continuum of care is needed—one that is “longitudinal (over time), vertical (within the health sector), and horizontal (across health and other sectors)” (Fine & Kotelchuck, 2010, p. 14). Toward this end, Halfon and colleagues (2014) have suggested creating life course health development organizations in the U.S. that would promote health by supplementing vertically integrated health management organizations with horizontal social services and longitudinal intervention programs, thereby making clear the important roles that doctors, nurses, social workers, and public health practitioners can play in efforts to improve MCH. These scholars emphasize that this “social scaffolding” must start at the earliest stages of life because early investments are likely to produce compounding health returns that result in substantial savings on later life health expenditures. Thus, it also has the potential to fundamentally alter the cumulative dis/advantage process described earlier in the chapter and foster greater health equity (Abresch & Wyche-Etheridge, 2018). The ACA

mandates requiring electronic medical records and community health needs assessments that address social and environmental determinants of health provide limited, but promising, groundwork for these efforts.

Integration with community-based programs also may be necessary to reach women without access to the health care system, who are often at highest risk (Misra & Grason, 2006). For example, individual communities throughout the U.S. have successfully developed MCH-specific life course organizations, including the Northern Manhattan Perinatal Partnership and the Contra Costa County Life Course Initiative, to meet the needs of women and children in their catchment areas. (See Online Resources at the end of the chapter for websites.) In developing countries, greater continuity of care could be achieved by integrating women's health and family planning services into programs to reduce infant and child mortality, and by further incorporating MCH programs into existing funding mechanisms for HIV/AIDS and infectious diseases (Horton, 2010).

In addition to continuity of care, a life course perspective on MCH implies that intensive services should be focused on specific points or periods in the life span—for example, physiologically sensitive periods (such as childhood) or socially-defined transitions (such as the onset of the childbearing period)—with emphasis on concurrence between the two (Halfon & Hochstein, 2002). Due to higher levels of developmental plasticity in young children and the effects of early life programming on adult outcomes, interventions at this time may be more cost-effective for improving health status in later life (Halfon et al., 2014). Programs implemented in children younger than age 5 years have been shown to improve short- and long-term health outcomes (Guyer, 2009; Ma et al., 2014). Likewise, the increased emphasis on the preconception and interconception periods is expected to improve the timing of interventions surrounding this life stage (Nypaver et al., 2016).

Barriers to the Policy and Practice Changes Derived from a Life Course Perspective

MCH-specific life course organizations, such as the Northern Manhattan Perinatal Partnership, provide encouraging examples of what a life course approach to MCH *practice* can be and do. However, changing *public policy* in the ways discussed previously may be more challenging. First, it will necessarily require collaboration among multiple entities involved in forming health and social policy. However, federal agencies that can or do play a role in MCH-relevant health and social policies (or fund MCH-relevant interventions) are siloed and do not have a history of collaboration (Halfon et al., 2014). Future collaboration could be undermined by the lack of clarity about which agencies and policymakers would receive credit for MCH improvements resulting from social policies that have not been viewed historically as health policies (Braveman & Barclay, 2009).

Second, if social policy begins to be viewed as health policy and if its focus shifts from the prenatal period to childhood (or the preconception period more broadly) to improve perinatal health, expectations about the timeframe needed to reap and evaluate the policy benefits need to be adjusted (Braveman & Barclay, 2009; Forrest & Riley, 2004; Kawachi et al., 2010). To date, the health impacts of social policies have not been evaluated or included in cost-benefit analyses (Dow et al., 2010; Forrest & Riley, 2004), likely because longer timeframes for doing so, and probably a different set of monitoring and evaluation data, are needed. However, recent efforts to develop life course and preconception indicators (see Online Resources for more information) and to encourage states to adopt them may facilitate monitoring and evaluation of policies and practices informed by a life course perspective if/when data on the indicators are linked to data on MCH outcomes.

WRAP-UP

Conclusion

This chapter provided an introductory overview of the life course perspective and its applications to some of the most active areas of investigation in the MCH field. By tracing it to its roots in the social and behavioral sciences and linking it to historical and contemporary MCH scholarship, the chapter demonstrated how the life course perspective offers a framework for understanding the factors and processes that contribute to our health and well-being over time and the immediate and larger historical, social, and temporal contexts in which health trajectories unfold. In doing so, it revealed the advantages of a life course approach over prevailing approaches to understanding and addressing MCH problems that focus primarily on contemporaneous and individual-level risk factors. The chapter also showed how this approach can expand the range of questions asked and thereby produce information that has the potential to strengthen the evidence base for the life course-oriented policy and practice changes that have already begun to be proposed.

On both the global and domestic fronts, the challenges confronting the field of MCH are formidable, and new approaches to combat them are urgently needed. By expanding the field's focus and inspiring new questions, the life course perspective could be a much-needed catalyst for new strategies and solutions to the most intractable problems in MCH, including MCH inequities. While elements of this perspective have been present in the field for at least 150 years, never before has it attracted as much attention and excitement as it has in the past decade. Consequently, opportunities for applying the life course perspective to MCH research, policy, and practice are burgeoning.

With these unprecedented opportunities come new responsibilities for everyone in the

field of MCH. First, as the life course approach to MCH issues continues to be refined, it is critical that efforts to improve MCH are informed by the best available theory, measurement, and evidence. Familiarity with life course theory and life course epidemiology is essential. Second, investments in cohort studies, which provide the best form of data for evaluating life course hypotheses, must continue to be made. In the U.S., ongoing cohort studies such as the National Longitudinal Study of Adolescent to Adult Health (Harris, 2013) provide unique opportunities to study life course influences on MCH outcomes and inequities (e.g., Richardson et al., 2011; Strutz et al. 2012, 2014). Third, as new life course-oriented MCH policies and practices are developed and implemented, they must be evidence-based and include monitoring and evaluation components. While it is true that it may require years or even decades to detect the full impact of many life course initiatives, incorporating intermediate markers of progress should be possible. Fourth and finally, until a more solid evidence base exists, caution in pursuing the policy and practice changes implied by the life course paradigm should be exercised. While life course MCH evidence has been building for at least 75 years, many key questions remain. Nevertheless, whether one views the life course perspective on MCH as a new paradigm or simply the revival of old ideas, most scholars would agree that it has tremendous potential to impact MCH research, policy, and practice. Ensuring that life course policies and practices are based on the highest quality evidence and subjecting them to rigorous monitoring and evaluation will maximize the likelihood that this impact will be positive.

Summary of Key Points

- The life course perspective has a long history in the social and behavioral sciences.
- It is defined by five principles (life span development, human agency, timing, linked lives, and historical time and place) and three temporal concepts (trajectories, transitions, and turning points).
- It offers a framework for understanding (1) the factors and processes that contribute to our health and well-being over time and (2) the immediate and larger historical, social, and temporal contexts in which health trajectories unfold.
- This framework is advantageous over prevailing approaches to understanding and addressing MCH problems that focus primarily on contemporaneous and individual-level risk factors because it recognizes that experiences throughout one's life may have lasting health effects.
- It, therefore, expands the range and time-frame of questions asked in MCH research, as evidenced in some of the most active areas of MCH investigation: (1) the role of preconception health and well-being on maternal and infant health, (2) the contribution of adverse childhood experiences to adult health, and (3) the fetal or developmental origins of adult health and disease.
- This expansion, in turn, reveals the need for interventions in multiple domains, at multiple levels, and at multiple time points over the life course, unlike traditional policy and practice responses to MCH problems that do not reflect the longitudinal, multilevel, and multifaceted nature of life course theory.
- Life course theory-driven interventions, therefore, require an expansion of the definition of health policy to include social policy, with “social scaffolding” starting at the earliest stages of life to address upstream factors that are fundamental causes of the processes that produce MCH inequities within and across generations.

Discussion Questions

1. Discuss the myriad social and health phenomena revealed or highlighted by recent historical events, such as the COVID-19 pandemic of 2020, from a life course perspective. Then consider how the proposed or actual policy and practice responses might have differed if a life course perspective had been adopted prior to or during the onset of the event.
2. What, if any, contribution could the adoption of a life course perspective on men's health make to MCH? In which types of life course research described in this chapter would it make sense to consider paternal contributions?
3. What infrastructure needs to be in place if we are to fully adopt a life course perspective in MCH research, policy, and practice? How can political will for adopting a life course approach be built on a national level?
4. How can a life course perspective be used to inform (your agency's) strategic plans (e.g., goals and objectives, strategies, and assessment methods)?
5. What are some innovative methods for conducting life course theory-driven MCH research, especially given the limited availability or accessibility of multilevel and longitudinal cohort studies? How else can researchers measure factors at multiple levels and multiple periods throughout the life course and observe their influence on MCH outcomes?

Additional Resources

1. **MCH Life Course Toolbox:**
www.citymatch.org/mch-life-course/
2. **MCHB Life Course Approach Resource Guide:**
mchb.hrsa.gov/training/documents/Life-CourseResourceSheet9-2010.pdf
3. **MCH Life Course Research Network:**
www.healthychild.ucla.edu/pages/lcrn
4. **Association of Maternal & Child Health Programs (AMCHP) Life Course Indicators:**
www.amchp.org/programsandtopics/data-assessment/Pages/LifeCourseIndicators.aspx
5. **Core State Preconception Health Indicators:**
www.cste.org/page/preconindicators?&terms=core+and+state+and+preconception
6. **Northern Manhattan Perinatal Partnership:**
www.sisterlink.com/
7. **Contra Costa County Life Course Initiative:**
cchealth.org/groups/lifecourse/

Acknowledgments

Preparation of this chapter was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) [grant numbers P2C HD050924 and T32 HD091058] and by the Carolina Women's Center. The content is solely the responsibility of the authors and does not necessarily represent

the official views of NICHD or the Carolina Women's Center. Thanks are due to Claire Ashley for her research assistance. The authors also gratefully acknowledge Dr. Jon Hussey for his important contributions to the first edition of this chapter and Dr. Glen H. Elder, Jr. for his thoughtful comments on one of our earliest drafts.

References

- Abresch, C., & Wyche-Etheridge, K.W. (2018). Equity. In: Verbiest, S. (Ed.) *Moving life course theory into action: Making change happen* (pp. 41–56). Washington, DC: APHA Press.
- Adair, L., & Dahly, D. (2005). Developmental determinants of blood pressure in adults. *Annual Review of Nutrition*, 25, 407–434.
- Adams, J., Moody, J., & Morris, M. (2013). Sex, drugs, and race: How behaviors differentially contribute to the sexually transmitted infection risk network structure. *American Journal of Public Health*, 103(2), 322–329.
- Affifi, T. O., Enns, M. W., Cox, B. J., Asmundson, G. J. G., Stein, M. B., & Sareen, J. (2008). Population attributable fractions of psychiatric disorders and suicide ideation and attempts associated with adverse childhood experiences. *American Journal of Public Health*, 98(5), 946–952.
- Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., Dube, S. R., & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood - A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience*, 256(3), 174–186.
- Anderson, T. M., Ferres, J. M. L., Ren, S. Y., Moon, R.Y., Godstein, R.D., Ramirez, J., & Mitchell, E. A. (2019). Maternal smoking before and during pregnancy and the risk of sudden unexpected infant death. *Pediatrics*, 143(4), e20183325.
- Arendas, K., Qiu, Q., & Gruslin, A. (2008). Obesity in pregnancy: Pre-conceptional to postpartum consequences. *Journal of Obstetrics and Gynaecology Canada*, 30(6), 477–488.
- Arentson-Lantz, E. J., Zou, M., Teegarden, D., Buhman, K. K., & Donkin, S. S. (2016). Maternal high fructose and low protein consumption during pregnancy and lactation share some but not all effects on early-life growth and metabolic programming of rat offspring. *Nutrition Research*, 36(9), 937–946.
- Avison, W. R. (2010). Incorporating children's lives into a life course perspective on stress and mental health. *Journal of Health and Social Behavior*, 51(4), 361–375.
- Baird, D. (1964). Epidemiology of prematurity. *Journal of Pediatrics*, 65(6), 909–924.
- Barker, D. J. P. (1998). In utero programming of chronic disease. *Clinical Science*, 95(2), 115–128.
- Barker, D. J. P. (2006). Birth weight and hypertension. *Hypertension*, 48(3), 357–358.
- Bateson, P., Barker, D., Clutton-Brock, T., Deb, D., D'Udine, B., Foley, R. A., ... Sultan, S. E. (2004). Developmental plasticity and human health. *Nature*, 430(6998), 419–421.

- Ben-Shlomo, Y., Cooper, R., & Kuh, D. (2016). The last two decades of life course epidemiology and its relevance for research on ageing. *International Journal of Epidemiology*, 45(4), 973–988.
- Berkman, L. F. (2009). Social epidemiology: Social determinants of health in the United States: Are we losing ground? *Annual Review of Public Health*, 30, 27–41.
- Bianco-Miotto, T., Craig, J. M., Gasser, Y. P. van Dijk, S. J., & Ozanne, S. E. (2017). Epigenetics and DOHaD: From basics to birth and beyond. *Journal of Developmental Origins of Health and Disease*, 8(5), 513–519.
- Bird, C. E., & Rieker, P. P. (2010). *Gender and health: The effects of constrained choices and social policies*. Cambridge, UK: Cambridge University Press.
- Borschmann, R., Beckera, D., Spry, E., Youssef, G. J., Olsson, C. A., Hutchinson, D. M., ... Patton, G. C. (2019). Alcohol and parenthood: An integrative analysis of the effects of transition to parenthood in three Australasian cohorts. *Drug and Alcohol Dependence*, 197, 326–334.
- Braveman, P., & Barclay, C. (2009). Health disparities beginning in childhood: A life-course perspective. *Pediatrics*, 124(Supplement 3), S163–S175.
- Brown, D. W., Anda, R. F., Tiemeier, H., Felitti, V. J., Edwards, V. J., Croft, J. B., & Giles, W. H. (2009). Adverse childhood experiences and the risk of premature mortality. *American Journal of Preventive Medicine*, 37(5), 389–396.
- Browne, D. T., & Jenkins, J. M. (2012). Health across early childhood and socioeconomic status: Examining the moderating effects of differential parenting. *Social Science & Medicine*, 74(10), 1622–1629.
- Cavanagh, S. E., & Huston, A. C. (2008). The timing of family instability and children's social development. *Journal of Marriage and the Family*, 70(5), 1258–1270.
- Cecil, C. A. M., Smith, R. G., Walton, E., Mill, J., McCrory, E. J., & Viding, E. (2016). Epigenetic signatures of childhood abuse and neglect: Implications for psychiatric vulnerability. *Journal of Psychiatric Research*, 83, 184–194.
- Chalouhi, S. E., Tarutis, J., Barros, G., Starke, R. M., & Mozurkewich, E. L. (2015, December). Risk of postpartum hemorrhage among Native American women. *International Journal of Gynaecology and Obstetrics*, 131(3), 269–272.
- Chandler, A. (2019). A life course framework for improving the lives of boys and men of color. Oakland, CA: Forward Change Consulting. Retrieved August 1, 2020 from <http://forwardchangeconsulting.com/wp-content/uploads/2019/10/Life-Course-Framework-Presentation-Forward-Change.pdf>
- Clayborne, Z. M., Giesbrecht, G. F., Bell, R. C., & Tomfohr-Madsen, L. M. (2017). Relations between neighbourhood socioeconomic status and birth outcomes are mediated by maternal weight. *Social Science & Medicine*, 175, 143–151.
- Cockerham, W. C. (2013). Bourdieu and an update of health lifestyle theory. In *Medical sociology on the move: New directions in theory* (pp. 127–152). London, UK: Springer.
- Colen, C. G., Geronimus, A. T., Bound, J., & James, S. A. (2006). Maternal upward socioeconomic mobility and Black-White disparities in infant birthweight. *American Journal of Public Health*, 96(11), 2032–2039.
- Collins, J. W., David, R. J., Rankin, K. M., & Desireddi, J. R. (2009). Transgenerational effect of neighborhood poverty on low birth weight among African Americans in Cook County, Illinois. *American Journal of Epidemiology*, 169(6), 712–717.
- Collins, J. W., Wambach, J., David, R. J., & Rankin, K. M. (2009). Women's lifelong exposure to neighborhood poverty and low birth weight: A population-based study. *Maternal and Child Health Journal*, 13(3), 326–333.
- Conching, A. K. S., & Thayer, Z. (2019). Biological pathways for historical trauma to affect health: A conceptual model focusing on epigenetic modifications. *Social Science & Medicine*, 230, 74–82.
- Dannefer, D. (1987). Aging as intrachohort differentiation: Accentuation, the Matthew Effect, and the life course. *Sociological Forum*, 2(2), 211–236.
- de Jong, F., Monuteaux, M. C., van Elburg, R. M., Gillman, M. W., & Belfort, M. B. (2011). Systematic review and meta-analysis of preterm birth and later systolic blood pressure. *Hypertension*, 59(2), 226–234.
- DeVuono-Powell, S., Schweidler, C., Walters, A., & Zohrabi, A. (2015). *Who pays? The true cost of incarceration on families*. Oakland, CA: Ella Baker Center. Retrieved January 9, 2021 from <https://universitypretrial.org/HigherLogic/System/DownloadDocumentFile.aspx?DocumentFileKey=d256884d-f2be-55cd-f907-d704b4231cb9&forceDialog=0>
- DiPrete, T. A., & Eirich, G. M. (2006). Cumulative advantage as a mechanism for inequality: A review of theoretical and empirical developments. *Annual Review of Sociology*, 32, 271–297.
- Dong, M. X., Giles, W. H., Felitti, V. J., Dube, S. R., Williams, J. E., Chapman, D. P., & Anda, R. F. (2004). Insights into causal pathways for ischemic heart disease - Adverse Childhood Experiences Study. *Circulation*, 110(13), 1761–1766.
- Dow, W. H., Schoeni, R. F., Adler, N. E., & Stewart, J. (2010). Evaluating the evidence base: Policies and interventions to address socioeconomic status gradients in health. *Annals of the New York Academy of Sciences*, 1186, 240–251.
- Elder, G. H., Jr. (1975). Age differentiation and the life course. *Annual Review of Sociology*, 1, 165–190.
- Elder, G. H., Jr. (1979). Historical change in life patterns and personality. In P. B. Baltes & O. G. Brim (Eds.), *Life-span development and behavior* (pp. 117–159). New York, NY: Academic Press.
- Elder, G. H., Jr. (1994). Time, human agency, and social change: Perspectives on the life course. *Social Psychology Quarterly*, 57(1), 4–15.
- Elder, G. H., Jr. (2006). Life course perspective. In G. Ritzer (Ed.), *The Blackwell encyclopedia of sociology* (pp. 2634–2639). Malden, MA: Blackwell.
- Elder, G. H., Jr., & Johnson, M. K. (2003). The life course and aging: Challenges, lessons, and new directions. In R. A. Settersten (Ed.), *Invitation to the life course: Toward new understandings of later life* (pp. 49–84). Amityville, NY: Baywood Publishing Company, Inc.

- Elder, G. H., Jr., Johnson, M. K., & Crosnoe, R. (2004). The emergence and development of life course theory. In J. T. Mortimer, & M. J. Shanahan (Eds.), *Handbook of the life course* (pp. 3–19). New York, NY: Springer.
- Elder, G. H., Jr., & Shanahan, M. J. (2006). The life course and human development. In W. Damon & R. M. Lerner (Eds.), *The life course and human development* (pp. 665–715). New York, NY: Wiley and Stone.
- Ellis, W., & Dietz, W. (2017). A new framework for addressing adverse childhood and community experiences: The building community resilience (BCR) model. *Academic Pediatrics*, 17, S86–S93.
- Ely, D. M., & Driscoll, A. K. (2019). Infant mortality in the United States, 2017: Data from the period linked birth/infant death file. *National Vital Statistics Reports*, 68(10), 1–19.
- Emanuel, I. (1986). Maternal health during childhood and reproductive performance. *Annals of the New York Academy of Sciences*, 477, 27–39.
- Emanuel, I. (1993). Intergenerational factors in pregnancy outcome. Implications for teratology? In H. Kalter (Ed.), *Issues and reviews in teratology* (pp. 47–84). New York, NY: Plenum Press.
- Emanuel, I., Hale, C. B., & Berg, C. J. (1989). Poor birth outcomes of American Black women: An alternative explanation. *Journal of Public Health Policy*, 10(3), 299–308.
- Emanuel, I., & Sever, L. E. (1973). Questions concerning the possible association of potatoes and neural-tube defects, and an alternative hypothesis relating to maternal growth and development. *Teratology*, 8(3), 325–332.
- Eriksson, J. G., Kajantie, E., Osmond, C., Thornburg, K., & Barker, D. J. P. (2010). Boys live dangerously in the womb. *American Journal of Human Biology*, 22(3), 330–335.
- Feldacker, C., Emch, M., & Ennett, S. (2010). The who and where of HIV in rural Malawi: Exploring the effects of person and place on individual HIV status. *Health & Place*, 16(5), 996–1006.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults - the Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14(4), 245–258.
- Ferguson, T. S., Younger-Coleman, N. O., Tulloch-Reid, M. K., Knight-Madden, J. M., Bennett, N. R., Samms-Vaugh, M., ... Wilks, R. J. (2015). Birth weight and maternal socioeconomic circumstances were inversely related to systolic blood pressure among Afro-Caribbean young adults. *Journal of Clinical Epidemiology*, 68(9), 1002–1009.
- Fernandez-Twinn, D. S., & Ozanne, S. E. (2010). Early life nutrition and metabolic programming. *Annals of the New York Academy of Sciences*, 1212, 78–96.
- Fine, A., & Kotelchuck, M. (2010). *Rethinking MCH: The life course model as an organizing framework*. Washington, D.C.: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. Retrieved April 4, 2011 from <http://www.hrsa.gov/ourstories/mchb75th/images/rethinkingmch.pdf>
- Fomby, P., & Bosick, S. J. (2013). Family instability and the transition to adulthood. *Journal of Marriage and Family*, 75(5), 1266–1287.
- Forde, A. T., Crookes, D. M., Suglia, S., & Demmer, R. T. (2019). The weathering hypothesis as an explanation for racial disparities in health: A systematic review. *Annals of Epidemiology*, 33, 1–18.e3
- Forrest, C. B., & Riley, A. W. (2004). Childhood origins of adult health: A basis for life-course health policy - A plea for policy attention to the way child health problems affect a person's entire lifespan. *Health Affairs*, 23(5), 155–164.
- Frayne, D. J., Verbiest, S., Chelmos, D., Clarke, H., Dunlop, A., Hosmer, J., ... Zephyrin, L. (2016). Health care system measures to advance preconception wellness: Consensus recommendations of the clinical workgroup of the National Preconception Health and Health Care Initiative. *Obstetrics & Gynecology*, 127(5), 863–872.
- Gamborg, M., Byberg, L., Rasmussen, F., Andersen, P. K., Baker, J. L., Bengtsson, C., ... Sorensen, T. I. (2007). Birth weight and systolic blood pressure in adolescence and adulthood: Meta-regression analysis of sex- and age-specific results from 20 Nordic studies. *American Journal of Epidemiology*, 166(6), 634–645.
- Gavin, A. R., Chae, D. H., Mustillo, S., & Kiefe, C. I. (2009). Prepregnancy depressive mood and preterm birth in Black and White women: Findings from the CARDIA study. *Journal of Women's Health*, 18(6), 803–811.
- Gennaro, S. (2005). Overview of current state of research on pregnancy outcomes in minority populations. *American Journal of Obstetrics and Gynecology*, 192(5, Suppl. 1), S3–S10.
- Geronimus, A. T. (1992). The weathering hypothesis and the health of African-American women and infants: Evidence and speculations. *Ethnicity and Disease*, 2(3), 207–21.
- Geronimus, A. T., Hicken, M., Keene, D., & Bound, J. (2006). “Weathering” and age patterns of allostatic load scores among Blacks and Whites in the U.S. *American Journal of Public Health*, 96(5), 826–833.
- Geronimus, A. T., Hicken, M. T., Pearson, J. A., Seashols, S. J., Brown, K. L., & Cruz, T. D. (2010). Do U.S. Black women experience stress-related accelerated biological aging? *Human Nature*, 21(1), 19–38.
- Gershoff, E. T., Aber, J. L., Raver, C. C., & Lennon, M. C. (2007). Income is not enough: Incorporating material hardship into models of income associations with parenting and child development. *Child Development*, 78(1), 70–95.
- Goldenberg, R. L., Culhane, J. F., Iams, J. D., & Romero, R. (2008). Epidemiology and causes of preterm birth. *Lancet*, 371(9606), 75–84.
- Gould, E., & Wilson, V. (2020). Black workers face two of the most lethal preexisting conditions for coronavirus—racism and economic inequality. *Economic Policy Institute*. Retrieved August 1, 2020 from <https://www.epi.org/publication/black-workers-covid/>
- Goyal, D., Limesand, S. W., & Goyal, R. (2019). Epigenetic responses and the developmental origins of health and disease. *Journal of Endocrinology* 242(1), T105–T119.

- Graham, H. (2004). Social determinants and their unequal distribution: Clarifying policy understandings. *Milbank Quarterly*, 82(1), 101–124.
- Graham, H., & Power, C. (2004). Childhood disadvantage and health inequalities: A framework for policy based on lifecourse research. *Child Care Health and Development*, 30(6), 671–678.
- Graham, H. (2002). Building an inter-disciplinary science of health inequalities: The example of lifecourse research. *Social Science and Medicine*, 55(11), 2005–16.
- Guyer, B., Ma, S., Grason, H., Frick, K. D., Perry, D. F., Sharkey, A., & McIntosh, J. (2009). Early childhood health promotion and its life course health consequences. *Academic Pediatrics*, 9(3), 142–149.
- Haas, J. S., Fuentes-Afflick, E., Stewart, A. L., Jackson, R. A., Dean, M. L., Brawarsky, P., & Escobar, G. J. (2005). Pre-pregnancy health status and the risk of preterm delivery. *Archives of Pediatrics & Adolescent Medicine*, 159(1), 58–63.
- Halfon, N., DuPlessis, H., & Barrett, E. (2008). Looking back at pediatrics to move forward in obstetrics. *Current Opinion in Obstetrics & Gynecology*, 20(6), 566–573.
- Halfon, N., & Hochstein, M. (2002). Life course health development: An integrated framework for developing health, policy, and research. *The Milbank Quarterly*, 80(3), 433–479.
- Halfon, N., Inkelas, M., & Hochstein, M. (2000). The health development organization: An organizational approach to achieving child health development. *The Milbank Quarterly*, 78(3), 447–497.
- Halfon, N., Larson, K., Lu, M., Tullis, E., & Russ, S. (2014). Lifecourse health development: Past, present, and future. *Maternal Child Health Journal*, 18(2), 344–365.
- Halfon, N., Wise, P. H., & Forrest, C. B. (2014). The changing nature of children's health development: New challenges require major policy solutions. *Health Affairs*, 33(12), 2116–2124.
- Halfon, N., Forrest, C. B., Lerner, R. M., & Faustman, E. M. (2017). *The Handbook of Life Course Development*. Springer.
- Harder, T., Rodekamp, E., Schellong, K., Dudenhausen, J. W., & Plagemann, A. (2007). Birth weight and subsequent risk of Type 2 diabetes: A meta-analysis. *American Journal of Epidemiology*, 165(8), 849–857.
- Harris, K. M. (2013). *The Add Health study: Design and accomplishments*. Retrieved April 4, 2020 from <https://www.cpc.unc.edu/projects/addhealth/documentation/guides>
- Hertzman, C. (2004). The life-course contribution to ethnic disparities in health. In N. B. Anderson, R. A. Bulatao, & B. Cohen (Eds.), *Critical perspectives on racial and ethnic differences in health in late life* (pp. 145–170). Washington, DC: The National Academies Press.
- Hertzman, C., & Boyce, T. (2010). How experience gets under the skin to create gradients in developmental health. *Annual Review of Public Health*, 31, 329–347.
- Hofferth, S. L., Reid, L., & Mott, F. L. (2001). The effects of early childbearing on schooling over time. *Family Planning Perspectives*, 33(6), 259–267.
- Horton, R. (2010). Maternal mortality: Surprise, hope, and urgent action. *Lancet*, 375(9726), 1581–1582.
- Huang, G. C., Unger, J. B., Soto, D., Fujimoto, K., Pentz, M. A., Jordan-Marsh, M., & Valente, T. W. (2014). Peer influences: The impact of online and offline friendship networks on adolescent smoking and alcohol use. *Journal of Adolescent Health*, 54(5), 508–514.
- Hughes, D., & Simpson, L. (1995). The role of social-change in preventing low-birth-weight. *Future of Children*, 5(1), 87–102.
- Hussey, J. M., Chang, J. J., & Kotch, J. B. (2006). Child maltreatment in the United States: Prevalence, risk factors, and adolescent health consequences. *Pediatrics*, 118(3), 933–942.
- Johnson, R. C. (2010). The place of race in health disparities: How family background and neighborhood conditions in childhood impact later-life health. In H. B. Newburger, E. L. Birch, & S. M. Wachter (Eds.), *Neighborhood and life chances: How place matters in modern America* (pp. 18–36). Philadelphia: University of Pennsylvania Press.
- Kane, J. B., Morgan, S. P., Harris, K. M., & Guilkey, D. (2013). The educational consequences of teen childbearing. *Demography*, 50(6), 2129–2150.
- Kawachi, I., Adler, N. E., & Dow, W. H. (2010). Money, schooling, and health: Mechanisms and causal evidence. *Annals of the New York Academy of Sciences*, 1186, 56–68.
- Kermack, W. O., McKendrick, A. G., & McKinlay, P. L. (1934). Death-rates in Great Britain and Sweden: Some general regularities and their significance. *Lancet*, 223(5770), 698–703.
- Knop, M. R., Geng, T., Gomy, A. W., Ding, R., Li, C., Ley, S. H., & Huang, T. (2018). Birth weight and risk of type 2 diabetes mellitus, cardiovascular disease, and hypertension in adults: A meta-analysis of 7,646,267 participants from 135 studies. *Journal of the American Heart Association*, 7(23), 1–13.
- Kramer, M. R., Hogue, C. J., Dunlop, A. L., & Menon, R. (2011). Preconceptional stress and racial disparities in preterm birth: An overview. *Acta Obstetrica et Gynecologica Scandinavica*, 90(12), 1307–1316.
- Kreager, D. A. (2007). Unnecessary roughness? School sports, peer networks, and male adolescent violence. *American Sociological Review*, 72(5), 705–724.
- Kuh, D., Ben-Shlomo, Y., Lynch, J., Hallqvist, J., & Power, C. (2003). Life course epidemiology. *Journal of Epidemiology and Community Health*, 57(10), 778–783.
- Kuh, D., & Ben-Schlomo, Y. (2004). Introduction. In D. Kuh, & Y. Ben-Schlomo (Eds.), *A life course approach to chronic disease epidemiology* (pp. 3–14). Oxford, UK: Oxford University Press.
- Lanier, P. (2020). *Racism is an adverse childhood experience (ACE)*. Chapel Hill, NC: The Jordan Institute for Families. Retrieved August 1, 2020 from <https://jordaninstituteforfamilies.org/2020/racism-is-an-adverse-childhood-experience-ace/>
- Lanier, P. (2018). Appendix 1C: Fatherhood and life course. In: Verbiest, S. (Ed.). *Moving life course theory into action: Making change happen* (pp. 33–39). Washington, DC: APHA Press.

- Lawn, R. B., Anderson, E. L., Suderman, M., Simpkin, A. J., Gaunt, T. R., Teschendorff, A. E., ... Howe, L. D. (2018). Psychosocial adversity and socioeconomic position during childhood and epigenetic age: Analysis of two prospective cohort studies. *Human Molecular Genetics*, 27(7), 1301–1308.
- Link, B., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior*, 35(Extra Issue), 80–94.
- Littlejohns, L. B., Smith, N., & Townend, L. (2019). Why public health matters today more than ever: The convergence of health and social policy. *Canadian Journal of Public Health*, 110, 275–278.
- Love, C., David, R. J., Rankin, K. M., & Collins, J. W. (2010). Exploring weathering: Effects of lifelong economic environment and maternal age on low birth weight, small for gestational age, and preterm birth in African-American and White women. *American Journal of Epidemiology*, 172(2), 127–134.
- Lu, M. C., & Halfon, N. (2003). Racial and ethnic disparities in birth outcomes: A life-course perspective. *Maternal and Child Health Journal*, 7(1), 13–30.
- Lu, M. C. (2010). We can do better: Improving perinatal health in America. *Journal of Women's Health*, 19(3), 569–574.
- Lu, M. C., Verbiest, S., & Dominguez, T. P. (2018). Lifecourse theory: An overview. In: Verbiest, S. (Ed.), *Moving life course theory into action: Making change happen* (pp. 1–21). Washington, DC: APHA Press.
- Lumey, L. H., Stein, A. D., Kahn, H. S., van der Pal-de Bruin, K. M., Blauw, G. J., Zybert, P. A., & Susser, E. S. (2007). Cohort profile: The Dutch Hunger Winter Families Study. *International Journal of Epidemiology*, 36(6), 1196–1204.
- Ma, S., Frick, K. D., Crawford, A., & Guyer, B. (2014). Early childhood health promotion and its life course health consequences. In A. J. Reynolds, A. J. Rolnick, & J. A. Temple (Eds.), *Health and education in early childhood* (pp. 113–144). Cambridge, UK: Cambridge University Press.
- Maguire-Jack, K., Lanier, P., & Lombardi, B. (2020). Investigating racial differences in clusters of adverse childhood experiences. *American Journal of Orthopsychiatry*, 90(1), 106–114.
- Marmot, M. (2017). Social justice, epidemiology, and health inequalities. *European Journal of Epidemiology*, 32(7), 537–546.
- Martin, J. A., Hamilton, B. E., Osterman, M. J. K., & Driscoll, A. K. (2019). Births: Final data for 2018. *National Vital Statistics Reports*, 68(13), 1–10.
- Meckel, R. A. (1990). *Save the babies: American public health reform and the prevention of infant mortality, 1850-1929*. Baltimore: The Johns Hopkins University Press.
- Mehra, R., Boyd, L. M., & Ickovics, J. R. (2017). Racial residential segregation and adverse birth outcomes: A systematic review and meta-analysis. *Social Science & Medicine*, 191, 237–250.
- Melchoir, M., Moffitt, T. E., Milne, B. J., Poulton, R., & Caspi, A. (2007). Why do children from socioeconomically disadvantaged families suffer from poor health when they reach adulthood? A life-course study. *American Journal of Epidemiology*, 166(8), 966–974.
- Mersky, J.P. & Lee, C.P. (2019). Adverse childhood experiences and poor birth outcomes in a diverse, low-income sample. *BMC Pregnancy and Childbirth*, 19(1), 387.
- Merton, R. K. (1968). The Matthew Effect in science: The reward and communication systems of science are considered. *Science*, 159(3810), 56–63.
- Merton, R. K. (1988). The Matthew Effect in science, II: Cumulative advantage and the symbolism of intellectual property. *Isis*, 79(4), 606–623.
- Misra, D. P., & Grason, H. (2006). Achieving safe motherhood: Applying a life course and multiple determinants perinatal health framework in public health. *Women's Health Issues*, 16(4), 159–175.
- Misra, D. P., Grason, H., & Weisman, C. (2000). An intersection of women's and perinatal health: The role of chronic conditions. *Women's Health Issues*, 10(5), 256–267.
- Moos, M. K. (2010). From concept to practice: Reflections on the preconception health agenda. *Journal of Women's Health*, 19(3), 561–567.
- Morris, M., Kurth, A. E., Hamilton, D. T., Moody, J., & Wakefield, S. (2009). Concurrent partnerships and HIV prevalence disparities by race: Linking science and public health practice. *American Journal of Public Health*, 99(6), 1023–1031.
- Morrison, K. M., Ramsingh, L., Gunn, E., Streiner, D., Van Lieshout, R., Boyle, M., ... Saigal, S. (2016). Cardiometabolic health in adults born premature with extremely low birth weight. *Pediatrics*, 138(4), 1–9.
- Morton, S. M. B., De Stavola, B. L., & Leon, D. A. (2014). Intergenerational determinants of offspring size at birth: a life course and graphical analysis using the Aberdeen Children of the 1950s Study (ACONF). *International Journal of Epidemiology*, 43(3), 749–759.
- Nguyen, V., & Peschard, K. (2003). Anthropology, inequality, and disease: A review. *Annual Review of Anthropology*, 32, 447–474.
- Nypaver, C., Arbour, M., & Niederegger, E. (2016). Preconception care: Improving the health of women and families. *Journal of Midwifery & Women's Health*, 61(3), 356–364.
- Office of Disease Prevention and Health Promotion. (2020). *Healthy People 2020: Maternal, infant, and child health*. Washington, DC: U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Retrieved August 27, 2019 from <http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives>
- Organisation for Co-operation and Economic Development [OECD]. (2019). *Health at a Glance 2019: OECD Indicators*. Paris, France: OECD Publishing. Retrieved August 27, 2019 from <https://www.oecd.org/health-systems/health-at-a-glance-19991312.htm>
- O'Rand, A. M. (1996). The precious and the precocious: Understanding cumulative disadvantage and cumulative advantage over the life course. *The Gerontologist*, 36(2), 230–238.

- Peterson, E. E., Davis, N. L., Goodman, D., Cox, S., Mayes, N., Johnston, E., & Barfield, W. (2019). VitalSigns: Pregnancy-related Deaths, United States, 2011–2015, and Strategies for Prevention, 13 States, 2013–2017. *Morbidity and Mortality Weekly Report*, 68(18), 423–429.
- Phillips, G. S., Wise, L. A., Rich-Edwards, J. W., Stampfer, M. J., & Rosenberg, L. (2010). Prepregnancy depressive symptoms and preterm birth in the Black Women's Health Study. *Annals of Epidemiology*, 20(1), 8–15.
- Pies, C., Parthasarathy, P., Kotelchuck, M., & Lu, M. (2009). *Making a paradigm shift in maternal and child health: A report on the national MCH life course meeting*. Martinez, CA: Contra Costa Health Services. Retrieved March 10, 2011 from http://cchealth.org/groups/lifecourse/pdf/2009_10_meeting_report_final.pdf
- Pollitt, R. A., Rose, K. M., & Kaufman, J. S. (2005). Evaluating the evidence for models of life course socioeconomic factors and cardiovascular outcomes: A systematic review. *BMC Public Health*, 5, 7.
- Ponnet K., Wouters, E., Goedemém, T., & Mortelmans, D. (2013). Family financial stress, parenting and problem behavior in adolescents: An actor-partner interdependence approach. *Journal of Family Issues*, 37(4):574–597.
- Ports, K. A., Ford, D. C., & Merrick, M. T. (2016). Adverse childhood experiences and sexual victimization in adulthood. *Child Abuse & Neglect*, 51, 313–322.
- Raphael, D. (2011). The political economy of health promotion: part 1, national commitments to provision of the prerequisites of health. *Health Promotion International*, 28(1), 95–111.
- Ravelli, A. C. J., van der Meulen, J. H. P., Michels, R. P. J., Osmond, C., Barker, D. J. P., Hales, C. N., & Bleker, O. P. (1998). Glucose tolerance in adults after prenatal exposure to famine. *Lancet*, 351(9097), 173–177.
- Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin*, 128(2), 330–366.
- Richardson, L. J., Hussey, J. M., & Strutz, K. L. (2011). Origins of disparities in cardiovascular disease: Birth weight, body mass index, and young adult systolic blood pressure in the National Longitudinal Study of Adolescent Health. *Annals of Epidemiology*, 21, 598–607.
- Robbins, C. L., D'Angelo, D., Zapata, L., Boulet, S. L., Sharma, A. J., Adamski, A., ... Kroelinger, C. (2018). Preconception health indicators for public health surveillance. *Journal of Women's Health*, 27(4), 430–443.
- Roberts, E., & Wood, P. (2014). Birth weight and adult health in historical perspective: Evidence from a New Zealand cohort, 1907–1922. *Social Science & Medicine*, 107, 154–161.
- Roeder, A. (2019). America is failing its black mothers. *Harvard Public Health. Winter*. Retrieved April 20, 2020 from https://www.hsph.harvard.edu/magazine/magazine_article/america-is-failing-its-black-mothers/
- Schempf, A., Strobino, D., & O'Campo, P. (2009). Neighborhood effects on birthweight: An exploration of psychosocial and behavioral pathways in Baltimore, 1995–1996. *Social Science and Medicine*, 68(1), 100–110.
- Shiono, P. H., Rauh, V. A., Park, M., Lederman, S. A., & Zuskar, D. (1997). Ethnic differences in birthweight: The role of lifestyle and other factors. *American Journal of Public Health*, 87(5), 787–793.
- Slaughter-Acey, J. C., Calloway, D., & Tian, Y. (2016). Moving on up: Socioeconomic mobility and the risk of delivering a small-for-gestational age infant. *Maternal and Child Health Journal*, 20(3), 613–622.
- Smeerman, E. L., L. Almlí, M., Connelly, K. N., Brody, G. H., Sales, J. M., Bradley, B., ... Smith, A. K. (2016). Oxytocin receptor genetic and epigenetic variations: Association with child abuse and adult psychiatric symptoms. *Child Development*, 87(1), 122–134.
- Smith, M. V., Gotman, N., & Yonkers, K. A. (2016). Early childhood adversity and pregnancy outcomes. *Maternal and Child Health Journal*, 20(4), 790–798.
- Solomon, T. G. A., Cordova, F. M., & Garcia, F. (2017). What's killing our children? Child and infant mortality among American Indians and Alaska Natives. *NAM Perspectives*. Washington, DC: National Academy of Medicine. Retrieved January 8, 2021 from <https://nam.edu/whats-killing-our-children-child-and-infant-mortality-among-american-indians-and-alaska-natives/>
- Sotero, M. (2006). A conceptual model of historical trauma: Implications for public health practice and research. *Journal of Health Disparities Research and Practice*, 1, 93–108.
- St. Fleur, M., Damus, K., & Jack, B. (2016). The future of preconception care in the United States: Multigenerational impact on reproductive outcomes. *Upsala Journal of Medical Sciences*, 12(4), 211–215.
- Steegers, E. A. P. (2019). Understanding preconception health for early life course medicine. *Paediatric and Perinatal Epidemiology*, 33(6), 503–505.
- Stein, A. D., Zybert, P. A., Van der Pal-de Bruin, K., & Lumey, L. H. (2006). Exposure to famine during gestation, size at birth, and blood pressure at age 59 y: Evidence from the Dutch famine. *European Journal of Epidemiology*, 21(10), 759–765.
- Strutz, K. L., Hogan, V. K., Siega-Riz, A. M., Suchindran, C. M., Halpern, C. T., & Hussey, J. M. (2014). Preconception stress, birth weight, and birth weight disparities among U.S. women. *American Journal of Public Health*, 104(8), e125–e132.
- Strutz, K. L., Richardson, L. J., & Hussey, J. M. (2012). Preconception health trajectories and birth weight in a national prospective cohort. *Journal of Adolescent Health*, 51(6), 629–636.
- Strutz, K. L., Richardson, L. J., & Hussey, J. M. (2014). Selected preconception health indicators and birth weight disparities in a national study. *Women's Health Issues* 24(1), e89–e97.
- Susiarjo, M. (2016). Introduction to epigenetic mechanisms: The probable common thread for various developmental origins of health and diseases effects. In: Rosenfeld, C. S. (Ed.), *The epigenome and developmental origins of health and disease* (pp. 49–62). Amsterdam, Netherlands: Academic Press.

- Swaroop, S., & Morenoff, J. D. (2006). Building community: The neighborhood context of social organization. *Social Forces*, 84(3), 1665–1695.
- Torloni, M. R., Betran, A. P., Daher, S., Widmer, M., Dolan, S. M., Menon, R., ... Meriardi, M. (2009). Maternal BMI and preterm birth: A systematic review of the literature with meta-analysis. *Journal of Maternal-Fetal & Neonatal Medicine*, 22(11), 957–970.
- Tyrka, A. R., Ridout, K. K., & Parade, S. H. (2016). Childhood adversity and epigenetic regulation of glucocorticoid signaling genes: Associations in children and adults. *Development and Psychopathology*, 28(4pt2), 1319–1331.
- United Nations Department of Economic and Social Affairs (UN DESA) (2015). *The Millennium Development Goals Report 2015*. New York, NY: United Nations.
- United Nations Inter-Agency Group for Child Mortality Estimation. (2019). *Levels & trends in child mortality: Report 2019, estimates developed by the United Nations Inter-Agency Group for Child Mortality Estimation*. New York, NY: United Nations Children's Fund.
- U.S. Bureau of Labor Statistics. 2018. *Labor force characteristics by race and ethnicity, 2017*. BLS Report 1076. Washington, DC: Author.
- U.S. Census Bureau. (2020). *American Housing Survey 2017*. Washington, DC: Author. Retrieved August 1, 2020 from https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s_areas=00000&rs_year=2017&rs_tablename=TABLE1&rs_bygroup1=1&rs_bygroup2=1&rs_filtergroup1=1&rs_filtergroup2=1
- U.S. Department of Health and Human Services, Health Resources and Services Administration [HRSA]. (2019). *HRSA Maternal Mortality Summit: Promising Global Practices to Improve Maternal Health Outcomes Technical Report*. Washington, DC: Author. Retrieved August 27, 2019 from <https://www.hrsa.gov/sites/default/files/hrsa/maternal-mortality/Maternal-Mortality-Technical-Report.pdf>
- Van Dyck, P. C. (2010). *Moving from theory to practice: Life course, social determinants and health equity framework in maternal and child health*. Retrieved November 6, 2020 from <https://www.hrsa.gov/sites/default/files/ourstories/mchb75th/images/rethinkingmch.pdf>
- Verbiest, S. (Ed.). *Moving life course theory into action: Making change happen* (pp. 33–39). Washington, DC: APHA Press.
- Wade Jr., R., Cronholm, P. F., Fein, J. A., Forke, C. M., Davis, M. B., Harkins-Schwarz, M., ... Bair-Merritt, M. H. (2016). Household and community-level adverse childhood experiences and adult health outcomes in a diverse urban population. *Child Abuse & Neglect*, 52, 135–145.
- Wadsworth, M. E. J., Cripps, H. A., Midwinter, R. E., & Colley, J. R. T. (1985). Blood pressure in a national birth cohort at the age of 36 related to social and familial factors, smoking, and body mass. *British Medical Journal*, 291(6508), 1534–1538.
- Wald, N. (1993). Folic acid and the prevention of neural tube defects. *Annals of the New York Academy of Sciences*, 678, 112–129.
- Weisman, C. S., Misra, D. P., Hillemeier, M. M., Downs, D. S., Chuang, C. H., Camacho, F. T., & Dyer, A. M. (2011). Preconception predictors of birth outcomes: Prospective findings from the Central Pennsylvania Women's Health Study. *Maternal and Child Health Journal*, 5, 829–835.
- Whincup, P. H., Kaye, S. J., Owen, C. G., Huxley, R., Cook, D. G., Anazawa, S., ... Yarbrough, D. E. (2008). Birth weight and risk of Type 2 diabetes: A systematic review. *Journal of the American Medical Association*, 300(24), 2886–2897.
- Willis, M., Staudinger, U. M., Factor-Litvaka, P., & Calvo, E. (2019). Stress and salivary telomere length in the second half of life: A comparison of life-course models. *Advances in Life Course Research*, 39, 34–41.
- Willson, A. E., Shuey, K. M., & Elder, G. H., Jr. (2007). Cumulative advantage processes as mechanisms of inequality in life course health. *American Journal of Sociology*, 112, 1886–1924.
- Wolfe, J. D. (2009). Age at first birth and alcohol use. *Journal of Health and Social Behavior*, 50(4), 395–409.
- Woolf, S. H. (2009). Social policy as health policy. *Journal of the American Medical Association*, 301(11), 1166–1169.
- World Health Organization [WHO]. (2015). *Trends in maternal mortality: 1990 to 2015: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division*. Geneva, Switzerland: Author.
- World Health Organization [WHO]. (2017). *Reaching the Every Newborn national 2020 milestones: Country progress, plans and moving forward*. Geneva, Switzerland: Author.
- Xu, J., Kochanek, K. D., Murphy, S. L., & Tejada-Vera, B. (2010). Deaths: Final data for 2007. *National Vital Statistics Reports*, 58.
- Yarmolinsky, J., Mueller, N. T., Duncan, B. B., Chor, D., Bensenor, I. M., Griep, R. H., ... Schmidt, M. I. (2016). Sex-specific associations of low birth weight with adult-onset diabetes and measures of glucose homeostasis: Brazilian Longitudinal Study of Adult Health. *Scientific Reports (Nature Publisher Group)*, 6(1), 1–9.
- Zimmermann, E., Gamborg, M., Sørensen, T. I. A., & Bake, J. L. (2015). Sex differences in the association between birth weight and adult type 2 diabetes. *Diabetes*, 64(12), 4220–4225.



CHAPTER 3

Families and Health

Joseph Telfair, Joanne Chopak-Foss, Janet Choongo, and Kim Harris

In dwelling, live close to the ground. In thinking, keep to the simple. In conflict, be fair and generous. In governing, don't try to control. In work, do what you enjoy. In family life, be completely present.

Introduction

Historical and ethical concerns with the needs of children are inextricably linked with the family, the social institution most basic to the study and practice of maternal and child health (MCH). While the basic concept of family is a group of two people or more (one of whom is the householder) related by birth, marriage, or adoption and residing together (U.S. Census Bureau, 2019a), the definition of family has evolved over the past 50 years. In contrast to the theory that the extended family was the prevalent structure in preindustrial society, in the U.S., the predominant family system has always been the nuclear family (i.e., social positions of husband–father, wife–mother, and offspring). Relationships with extended kin had importance, but as the mobility of families has increased due to industrialization, accessibility to these relationships has decreased. Mobility has also changed the definitions, perceptions, and understanding of what a family is to reflect fictive (relative or close family friends such as a godparent),

transactional (complex patterns of influence in interparental, father–child, mother–child, and sibling relationships), transitional (when the parents leave to work in another country, giving over care of their children to a grandmother or aunt), and situational (professional caregivers or caretakers who become parent figures) families; LGBTQI (lesbian, gay, bisexual, transgender, queer, and/or intersex) parents; grandparents raising grandchildren; and blended or salad families with married stepparents and nonmarital unions (cohabitation) with children. Often overlooked when describing families are the homeless and other socially stigmatized populations (e.g., the large number of minority men and women in prison, people without documentation, those with HIV/AIDS, and others) (Katz-Wise et al., 2016).

It is of value in MCH practice to recognize that, as a system-level foundation for social development, a healthy, nurturing family is essential to a child's as well as a parent's physical, emotional, and social development. Consistent, supportive relationships as well as adequate nutrition, safe environments, access to education, and healthy lifestyles are as important to the well-being of children and parents as is timely access to appropriate medical care (Center for the Future of Children, 2015). This chapter provides an overview of the evolution of the current American family from

1970 through the present. As part of the overview, there is a discussion of how polices, context, and family structure impact family function and well-being and contribute to inequities that lead to health disparities and poor health outcomes in the U.S.

American Family Composition Over Time

Around the time of World War II, adult children tended to live near their parents, creating communities with multigenerational kinship ties. There was a continuity of shared values and prescribed family roles. For example, men were seen as the major wage earners, and women remained at home, if possible, with the responsibility of rearing the children. Furthermore, because of the values of close family bonds, mutual support, and the overall well-being of the community, the care of poor children and families

was not always seen as a responsibility to be shared by the community and the governments.

Trends in family units over time demonstrate that the number of married households has steadily declined from 1970 to 2019 (Figure 3-1). Increasing since 1970 has been the number of children who are living in single-mother households. This peaked to more than 60% in 1980 and declined steadily through 2017. The data show that many children in the U.S. are growing up without the presence of their father in the home. According to the U.S. Census Bureau, 19.7 million children, more than 1 in 4, live without a father in the home (Grall, 2020; U.S. Census Bureau, 2017). Single fatherhood and its effects on children's health and well-being will be addressed later in the chapter.

Reasons for the changing trends in family structure are varied and include the adjustment of social mores and attitudes surrounding sexuality, partnerships, and parenting that gradually developed from the start of the 20th century

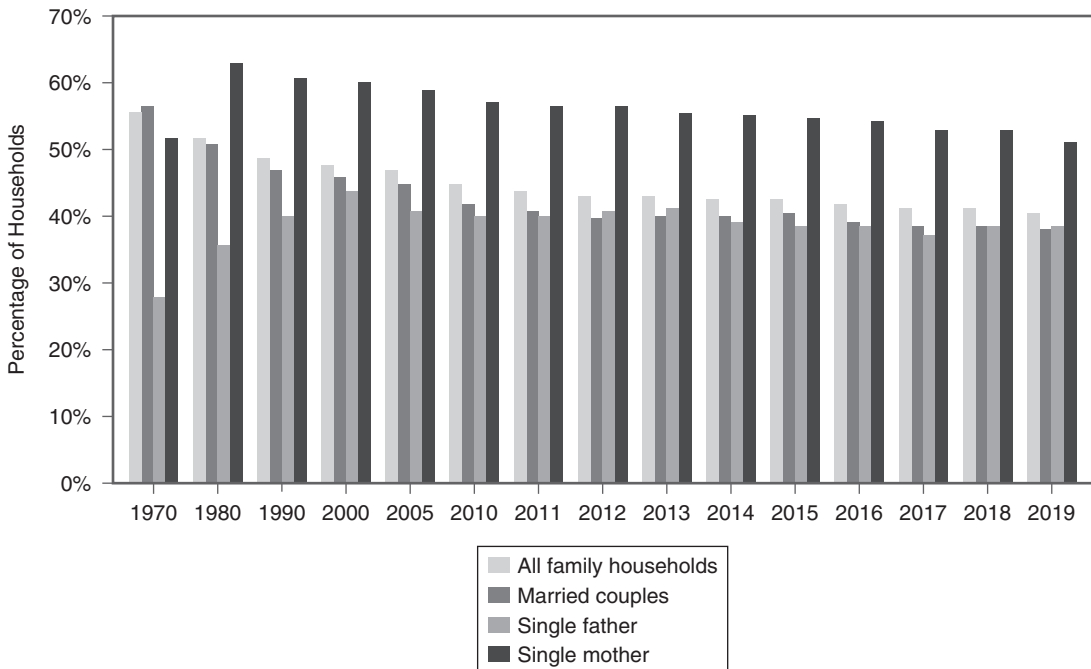


Figure 3-1 Family households with their own children younger than 18 years in the U.S. from 1970 to 2019, by type of family.

Source: US Bureau of the Census, 2019

onward (Coleman & Ganong, 2014; Mehta, 2014). Specific social events in the 1960s, such as the introduction of oral contraception, the feminist movement, and the co-education of college campuses and residence halls, are often considered the harbingers of significant shifts in American family composition (Goldin & Mitchell, 2017).

Trends in family composition in the U.S. differ by racial and ethnic groups. Between 1970 and 2018, the proportion of two-parent family groups has declined for White non-Hispanics, Blacks, and persons of Hispanic origin (who may be of any race), whereas father-child and mother-child family groups have increased. According to the 2016 census data, the percentage of children living with married parents was highest for Asian children (84%), followed by White children (73%); children of two or more races, Pacific Islander children, and Hispanic children (57% each); and American Indian/Alaska Native children (45%). The percentage was lowest for Black children (33%).

However, in 2018, across racial/ethnic groups, the majority of children younger than 18 lived with married parents. The pattern of a higher percentage of children living in married-couple households than in mother- and father-only households was observed for children across all racial/ethnic groups, except for Black children. Fifty-five percent of Black children lived in mother-only households, compared with 34% who lived in married-couple households and 8% who lived in father-only households. Different factors have contributed to the gap. For example, high rates of incarceration and high unemployment rates in the Black male population, which are largely due to historic and structural racism, have contributed to low marriage rates and therefore increasing the number of Black children living with mothers only (Schneider et al., 2018). While the racial majority (61.3%) are Caucasian/White, African Americans/Blacks are the largest racial minority, comprising an estimated 12.7% of the population. Hispanic and Latino Americans are the largest ethnic minority, comprising an estimated 17.8% of the population (U.S. Census Bureau, 2016).

Immigrant and Refugee Families

The percentage of all children younger than 18 years living in the U.S. who had at least one foreign-born parent has grown from 15% in 1994 to 26% in 2018 (U.S. Census Bureau, 2018). In 2016, the ethnic composition of American families has been significantly impacted by the influx of immigrant families over the past few decades. From 2000 to 2018, the foreign-born population increased from 31.1 million to 44.7 million. In 2018, the countries of origin with the most immigrants were Mexico (25% of immigrants), India (6%), China (5%), the Philippines (4%), and El Salvador (3%) (American Immigration Council, 2020).

From 1990 to 2000, the foreign-born population increased by 57% from 19.8 million to 31.1 million (Malone et al., 2003). Since 2000, the Hispanic population has grown to constitute the largest minority group in the U.S. The proportion of American children who are Hispanic has grown from 9% in 1980 to 22% in 2008 (Federal Inter-agency Forum on Child and Family Statistics, 2009). This proportion of children is now higher than the proportion of Black non-Hispanic children (15% in 2008). As of 2008, the majority of family households in the foreign-born population are headed by married couples (55.3%), and foreign-born households are more likely than native-born households to constitute families of three or more people. Approximately 46.5% of foreign-born households had three- or four-person families, in contrast to 40.3% of native-born households, and the percentage of foreign-born households that have five or more family members is more than double the percentage for native-born households (Pew Hispanic Center, 2010).

Family Separation and Historic Trauma

One of the biggest threats to immigrant families in the U.S. in current times is the government's stringent immigration policy. The zero-tolerance policy of the Trump administration has prompted separation of 2,654 children from their families

(American Civil Liberties Union, 2018). Separation from parents, who are the primary caregivers, can have detrimental psychological and physical health impacts on children and parents alike. Studies have indicated that children experiencing trauma can develop severe health symptoms like sleeping disorders and eating disorders (American Academy of Pediatrics [AAP], n.d.). Families who have recently immigrated to the U.S. often have experienced violence, trauma, abuse, and/or human trafficking (Simha, 2019). The fear and trauma of deportation keeps immigrant families from accessing public benefits, including health care appointments. The current immigration laws impose systematic barriers for family reunification and damage family structures (Enchautegui & Menjivar, 2015).

Grandparent-Led Families

Grandparents play a significant role in many children's lives in the U.S. Over the past two decades, grandparents carried more responsibility for their grandchildren due to an increase of children living in grandparent households that started in the 1990s. In 2000, the Current Population Survey determined that 4 million children (5% of all children) younger than 18 years lived with a grandparent. The number of children living in a grandparent's household rose from 4.6 million in 2005–2007 to 5.2 million in 2008–2010. In 2016, there were over 7.2 million grandparents nationwide living with their grandchildren younger than 18, with over 2.5 million responsible for most of the basic needs of their grandchildren (U.S. Census Bureau, 2017a).

Thirty-three percent of children living with a grandparent had both mother and father living with them, 41% of children lived with a mother and no father, and 4% lived with a father and no mother. The other 22% lived with their grandparents only (U.S. Census Bureau, 2010b). A variety of factors may be contributing to this trend. Grandparents may be called upon, often with little preparation, to provide primary care for their grandchildren in the face of family crisis. These circumstances can be stressful, not only for children, but also for their grandparents, who

often need to make major adjustments (social, psychological, and financial) in their lives to step into a role they had not planned for, and for which they may be poorly prepared.

Recent immigrants are more likely to live in extended family households. Births outside of marriage are associated with a mother and child being more likely to live with the mother's parent(s). Economic need leads parents to leave a child with a grandparent while they travel for work (including military deployment). Mental illness, divorce, and death can prompt the need for grandparents to assist with childrearing. Some racial/ethnic groups are more likely to live in multi-generational households.

The current opioid epidemic in the U.S. has resulted in many grandparents stepping in to care for and raise their grandchildren (Generations United, 2016; MacQuarrie, 2017; Smith, 2018; Anderson, 2019). When parents have been incarcerated, are in treatment programs, or are unable to care for their children due to substance abuse disorders, most tend to stay in foster care or with other relatives. In 2016, 34% of children who entered foster care did so due to parental substance abuse (U.S. Department of Health and Human Services, 2017), as shown in **Figure 3-2**.

The trend of increased responsibilities of grandparents for their children and grandchildren have significant implications on the children's socioeconomic status. This trend affects both health insurance coverage and public assistance, with significant differences found when comparing children living with grandparents with and without parents present (Fields, 2003). As of 2009, a greater proportion of uninsured children lived with single or married grandparents without a parent present (22%). This trend particularly affects children who live with single grandmothers. The proportion of uninsured children who lived with single grandmothers without a parent present is significantly greater than the proportion of uninsured children who live with a single parent and both parents (25% vs. 15% vs. 8%) (U.S. Census Bureau, 2010b). Financial resources from parents are a primary source for economic well-being for children and when they

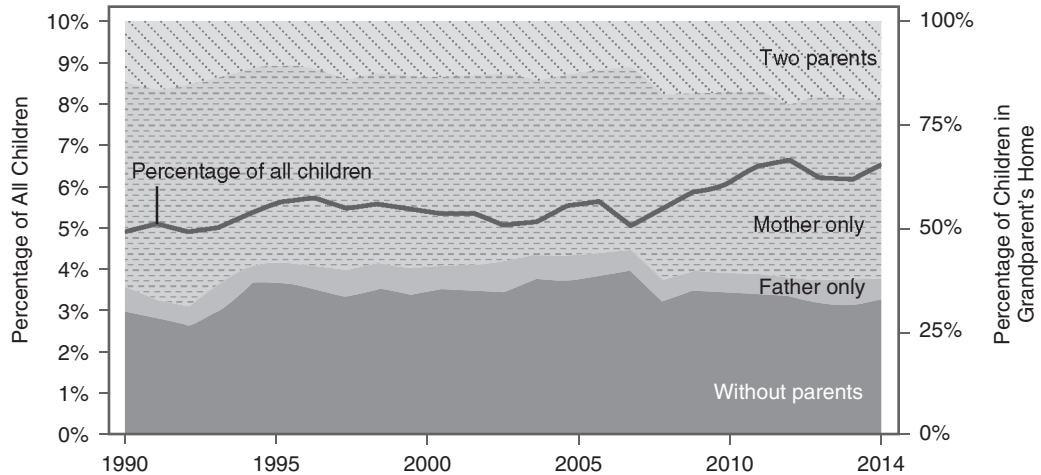


Figure 3-2 Presence of parents for children living in the home of a grandparent.

U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplements, 1990 to 2014.

live with their children, they are more likely to contribute to the household economy and children's health needs (Current Population Reports, 2003; Fields, 2003). Further, 40% of grandparents report having unmet social needs for themselves and their grandchildren (Sampson, 2015). There are benefits to children living with their grandparent; for example, studies have shown that children who live with their grandparents have fewer problems than those who end up in foster care with nonrelatives (Rubin, 2008). Grandparents are important in their children's and grandchildren's lives, but when they become responsible for the full social and economic support of these children, it can result in hardship.

Marriage, Divorce, and Remarriage and Single Parenthood

Since 1960, changes in the social and technologic fabric of American society have led to dramatic challenges and changes for families. Married-couple families dropped from 87% in 1970 to 48% in 2019, which is less than half of all households in the U.S. (U.S. Census Bureau, 2019). The overall marriage rate has decreased from 76% of all women 15 years of age and older in 1970 to 48% in 2019 (U.S. Census Bureau, 2019). The trend is

consistent with women moving away from "traditional" and historical social and cultural practices to being more independent and self-sufficient/reliant in the areas of work, family, and finance.

Changing perceptions of the role of women have led to more opportunities for women to delay (choosing to marry at a later age) or not pursue marriage as the path to having a family. Women's access to higher education and careers rose significantly between 1960 and 1990.

In 2018, the median age at first marriage was 28 years for women and 30 for men (Payne, 2019), as shown in **Figure 3-3**.

As the public attitudes about marriage continue to change, the average age for first marriage continues to be on the rise, with the median age for men at 29.8 and 28.0 for women in 2019. It is noteworthy that in 2019, estimates for marriages now include same-sex couples (U.S. Census Bureau, 2019). The legalization of same-sex marriage in mid-2015 may have resulted in raising the average age of first marriage in the years that followed, as long-committed couples were finally able to be legally wed (Bosley-Smith, 2018).

Median age at first marriage by race and ethnicity varies. In 2017, Black men and women had the highest median ages at first marriage, at 32.0 for men and 30.4 for women. Among men,

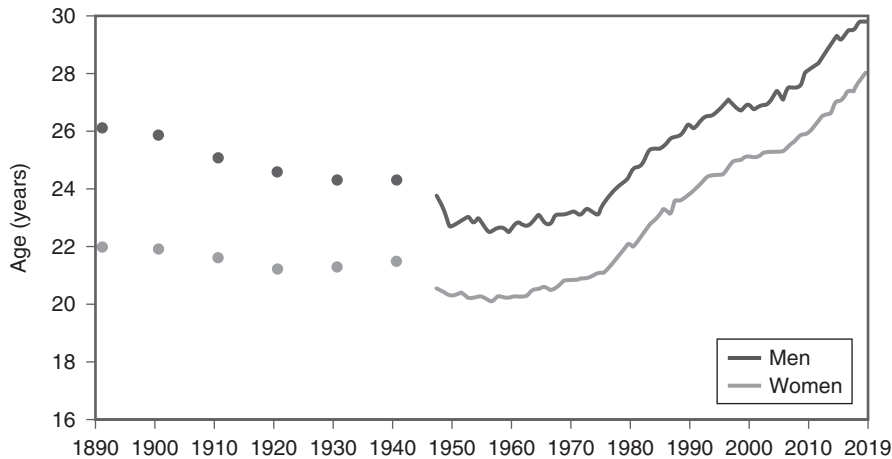


Figure 3-3 Median Age at First Marriage by Sex: 1890 present.

U.S. Census Bureau, Decennial Censuses, 1890 to 1940, and Current Population Survey, Annual Social and Economic Supplements, 1947 to 2019. Note: Starting in 2019, estimates for marriages now include same-sex married couples.

Whites had the lowest median age at first marriage, 29.4. Among women, Hispanics had the lowest median age at first marriage, 27.5.

Extended Families and Cohabiting Parents

Other noteworthy trends in the U.S. family are the growing numbers of extended families and cohabiting parents and the decreasing number of blended families. Blended families are created when remarriages result in stepparents living in the household with their children from previous marriages. Extended families are created when a child lives with at least one parent and someone other than his or her own parents or siblings, often an additional relative. Cohabiting parent-child families are defined as the when the child's parent is living with at least one nonrelated adult of the opposite sex. This person may or may not be the biological parent of the child. Falling marriage rates are parallel to the rise in cohabitation (Lundberg et al., 2016). A growing number of children younger than 18 years live with cohabiting parents. In 2018, 69% of children younger than 18 lived with two parents (65% with two married parents and 4% with two cohabiting parents), 22% lived with their mothers only, 4% lived with their fathers only, and 4%

lived with no parent. Of the single parents who had cohabiting partners, 29% of children living with single fathers and 11% of children living with single mothers also lived with their parents' cohabiting partner. Of all children ages 0–17, 5.8 million (8%) lived with a parent or parents who were cohabiting. **Table 3-1** describes these trends over time. The growing number of children living with extended and cohabiting parents can be attributed to decrease in marriage and increase in births outside of marriage (Pew Research Center, 2018).

Fathers

While traditionally occupying less attention than mothers in MCH practice, fathers and their impact on their children remain important to understanding childhood health and well-being. Trends in fathering and time spent with children shifted more gradually compared to that of mothers in the latter part of the 20th century before rising in recent decades (Hofferth & Lee, 2015). As of 2018, 20% of fathers were custodial parents to their biological, minor child (or children), an upward shift of 4% since 1994 (Grall, 2020). Whether married, solo, or noncustodial, fathers reported spending more time with their children in 2013 than they did in the years preceding the 2008 recession (Hofferth & Lee, 2015).

Table 3-1 Family Composition in the U.S. over Time

Household Type	1960	1980	2000	2010	2020
Family households	55	74	68	66	65
Married couples w/children	44	31	24	20	19
Married couples w/out children	31	30	28	28	30
Single parents w/children	4	7	9	10	9
Other family	6	6	7	8	9
Nonfamily households	15	26	32	34	35
One person	13	23	26	27	28
Other nonfamily	2	4	6	7	7

Data from Family Households With Own Children Under 18 Years in the United States from 1970 to 2018 by Type of Family. In Statista – The Statistics Portal. Retrieved November 11 2020, from <https://www.statista.com/statistics/242074/percentages-of-us-family-households-with-children-by-type/>

Interest in the amount of time fathers spend with their children overlays with that of their participation in childrearing practices and role in their children's development. Ascertaining fathers' involvement with their children is as multifaceted as that of mothers and other caregivers, and time counts alone are not sufficient in examining the impact on health (Schoppe-Sullivan & Fagan, 2020). Nevertheless, increased time spent with children has been shown to improve social and emotional cues and coping, reduce use of alcohol and drugs, and support school performance (Karberg et al., 2019).

Family Median Income

As of 2017, the U.S. Census Bureau defines low income as 100–199% of the current poverty level, medium income as 200–399% of the current poverty level, and high income as 400% or above the poverty level. The median income for the White population increased from \$60,000 in 2010 to \$70,000 in 2017 (U.S. Census Bureau, 2017). The median family income has fluctuated over time, reflecting women's increased participation in the labor force, recessions, and cost of living (U.S. Census Bureau, 2010f). **Figure 3-4** depicts the changes over time. The median household

income was \$63,179 in 2018, not statistically different from the 2017 median. At the time writing, data on household income for 2020 were not available; however, it is anticipated that family income has declined due to the economic impact of the COVID-19 pandemic.

For family households, married-couple households had the highest median income in 2018 (\$93,654), followed by households maintained by men with no spouse present (\$61,518). Family households maintained by women with no spouse present had the lowest median income (\$45,128). Looking at nonfamily households, real median income for male householders (\$45,754) increased 4.4% between 2017 and 2018, while the change in real median income was not statistically significant for female-headed households. This reflects ongoing pay gaps for women.

As the median income has fluctuated since the early 1980s, the status for families with children has constantly changed. In 2001, more children lived in families with relatively medium incomes (33%) than in other income groups; 22% lived in relatively low-income families, and 29% lived in relatively high-income families (U.S. Census Bureau, 2002). However, the percentage of children living in families with relatively medium incomes fell from 41% in 1980 to 33%

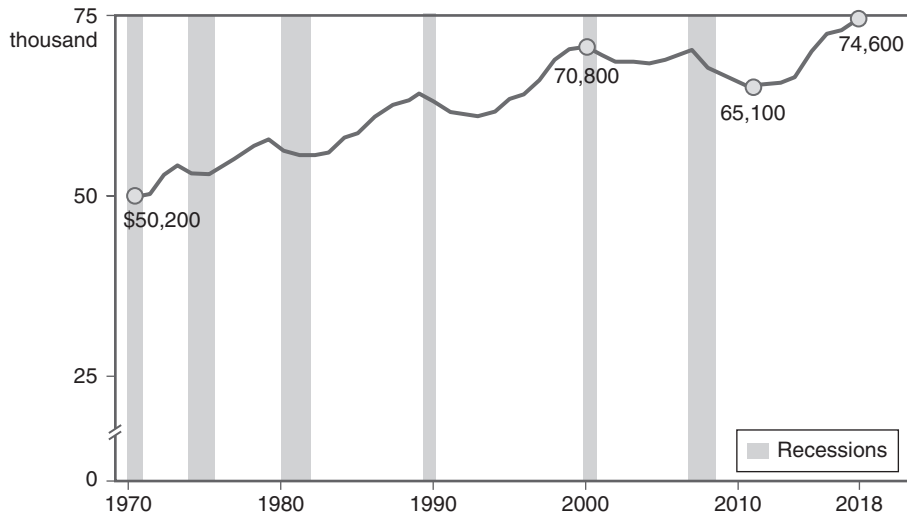


Figure 3-4 Median U.S. household income adjusted for household size and scaled to reflect a three-person household, in 2018 dollars. Grey = recessions.

Pew Research Center analysis of the Current Population Survey, Annual Social and Economic Supplements (IPUMS). "Most Americans Say There is Too Much Economic Inequality in the U.S., but Fewer Than Half Call It a Top Priority." https://www.pewsocialtrends.org/2020/01/09/trends-in-income-and-wealth-inequality/psdt_01-10-20_economic-inequality_1-0/

in 2001, whereas the percentage of children living in families with relatively high incomes rose from 17% to 29% during that same period (Federal Interagency Forum on Child Health and Family Statistics, 2003). These rates had remained relatively the same as more children lived in medium-income families (32%) than in low-income families (21%) or high-income families (30%) as of 2007 (Federal Interagency Forum on Child Health and Family Statistics, 2009). These trends shifted in 2011 when the percentage of children younger than 18 years living in low-income families increased to 45% in 2011 and the percentage of children living in poverty was 22%. This change is attributed to the financial crisis of 2007–2009 (Addy et al., 2013).

The 2019 real median incomes of White, Black, Asian, and Hispanic households all increased from 2018. However, as shown by **Figure 3-5**, the median family income differs significantly by race. Real median household income between 2018 and 2019 increased for all households across all major race and Hispanic-origin groups. Asian median household income was the highest at \$98,174; compare this to the Black median household, which was significantly lower at \$45,438. This disparity is the result of historic

and structural racism, which has made it more difficult for Black people and families to have access to education, well-paying jobs, health insurance, housing in neighborhoods with high social capital, and wealth/asset-building opportunities.

Factors That Influence Family Health

Parents in the Workforce

Women continue to comprise almost half of the current workforce, both from traditional two-parent families to other iterations of multigenerational families, including two same-sex parent families and those who are single parents by choice or by circumstance (divorce or widowhood). The degree to which women in the workforce have changed family dynamics continues to evolve. Pay equity, as well as the type of employment, are important factors in considering the overall health of the family.

The number of women in the workforce began to increase in 1950. This was in part a result of many women who became the head of household following World War II and later due to the Korean conflict. Further, more women began attending

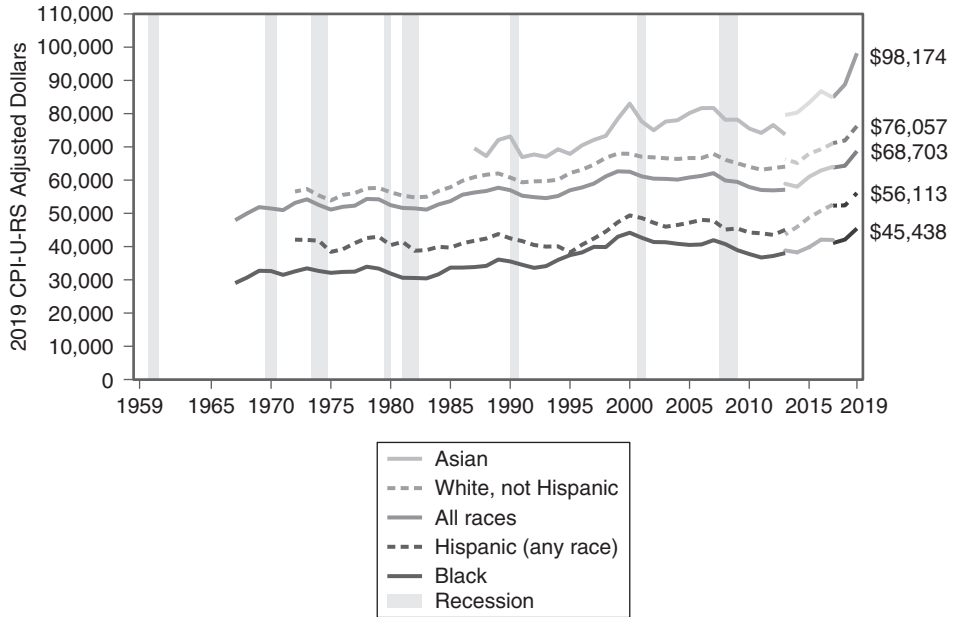
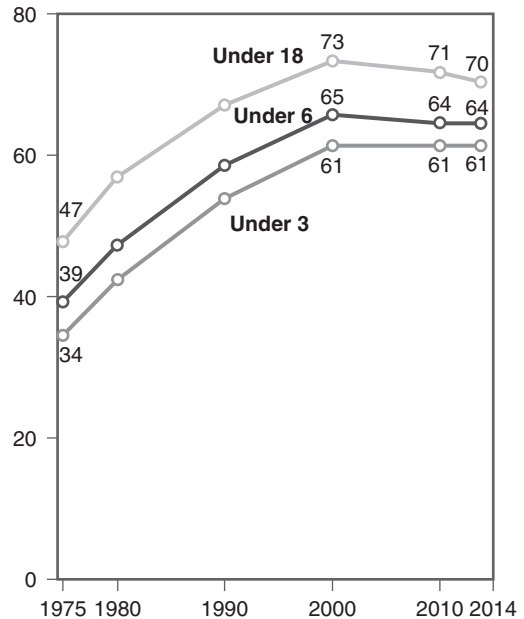


Figure 3-5 Median household income by race and Hispanic origin: 1967 to 2019.

U.S. Census Bureau, Current Population Survey, 1968 to 2019 Annual Social and Economic Supplements.

postsecondary institutions. While the primary fields in which they entered continued to be the lower-paid professions of nursing, education, and social work, many began branching out into what were considered traditional male-dominated fields such as medicine and law. However, many in this generation of women departed the workforce to raise children, resuming work participation in their 60s and 70s (**Figure 3-6**).

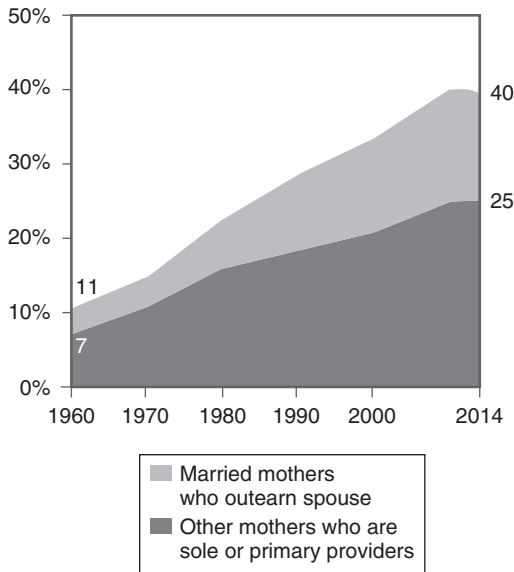
As of 2015, 47% of women were part of the labor force in the U.S. (U.S. Bureau of Labor Statistics, 2015). As described in **Figure 3-7**, women’s income is essential for many families. Women’s participation in the workforce varies by race. Black women aged 16 years and older have a high workforce participation rate of 59%, followed by White women at 56.7%. Cuban women have a lower participation rate, at 55.9%. Filipino and Laotian women form the highest workforce participation at 68.2% and 64.8%, respectively, and Pakistani and Bangladeshi forms the lowest workforce participation at 41.8% and 44.3%, respectively (Status of Women in the States, 2015). There is strong evidence to support that



Note: Mothers working full time or part time are included as being in the labor force.

Figure 3-6 Among mothers, rising labor force participation.

Pew Research Center, Social and Demographic Trends. https://www.pewsocialtrends.org/2015/12/17/parenting-in-america/st_2015-12-17_parenting-19/



Note: Based on families where the mother or father is the household head. “Married mothers” include only those whose spouse lives in the household. “Other mothers who are sole or primary providers” include unmarried mothers and married mothers who live apart from their spouse.

Figure 3-7 In four-in-ten families, mom is the primary breadwinner.

Pew Research Center analysis of decennial census 1960-2000 and American Community Survey data 201-2014 (IPUMS). https://www.pewsocialtrends.org/2015/12/17/parenting-in-america/st_2015-12-17_parenting-20/

women’s participation in the workforce is dependent on several factors, including educational attainment, marital status, and parental status (U.S. Department of Labor, n.d.). There are significant pay gaps between White women and Black women, with White women often paid more than Black women for equal labor. Overall, women’s work of childrearing, household management, caring for elderly relatives, volunteer service in faith communities and schools, and supporting other family economic efforts is essential to society. This work is unrecognized and, as a result, disadvantages women’s ability to build wealth and impacts economic supports such as retirement.

Among married-couple families with children, the proportion in which both partners worked was 72.8% in 2019, representing an increase from 70% in 2018. With regard to single-parent families with children ages 6 to 17

years, 81.3% of custodial single parents worked at least part-time in 2015 (Grall, 2020). Custodial mothers were less likely to have full-time employment than custodial fathers (50.2% vs. 68.2%) (Grall, 2020). The percentage of stay-at-home mothers has fluctuated over time: 29% from 2010 to 2012 compared to 26% in 2008 (Cohn et al., 2014). According to the population survey in 2019, 3.9% of married-couple families had one unemployed member. Out of all the married-couple families, 7.8% of the families are maintained by men and 7.6% are maintained by women (U.S. Bureau of Labor Statistics, 2020).

In 2019, 4.9 million of the 21 million married-couple families with children had a stay-at-home mother, which represents approximately 23% of married-couple families, a small downward shift from the previous decade (U.S. Census Bureau, 2019). In contrast, there were 191,000 stay-at-home fathers in 2019, an increase that bears out in the literature (Schoppe-Sullivan & Fagan, 2020; U.S. Census Bureau, 2019). Even though White non-Hispanic mothers constitute the majority of the stay-at-home mother population (60.4% of all stay-at-home mothers), stay-at-home mothers are prevalent within Hispanic married-couple households (26.7%) and within foreign-born married-couple households (34%) In addition, stay-at-home mothers were more likely to be younger, as 42% of all stay-at-home mothers are younger than 35 years (Cohn et al., 2014). MCH practitioners should pay attention to data that emerge from 2020 and 2021 as shifts in employment, along with the move to remote, online learning for children, in 2020 due to COVID-19 is having an impact on families in many ways.

Child Care

In 2016, almost 70% of the 24 million children younger than 5 years not yet enrolled in kindergarten were in some form of nonparental care on a regular basis. This includes childcare centers, relative care (grandparent, aunt/uncle, cousin), and nonrelative care. There are some differences by race and ethnicity in the percentages of children in some type of outside-the-home childcare, but the most

Table 3-2 Percentage of Children Ages 3–5, Not Yet Enrolled in Kindergarten with Employed Mothers, in Center-Based Care Arrangements by Child and Family Characteristics and Region

Characteristic	1995	2001	2005	2007	2012	2016
Total	60.9	62.4	62.7	64.2	66.8	69.6
Race and Hispanic origin^a						
White, non-Hispanic	61.7	63.2	63.5	67.9	71.5	74.8
Black, non-Hispanic	66.2	66.8	77.8	69.6	66.6	67.0
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡
Asian or Pacific Islander, non-Hispanic	57.2	69.7	74.7	74.5	72.0	63.6
Asian, non-Hispanic	—	—	75.2	75.4	75.0	65.3
Pacific Islander, non-Hispanic	—	—	‡	‡	‡	‡
Two or more races, non-Hispanic	62.3	67.0	55.1	56.7	60.4	65.0
Hispanic	45.0	51.7	48.2	48.0	56.2	62.4

Child Care: Percentage of Children Ages 3–5, Not Yet Enrolled in Kindergarten with Employed Mothers, in Center-Based Care Arrangements by Child and Family Characteristics and Region, Selected Years 1995–2016.

‡ Reporting standards not met. Either there are too few cases for a reliable estimate or the coefficient of variation (CV) is 50% or greater (<https://www.childstats.gov/americaschildren/tables/fam3b.asp>)

significant difference is by income (Redford et al., 2017). **Table 3-2** illustrates the percentage changes in children younger than 5 years in child-care from 1995 to 2016 by race and ethnicity.

The cost of childcare is significant and continues to grow. While somewhat dependent on the region of the country, for many families a significant percentage of their yearly earnings is needed to support childcare so they can work. The Child Care and Development Fund (CCDF) is a federal and state partnership program authorized under the Child Care and Development Block Grant Act and administered by states, territories, and tribes with funding and support from the Administration for Children and Families' Office of Child Care (U.S. Department of Health and Human Services, Administration for Children and Families, n.d.). States use CCDF to provide financial assistance to low-income families to access childcare so they can work or attend a job training or educational

program. Unfortunately, the demand for these resources far exceeds the support available. There is a pressing need for attention to the costs and quality of childcare (**Figure 3-8**).

Poverty as an Indicator of Health Outcomes in Families

The prevalence of poverty in the U.S. is an important health issue. In 2018, 38.1 million Americans lived in poverty (U.S. Census Bureau). If a family's total income is less than the established threshold, then that family and every individual in it is considered to be in poverty (U.S. Census Bureau). A poverty threshold is a specified dollar amount considered to be the minimum level of resources necessary to meet the basic needs of a family unit. In addition, the threshold is used to measure poverty status over time and used to compare statistics across geographic and

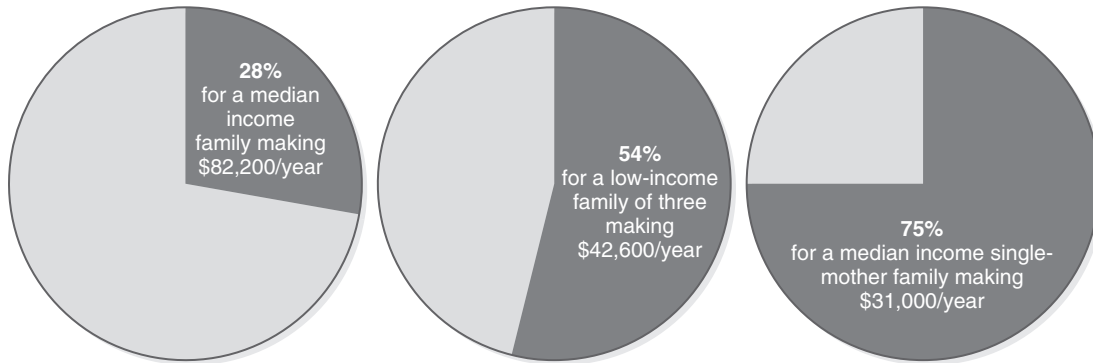


Figure 3-8 Median annual cost of center-based child care for a family with one infant and one preschooler as a percentage of income, Washington State (2017).

Reproduced from Child Care Aware of Washington, American Community Survey 2017 1-year Table S1903, U.S. Department of Health and Human Services. Retrieved from <https://budgetandpolicy.org/schmudget/the-sky-high-cost-of-child-care-rivals-tuition-and-rent/>

demographic groups (Lee, 2018). Poverty guidelines are simplified versions of the poverty threshold and are used to determine financial eligibility for many programs and benefits such as Medicaid. **Table 3-3** is an example of a poverty guideline, and **Table 3-4** illustrates a poverty threshold (Benson & Bishaw, 2019). Families who are poor clearly have less access to healthy food, safe housing, health care, educational enhancements, transportation, and opportunities for recreation and exercise. They also have increased stress, which is difficult for all members of a family.

What follows are percentages of qualifications for different health care subsidies:

- **138%** = Maximum income eligibility for Medicaid and CHIP in states that expanded Medicaid as part of the Affordable Care Act implementation (some states may vary)
- **100% to 250%** = Eligibility range for cost-sharing reduction subsidies on “Silver” plans bought on the Health Insurance Marketplace
- **100% to 400%** = Eligibility range for the ACA Premium Tax Credits on Health Insurance Marketplace plans

Table 3-3 2020 Federal Poverty Guidelines

2020	Federal Poverty Levels					2020
Size of Household	138%	150%	200%	250%	300%	400%
1	\$17,236	\$18,735	\$24,980	\$31,225	\$37,470	\$49,960
2	\$23,336	\$25,365	\$33,820	\$42,275	\$50,730	\$67,640
3	\$29,435	\$31,995	\$42,660	\$53,325	\$63,990	\$85,320
4	\$35,535	\$38,625	\$51,500	\$64,375	\$77,250	\$103,000
5	\$41,635	\$45,255	\$60,340	\$75,425	\$90,510	\$120,680
6	\$47,734	\$51,885	\$69,180	\$86,475	\$103,770	\$138,360
7	\$53,834	\$58,515	\$78,020	\$97,525	\$117,030	\$156,040
8	\$59,933	\$65,145	\$86,860	\$108,575	\$130,290	\$173,720

U.S. Department of Health and Human Services. (2020). HHS Poverty Guidelines for 2020.

Table 3-4 2017 Poverty Threshold

Size of Family Unit	Weighted Average Thresholds	Related Children Under 18 Years								
		None	One	Two	Three	Four	Five	Six	Seven	Eight or More
One person (unrelated individual):	13,011									
Under age 65	13,300	13,300								
Aged 65 and older	12,261	12,261								
Two people:	16,521									
Householder under age 65	17,196	17,120	17,622							
Householder aged 65 and older	15,468	15,453	17,555							
Three people	20,335	19,998	20,578	20,598						
Four people	26,172	26,370	26,801	25,926	26,017					
Five people	31,021	31,800	32,263	31,275	30,510	30,044				
Six people	35,129	36,576	36,721	35,965	35,239	34,161	33,522			
Seven people	40,016	42,085	42,348	41,442	40,811	39,635	38,262	36,757		
Eight people	44,461	47,069	47,485	46,630	45,881	44,818	43,470	42,066	41,709	
Nine people or more	52,875	56,621	56,895	56,139	55,503	54,460	53,025	51,727	51,406	49,426

U.S. Census Bureau, Poverty Thresholds for 2019 by Size of Family and Number of Related Children Under 18 Years.

Poverty has a negative impact on the well-being of families. Children and families are less likely to succeed if their most basic needs go unmet, and the long-term impacts will continue to keep families interacting with multiple systems. The child poverty rate is thus a key indicator of a society's health and well-being. It contributes to our understanding of whether our economy is working well, if it is distributing the nation's economic gains to its most vulnerable and dependent citizens, and if it is equipping the nation for the future by supporting the human capital formation of future workers (Chaudry & Wimer, 2016).

Nearly 1 in 6 children in the U.S. lived in poverty in 2018, making them the poorest age group in America. In addition, the youngest children are the poorest, and nearly 73% of poor children in America are children of color (Children's Defense Fund, 2020).

Poverty is an indicator in predicting educational outcomes of children. For example, poor children are more likely to attend lower-quality schools, have lower academic achievement, drop out of high school and later become unemployed, experience economic hardship, and be involved in the criminal justice system (Wagner et al.,

2009). In addition, enrollments in higher education among low-income high school graduates have decreased, which leads to lower earnings and income potential in adulthood because of their educational level (ACE, 2015). The economic cost of childhood poverty on society is significant. A study conducted at Washington University in St. Louis concluded that the annual aggregate cost of U.S. child poverty is \$1.0298 trillion, representing 5.4% of the gross domestic product. Furthermore, researchers estimated that, for every dollar spent on reducing childhood poverty, the country would save at least seven dollars with respect to the economic costs of poverty (McLaughlin & Rank, 2018). To measure the economic impact of child poverty, the researchers quantified the costs of lower economic productivity; higher health care costs; and costs associated with crime, homelessness, and child maltreatment.

Race, Ethnicity, Immigration, and Poverty

Many factors contribute to unequal access to resources, which in turn contributes to poverty (Singh et al., 2006; World Bank, 2016). The U.S. has the highest overall level of wealth inequality of any rich Organization for Economic Cooperation and Development nation at the beginning of the 21st century (Center for Poverty Research, 2017). The official poverty rate, as of 2019, was 10.5%, as estimated by U.S. Census Bureau. While the overall U.S. poverty rate has declined, racial and ethnic inequity in the distribution of wealth remains one of the country's biggest problems, with Black, Hispanic, and Native American people experiencing high rates of poverty compared to people who are Asian and White (Ruggles et al., 2015). The highest poverty by race is found among Native Americans (24%), with Blacks (18.8%) coming in second highest, and Hispanics (of any race) third (15.7%). In contrast, 7.3% and 9.1% of people who are Asian or White, respectively, lived in poverty. The sizes of these racial-ethnic gaps differ substantially by region, with

37% of Black women in the rural South living in poverty (Burton et al., 2017).

The U.S. refugee and immigrant population faces very high rates of poverty, major health problems, and much discrimination. In 2018, there were 26.9 million children younger than 18 living in low-income families (i.e., with family incomes below 200% of the federal poverty threshold), of whom 8.5 million (or 32%) were children of immigrants. People who are immigrants and do not have documentation are more likely to live in poverty because they often do not apply for government programs, such as Woman, Infants, and Children, because of fear of deportation. In addition, jobs that these families hold are less stable and more likely to pay minimum wage. Immigration status also impacts a community's ability to advocate for fair wages and safe working conditions.

In the U.S., people living in poverty tend to be clustered in certain regions, counties, and neighborhoods rather than being spread evenly across the country. For example, the poverty rate in 2019 in urban areas was 10%, compared to 13.3% in rural communities. Southern states had a higher poverty rate at 12% compared to the Northeast, who had the lowest at 9.4%. While the country's history of economically benefiting from the free labor of enslaved people is a legacy that continues to the present time, the rural South has a unique context. This legacy lives on in continued forms of racial exclusion and disadvantage. Impoverished rural minority communities serve as "dumping grounds" for urban America, which leads to disparate health outcomes. Chapter 12 on Environmental Health provides additional context (Burton et al., 2017).

Poverty and Its Effect on Family Well-Being

Poverty has a major effect on health outcomes, such as birth weight, infant mortality, language development, chronic illness, environmental exposure, nutrition, and injury (AAP, 2016). There is a link between child abuse and neglect and poverty. Factors such as substance abuse in a

poverty-stricken family make parents more vulnerable and more likely to be abusive and neglectful to the children (Houshyar, 2014). Children in poverty also experience food insecurity. For example, neighborhoods with many poor or low-income residents often have fewer resources that promote health, such as full-service grocery stores offering affordable and nutritious foods (Bell et al., 2013).

Structural Patriarchy and Racism

Patriarchy is the socially constructed system with male domination that has impacted families for centuries. The idea of male as the head of the household has elevated the status of men as the provider for the family. Before the 19th century, most families were structured around the traditional patriarchal system, with men owning the means of production and wives and children obliged to provide unpaid labor (Coontz, 2005). However, during the last century, the patriarchal system in families has collapsed. The waning patriarchal system has brought about drastic changes in the family composition followed by rise in single-parent households, recession in the dominance of married-couple households, and change in attitudes towards marriage. With incorporation of women in the workforce (Ruggles, 2015), the 20th century saw a sharp rise in female employment and increase in the wages of women, undermining the authority of men in the families. In addition, structural racism has restricted access to resources, such as health care, safe housing, education, and wealth, thereby impacting the family life of African Americans (Wallace et al., 2017).

The roles that patriarchy and racism have played with creating policies that influence family composition and function include public housing, incarceration, and immigration policies. At their inception, these policies were designed to assist women who were raising children without fathers, but have evolved to discourage marriage; this is especially pronounced among African Americans/Blacks. Compared to other racial groups,

African Americans are more likely to be charged with and be victims of a crime. African American/Black men between the ages of 15 and 44 are incarcerated in greater proportions. This reduces the pool of men to become educated, productive members of society and be active and present within a family unit.

Policies and Community Context That Impact Family Health

The Patient Protection and Affordable Care Act (ACA) was developed for the purpose of expanding access to health insurance for more than 27 million Americans who currently and historically experienced difficulties accessing quality acute and chronic care. For U.S. families, the impact of this law meant reduced stress about coverage of basic primary care and improved access to and utilization of services to address a host of costly services previously unaffordable to those in middle- and low-income populations. Those in poor families have particularly benefited from the ACA because of increased health care access; affordability; and use of preventive, outpatient, and inpatient services. It was well known that if those most in need had the opportunity to get their basic health needs met, this would allow them and those working with them to also address other root causes of outcomes influenced by other social determinants. At the time of this writing and despite numerous challenges, a little more than 20 million previously uninsured individuals now have coverage. The MCH community must continue to advocate for and actively challenge any and all threats to the diminishment or elimination of the ACA. The implications for children and families who most need it are of critical and historic importance. There are a variety of other federal government programs that have been put in place to help families. See Chapter 20 for more information about Medicaid.

WRAP-UP

Conclusion

The composition of the American family has continued to evolve during the past five decades. It is important for MCH professionals to understand the sociocultural changes, policies, and structural barriers that have impacted families in the U.S. over time and use this knowledge to plan for future generations. The acceleration of policies influencing foundational principles, values, and

the life course of those in our society has led to the social structures governing our legislative bodies and day-to-day lives of children and families. MCH professionals need to make sure that programs and policies are designed to support families in their kaleidoscope of compositions so that all children and families do not just survive, but thrive.

Discussion Questions

1. How has the definition of family changed over the past several decades? Why is that important to understand?
2. How have historic and structural racism and patriarchy impacted that health and well-being of families over time?
3. What role does income and poverty play in family health?
4. What are some key policies that influence family and child health?

Additional Resources

1. **Maternal Mental Health Leadership Alliance:**
www.mmhla.org
2. **Women's Bureau:**
www.dol.gov/agencies/wb
3. **Mom Congress:**
www.mom-congress.com/
4. **Children's Defense Fund:**
www.childrensdefense.org
5. **Administration for Children and Families:**
www.acf.hhs.gov/

References

- Addy, S., Englehardt, W. & Skinner, C. (2013). Basic facts about low-income children: Children under 6 years, 2011. National Center for Children in Poverty, Mailman School of Public Health, Columbia University. Retrieved January 18, 2021 from http://www.nccp.org/wp-content/uploads/2020/05/text_1074.pdf
- American Civil Liberties Union. (n.d.). *Family separation: By the numbers*. Retrieved July 3, 2020 from <https://www.aclu.org/issues/immigrants-rights/immigrants-rights-and-detention/family-separation>
- Anderson, L. (2019). States with High Opioid Prescribing Rates Have Higher Rates of Grandparents Responsible for Grandchildren. Retrieved February 12, 2021 from <https://www.census.gov/library/stories/2019/04/opioid-crisis-grandparents-raising-grandchildren.html>
- Benson, C., & Bishaw, A. (2019). Poverty: 2017 and 2018. *American Community Surveys Brief*. Washington, DC: United States Census Bureau Issued November 2019 ACSBR/18-02(RV)
- Bosley-Smith, E. R., & Reczek, C. (2018). Before and after "I do": Marriage processes for mid-life gay and lesbian

- married couples. *Journal of Homosexuality*, 65(14), 1985–2004.
- Burton, L., Mattingly, M., Pedroza, J., Welsh, W. (2019). *The state of the union 2017, Poverty*. Stanford Center for Poverty and Inequality, Stanford University Press. Retrieved January 18, 2021 from <https://inequality.stanford.edu/publications/pathway/state-union-2017>
- Charles, K. K., & Luoh, M. C. (2010). Male incarceration, the marriage market, and female outcomes. *The Review of Economics and Statistics*, 92(3), 614–627.
- Chaudry, A., & Wimer, C. (2016). Poverty is not just an indicator: The relationship between income, poverty and child well-being. *Academic Pediatrics*, 16, S23–S29.
- Children's Defense Fund. (2020). *New census data doesn't tell full story of the child poverty crisis in America: a Children's Defense Fund report*. Washington, DC: Author.
- Cohn, D., Livingston, G., & Wang, W. (2014). After decades of decline, a rise in stay-at-home mothers. *Pew Research Center*. Retrieved August 10, 2020 from <https://www.pewsocialtrends.org/2014/04/08/after-decades-of-decline-a-rise-in-stay-at-home-mothers/>
- Enchautegui, M. E., & Menjivar, C. (2015). Paradoxes of family immigration policy: separation, reorganization, and reunification of families under current immigration laws. *Law & Policy*, 37(1–2), 32–60.
- Federal Interagency Forum on Child and Family Statistics. (n.d.). Table FAM3.B. Child care: Percentage of children ages 3–5, not yet enrolled in kindergarten with employed mothers, in center-based care arrangements by child and family characteristics and region, selected years 1995–2016. Retrieved February 12, 2021 from <https://www.childstats.gov/americaschildren/tables/fam3b.asp>
- Goldin, C., & Mitchell, J. (2017). The new life cycle of women's employment: Disappearing humps, sagging middles, expanding tops. *Journal of Economic Perspectives*, 31(1), 161–182.
- Generations United. (2016). *The State of Grandfamilies 2016: Raising the children of the opioid epidemic: solutions and supports for grandfamilies.* Washington, DC: Author.
- Grall, T. S. (2020). *Custodial mothers and fathers and their child support: 2015*. Current Population Reports, P60–237. Washington, DC: U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau. Retrieved May 8, 2020 from <https://www.census.gov/library/publications/2018/demo/p60-262.html>
- Katz-Wise, S. L., Rosario, M., & Tsappis, M. (2016). Lesbian, gay, bisexual, and transgender youth and family acceptance. *Pediatric Clinics of North America*, 63(6), 1011–1025. <https://doi.org/10.1016/j.pcl.2016.07.005>
- Lundberg, S., Pollak, R. A., & Stearns, J. (2016). Family inequality: diverging patterns in marriage, cohabitation, and childbearing. *Journal of Economic Perspectives*, 39(2), 79–102. Retrieved July 24, 2020 from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4861075/>
- MacQuarrie, B. (2017, October 7). Young victims of opioid crisis pay high price. *Boston Globe*. Retrieved February 12, 2021 from <https://www.bostonglobe.com/metro/2017/10/07/children-are-lesser-known-victims-opioid-crisis/1D4lkN2kmEzeApqJlg3BPI/story.html?arc404=true>
- Pew Hispanic Center. (2010). *Statistical portrait of the foreign-born population in the United States, 2008*. (Tables 18 & 19). Retrieved October 13, 2010 from <http://pewhispanic.org/factsheets/factsheet.php?FactsheetID=59>
- Pew Research Center. (2015). *Parenting in America*. Retrieved August 10, 2020 from <https://www.pewsocialtrends.org/2015/12/17/parenting-in-america/>
- Population Reference Bureau. (n.d.). Median age at first marriage (women). Retrieved September 16, 2020 from <https://www.prb.org/usdata/indicator/marriage-age-women/snapshot/#:~:text=The%20median%20age%20at%20first,across%20states%20and%20local%20areas>
- Redford, J., Desrochers, D., & Hoyer, K. M. (2017). The years before school: Children's nonparental care arrangements from 2001 to 2012 (Statistics in Brief NCES 2017096). *U.S. Department of Education*. Retrieved September 24, 2020 from <https://nces.ed.gov/pubs/2017/2017096.pdf>
- Ruggles S. (2015). Patriarchy, power, and pay: The transformation of American families, 1800–2015. *Demography*, 52(6), 1797–1823. <https://doi.org/10.1007/s13524-015-0440-z>
- Ruggles, S., Genadek, K., Goeken, R., Grover, J., & Sobek, M. (2015). *Integrated public use microdata series: Version 6.0 [dataset]*. Minneapolis: University of Minnesota.
- Schneider, D., Harknett, K., & Stimpson, M. (2018). What explains the decline in first marriage in the United States? Evidence from the panel study of income dynamics, 1969 to 2013. *Journal of Marriage and Family*, 80(4), 791–811.
- Schoppe-Sullivan, S. J., & Fagan, J. (2020). The evolution of fathering research in the 21st century: Persistent challenges, new directions. *Journal of Marriage and Family*, 82(1), 175–197.
- Simha, S. (2019). The impact of family separation on immigrant and refugee families. *North Carolina Medical Journal*, 80(2), 95–96.
- Smith, K. (2018). *Parental substance use in New Hampshire: Who cares for the children?* Durham, NH: University of New Hampshire Carsey School of Public Policy.
- U.S. Bureau of Labor Statistics. (2020). *Table A-1. Employment status of the civilian population by sex and age*. Retrieved May 13, 2020 from <https://www.bls.gov/news.release/empsit.t01.htm>
- U.S. Census Bureau. (n.d.). 2016 American Community Survey 1-Year Estimates. Retrieved August 15, 2019 from <https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2016/1-year.html>
- U.S. Census Bureau. (2019a). *Table MS-2. Estimated Median Age at First Marriage, by Sex: 1890 to the Present*. Retrieved

80 Wrap-Up

- September 1, 2020 from <https://www.census.gov/data/tables/time-series/demo/families/marital.html>
- U.S. Census Bureau (2019b). *Table SHP-1. Parents and children in stay-at-home parent family groups: 1994 to present*. Retrieved September 1, 2020 from <https://www.census.gov/data/tables/time-series/demo/families/families.html>
- U.S. Census Bureau. (2019c). *United States – Selected social characteristics in the United States: 2009, Table ID DP02*. Washington, DC: U.S. Census Bureau.
- U.S. Department of Health and Human Services, Administration for Children & Families. (n.d.). What is the Child Care and Development Fund (CCDF)? Retrieved September 1, 2020 from <https://www.acf.hhs.gov/archive/occ/faq/what-is-the-child-care-and-development-fund-ccdf>
- U.S. Department of Labor, Women's Bureau. (n.d.). *Labor force participation rate by sex and parental status*. Retrieved May 8, 2020 from <https://www.dol.gov/agencies/wb/data/mothers-and-families>
- Wallace, M., Perry, J. C., Richardson, L., Tarver, M., & Theall, K. (2017). Separate and unequal: Structural racism and infant mortality in the U. S. *Health & Place*, 140–144.