1. Record Nr. UNINA9910811639203321

Titolo Water and sanitation-related diseases and the changing environment :

challenges, interventions, and preventive measures / / edited by Janine

M. H. Selendy

Pubbl/distr/stampa Hoboken, NJ:,: John Wiley & Sons, Inc.,, 2019

ISBN 1-119-41620-5

1-119-41618-3 1-119-41596-9

Edizione [Second edition.]

Descrizione fisica 1 online resource (361 pages)

Disciplina 333.91

Soggetti Water-supply

Water - Pollution

Water quality management

Water Supply

Water Pollution - prevention & control Disease Outbreaks - prevention & control

Sanitation

Water Microbiology Developing Countries Waterborne Diseases

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Nota di contenuto Intro -- Title Page -- Copyright Page -- Contents -- Foreword --

Preface -- Contributors -- Introduction -- Section I Water, Sanitation, and Hygiene: Meeting the Need -- Chapter 1 Toward Universal Access to Basic and Safely Managed Drinking Water: Remaining Challenges and New Opportunities in the Era of Sustainable Development Goals -- 1.1 Background -- 1.2 Past Efforts to Improve Access to Safe Water -- 1.3 Transition from the Millennium Development Goals to the Sustainable Development Goals -- 1.4 Impacts of Water Supply Interventions -- 1.5 Resource Requirements -- 1.6 Naturally Occurring and Anthropogenic

Water Pollution -- 1.7 Spatial and Social Inequities in Access

to Drinking Water -- 1.8 Sustainability -- 1.9 Final Remarks --References -- Chapter 2 The Human Right to Sanitation -- 2.1 Introduction -- 2.2 The Benefits of Sanitation -- 2.3 Sanitation Access and the Sanitation Ladder -- 2.4 Current Efforts to Improve Sanitation Outcomes -- 2.5 Conclusion -- References -- Chapter 3 Coping with Water Needs: The Demographic Future -- 3.1 Introduction -- 3.2 Personal Water Needs and Population -- 3.3 The Time Scale of Forecasts -- 3.4 The Current Situation and the Near Future to 2050 -- 3.5 The Future Situation to 2100 -- 3.6 The Future May Surprise Us -- 3.7 Probabilisitic Projections -- 3.8 High Fertility-Low Fertility --3.9 Economic Considerations -- 3.10 Unmet Need for Contraception --3.11 Implications for Policy -- References -- Chapter 4 Water, Food, and the Environment -- 4.1 Where Will the Water Come From? -- 4.2 The Depletion of Stored Fresh Water -- 4.3 Is Population a Problem? --4.4 Policy Considerations: Is Population a Solution? -- References --Chapter 5 Water and Armed Conflict -- 5.1 Availability and Accessibility of Water -- 5.2 Access to Water as a Basic Human Right -- 5.3 Conflicts Over Water. 5.4 Health Consequences of Violent Conflict -- 5.5 Preventing Armed Conflicts Over Water -- 5.6 Role of Women -- 5.7 "A Soft Path" -- 5.8 Conclusion -- References -- Chapter 6 Additional Measures to Prevent. Ameliorate, and Reduce Water Pollution and Related Water Diseases: Global Water Governance -- References -- Section II Water and Sanitation-Related Diseases -- Chapter 7 Infectious Diarrhea -- 7.1 Introduction -- 7.2 Epidemiology -- 7.3 Definition and Physiology --7.4 Manifestations of Infectious Diarrhea -- 7.5 Etiology of Infectious Diarrhea -- 7.6 Complications and Management -- 7.7 Prevention --7.8 Conclusion -- References -- Chapter 8 SoilTransmitted Helminths: Ascaris, Trichuris, and Hookworm Infections -- 8.1 Introduction -- 8.2 The Organisms -- 8.3 Epidemiology -- 8.4 Pathogenesis and Pathology -- 8.5 Clinical Manifestations -- 8.6 Diagnosis -- 8.7 Treatment -- 8.8 Control and Elimination -- 8.9 Vaccination -- 8.10 Conclusions --References -- Chapter 9 Food Systems and Nutrition in the Context of Climate Change -- 9.1 Introduction -- 9.2 Current Food and Nutrition Situation, and Trends -- 9.3 Climate Change and Climate Variability Related Impacts on Malnutrition -- 9.4 The Impacts of Food Systems on Climate Change -- 9.5 Ensuring Healthy Food Systems and Nutrition in a Changing Climate: Responding to the Challenges --9.6 Conclusions and Policy Recommendations -- References -- Chapter 10 Malaria in the Brazilian Amazon: New Understanding and Directions for Intervention -- 10.1 Introduction -- 10.2 Historical Perspective --10.3 Anopheles Vectors in the Amazon -- 10.4 Agricultural Settlement and Environmental Change -- 10.5 Frontier Malaria: An Example --10.6 Malaria Prevention and Mitigation: Recent Developments and Current/Future Challenges -- 10.7 Conclusions -- References --Chapter 11 Schistosomiasis -- 11.1 Introduction. 11.2 Schistosomiasis Transmission Cycle -- 11.3 Epidemiology -- 11.4 Pathogenesis -- 11.5 Clinical Manifestations -- 11.6 Diagnosis -- 11.7 Social Dynamics Influencing Schistosomiasis Transmission -- 11.8 Control -- 11.9 Conclusion -- References -- Chapter 12 Trachoma --12.1 Causative Organism and Natural History -- 12.2 Clinical Manifestations -- 12.3 Diagnosis -- 12.4 Epidemiology -- 12.5 Trachoma-Water and Sanitation -- 12.6 Prevention, Control, and Elimination -- 12.7 Surgery for Trichiasis - S -- 12.8 Antibiotics - A -- 12.9 F and E - Facial Cleanliness and Environmental Improvement -- 12.10 The Path Toward Elimination by 2020 -- 12.11 Conclusion -- References -- Section III Anthropogenic and Naturally

Occurring Pollutants -- Chapter 13 Impacts of Pharmaceuticals

Chapter 14 Other Water Pollutants: Antimicrobial Resistance -- 14.1 Introduction -- 14.2 Antimicrobials and Antibiotics -- 14.3 Antimicrobial Resistance (AMR) -- 14.4 AMR in the Environment --14.5 Wastewater Treatment -- 14.6 The Way Forward -- References --Chapter 15 Global Substitution of MercuryBased Medical Devices in the Health Sector -- 15.1 Introduction -- 15.2 The Problem: Mercury in the Environment -- 15.3 Mercury in Healthcare -- 15.4 Responses -- 15.5 Conclusion -- References -- Section IV Water Treatment and Safe Storage -- Chapter 16 Household Water Treatment and Safe Storage in LowIncome Countries -- 16.1 Introduction -- 16.2 HWTS Methods -- 16.3 Effectiveness and CostEffectiveness of HWTS to Prevent Diarrhea -- 16.4 Optimizing the Potential of HWTS: Achieving Targeted Coverage and Uptake at Scale -- 16.5 Scaling up Coverage among Target Populations -- 16.6 Impact of Climate Change -- 16.7 Conclusion -- Acknowledgment -- References --Section V Climate Change and Human Health. Chapter 17 Changing Geographic Distribution of Disease Vectors --17.1 Introduction -- 17.2 How Vectors Move -- 17.3 Summary --References -- Chapter 18 Reassessing MultipleIntervention Malaria Control Programs of the Past: Lessons for the Design of Contemporary Interventions -- 18.1 Introduction -- 18.2 Malaria: The Disease -- 18.3 Malaria Control -- 18.4 Malaria and Hydrology -- 18.5 Discussion --18.6 Conclusion -- References -- Chapter 19 Ecosystem Health as the Basis for Human Health -- 19.1 Introduction. The Context of Freshwater Ecosystems and Biodiversity -- 19.2 How Do Ecosystems Work? -- 19.3 The Roles, Importance, and Value of Ecosystems and Biodiversity -- 19.4 Ecosystem Services Support Human Existence -- 19.5 Human Uses of Freshwater Ecosystems -- 19.6 The Impacts of Degradation of Nature and Ecosystem Functioning on Human Health -- 19.7 Linking Human Wellbeing and Environmental Sustainability --19.8 Political Challenges in Achieving Sustainability -- 19.9 Summary - Future Challenges -- References -- Chapter 20 Addressing the Nexus of Water, Sanitation, Health, and Climate Change Through Multistakeholder Partnerships -- 20.1 Addressing the Nexus of Water, Sanitation, Health, and Climate Change through Multistakeholder Partnerships -- 20.2 Global Policy Goals and Targets on Water, Sanitation, Health, and Climate Change -- 20.3 Multistakeholder Partnerships for Water, Sanitation, Health, and Climate Change -- 20.4 Conclusions and Recommendations for Future Partnerships --References -- Section VI Success Stories -- Chapter 21 Extending the Right to Health Care and Improving Child Survival in Mexico -- 21.1 Child Survival in Mexico: The Diagonal Approach -- 21.2 The Mexican Health Reform -- 21.3 Meeting MDG 4 -- 21.4 Conclusions --References. Chapter 22 Dracunculiasis (Guinea Worm Disease): Case Study of the Effort to Eradicate Guinea Worm -- 22.1 Introduction -- 22.2 Implementing the Eradication Campaign -- 22.3 Impact and Final Challenges -- References -- Chapter 23 Sanitation Case Studies --23.1 Rural Sanitation in Thailand: Persistence and Creativity Pays Off --23.2 Singapore: Forward Thinking and Forward Moving -- References -- Chapter 24 Catalyzing Rural Sanitation at Scale: Lessons Learned

from The Global Sanitation Fund -- 24.1 Targeting Entire Administrative Areas -- 24.2 Igniting and Sustaining

Collective Behavior Change -- 24.3 Focusing on Equality and Non discrimination -- 24.4 Enhancing the "Enabling Environment" -- 24.5 New Frontiers for Sustainability -- 24.6 Slippage Is Only Human -- References -- Afterword -- Index -- Supplemental Images -- EULA.

and Personal Care Products in the Environment -- References --

Sommario/riassunto

"Meeting water and sanitation needs, coupled with protection of the environment and prevention of pollutants, is essential to every effort to improve the health and living conditions of billions of people. Meeting these needs is fundamental, not only to effectively diminish incidence of diseases that afflict a third or more of the people of the world, but also to improve education and economic well-being and elevate billions of individuals out of vicious cycles of poverty." These lines are from the Introduction to the First Edition of "Water and Sanitation Related Diseases and the Environment: Challenges, Interventions and Preventive Measures" written by Jens Aagaard- Hansen and Janine M.H. Selendy. The Second Edition will continue to address these goals in updated and revised chapters and new ones with an added emphasis on the current and anticipated impact of climate change. Preparatory measures and preventive measures and solutions will be presented providing guidance for possible action on the local, national and international levels. Consistent with the First Edition, this volume is being written by authorities from the fields of public health, medicine, epidemiology, environmental health, climate change, nutrition and malnutrition, environmental engineering, pharmacology, and population research to provide an interdisciplinary picture of conditions responsible for water and sanitation-related diseases and measures for prevention. Written taking into account the dynamic changes being brought about by climate changes, this book further examines the pathogens and their biology, morbidity and mortality resulting from lack of safe water and sanitation, changing distribution of these diseases, and the conditions that must be met to reduce or eradicate them. The scope of the volume will once again be international discussing anthropogenic and naturally occurring pollutants, pharmaceuticals, agricultural productivity, migration, nutrition, ecosystem dynamics, and the other areas addressed in the First Edition. The addition of Climate Change in the title is to emphasize that this vital subject will be addressed throughout the volume, including receiving special coverage in a chapter on climate change and human health, because of the importance of addressing current and anticipated changes due to climate change even more so than to the extent related concerns were raised in the First Edition thanks to added knowledge now available. Transformations now apparent and expected from climate change along with other dynamic changes in health and environmental influences throughout the world are part of the reality that has motivated authors from the First Edition and a new author, thus far, who are now writing eighteen chapters for the Second Edition. The realization of the widespread use of the current volume and its accompanying material has, naturally, been a major factor in encouraging their participation. It is imperative that discussion of water and sanitation- related diseases and interconnected environmental concerns be approached from a multi-factorial perspective. This involves discussion of water access and quality. sanitation and hygiene, specifics about the most prevalent diseases, and environmental factors, and guidelines and solutions. The First Edition begins to fill that niche in a format conducive to continuing discussion and graduate education, and that provides guidance with examples of successful preventive measures and interventions. The Second Edition will not only build on the substantial coverage of the First Edition, but also add new emphasis on climate change and the international nature of many of the diseases and pollutants discussed such as cryptosporidiosis, giardia, lead poisoning, harmful algal blooms, malnutrition and undernutrition, and soil- transmitted helminths (or worms). This will include coverage of the huge human migrations and the problems they face, the effects of population on the

depletion of fresh water, and urban situations. Efforts underway to meet the new Sustainable Development Goals, reduce open-defecation, and to address crumbing infrastructures in many parts of the world, are among the features of the revised content. Pollution from pharmaceuticals addressed in the First Edition will also cover antibiotic resistance which was covered in a separate chapter. Content will include updated chapters on the successful initiatives in Mexico "Extending the Right to Health Care and Improving Survival in Mexico" and on the eradication of Guinea worm, now down to less than 500 cases in the world. New coverage of successful sanitation and hygiene initiatives will feature the many successful installations and use of facilities underway thanks to the Water Supply and Sanitation Collaborative Council (WSSCC), and its Global Sanitation Fund"--Provided by publisher.