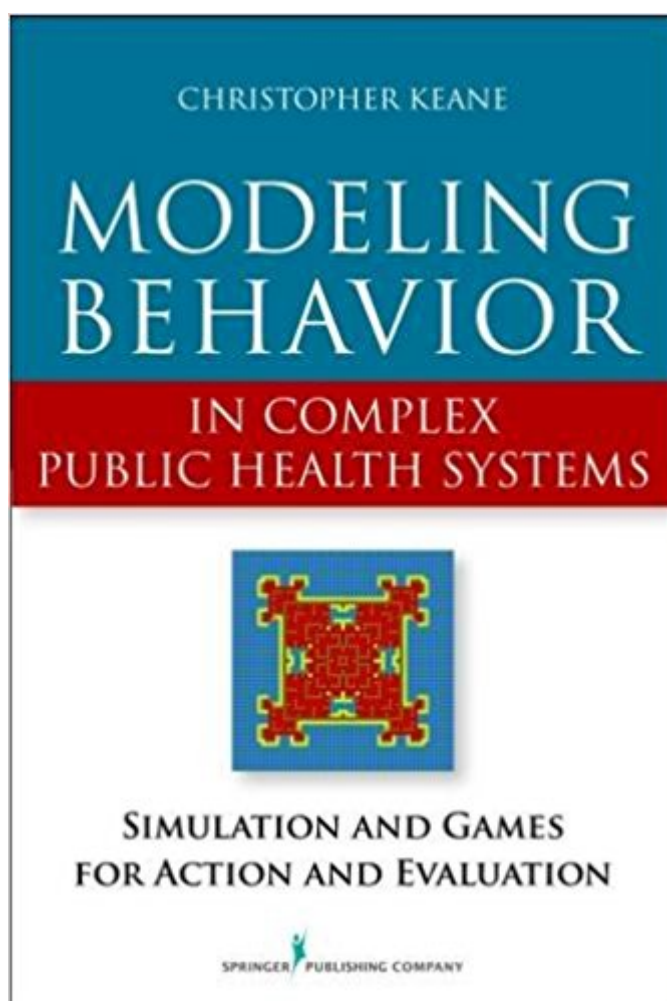


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Modeling Behavior In Complex Public Health Systems: Simulation And Games For Action And Evaluation



Synopsis

This graduate text is the first to present methods for modeling health behavior dynamics, using numerous online interactive simulations, downloadable programs, and examples of applications to planning interventions. The book examines behaviors that range from simple individual health protective actions to complex cooperative public health actions. It provides a user-friendly and effective method for teaching systems thinking, a core competency now required by the Association of Schools of Public Health. The text presents evolutionary and ecological models of health behavior, which readers first explore using interactive online simulations. The fundamental principles of these models are explained through the book's narrative and demonstrated through the use of simple board games. The text then shows how to translate these board games into computational models using Netlogo, a free, user-friendly software. Thus no computer programming background is required. Readers will learn the basics of agent-based modeling of individual behavior, social network behavior, organizational behavior, spread of disease, and a variety of public health interventions. Applying these methods to public health systems, sample models introduce the dynamics of networks of organizations and how they can interact to protect health. A unifying theme throughout is how complex individual and collective health behavior develop from simple individual health decisions or behavior repeated over time. The book also includes a student's models at successive stages of learning, including her early-stage incorrect program, which readers can themselves try to correct. Students will learn to create their own models, use them to conduct simulated experiments, and apply these methods to planning and evaluating behavior change interventions. Each chapter provides online interactive models and downloadable sample programs. Key Features: Uses interactive simulation for modeling health behavior dynamics for complex public health systems Demonstrates agent-based modeling of individual health behavior, network behavior, public health intervention effects, and the spread of disease Teaches readers to create models that can improve their local needs assessments, program logic modeling, and program planning and evaluation Includes numerous interactive online simulations, downloadable programs, and examples of applications to planning interventions Facilitates "systems thinking," a required core competency

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Christopher Keane, MPH, ScD, is Assistant Professor, Department of Behavioral and Community Health Sciences, University of Pittsburgh Graduate School of Public Health, USA. He has published in numerous prestigious peer-reviewed journals and several of his articles have been widely cited. Dr. Keane has served as PI on grants from the Agency for Healthcare Research and Quality, the CDC, Health Resources and Services Administration, and the Robert Wood Johnson Foundation. Many of his publications and grants focus on the public health system, including local health departments, public-private partnerships, and public health privatisation. Dr. Keane also has researched provision of services to the uninsured and children's health insurance, HIV prevention, global health, and geriatrics. He has designed many programme evaluations and community assessments, combining quantitative and qualitative methods and computational simulation of program effects. Dr. Keane has many years of experience conducting and teaching needs assessment, planning, evaluation and logic-modelling, and combining this with his expertise in computational modelling.

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