Discrete Event Simulation for Health Technology Assessment

J. Jaime Caro, Jouml;rgen Mouml;ller, Jonathan Karnon, James Stahl, Jack Ishak
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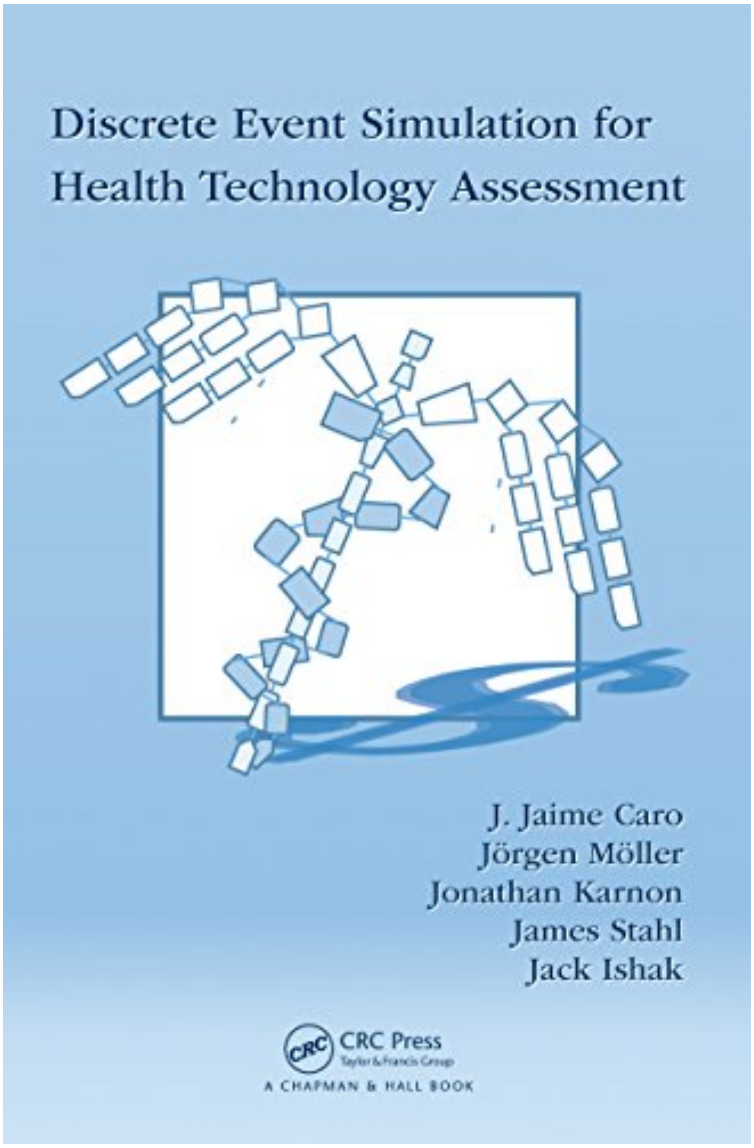

#1971996 in eBooks 2015-10-16 2015-10-16File Name: B017A30YPU | File size: 72.Mb

J. Jaime Caro, Jouml;rgen Mouml;ller, Jonathan Karnon, James Stahl, Jack Ishak : Discrete Event Simulation for Health Technology Assessment before purchasing it in order to gage whether or not it would be worth my time, and all praised Discrete Event Simulation for Health Technology Assessment:

Discover How to Apply DES to Problems Encountered in HTADiscrete event simulation (DES) has traditionally been used in the engineering and operations research fields. The use of DES to inform decisions about health technologies

is still in its infancy. Written by specialists at the forefront of this area, Discrete Event Simulation for Health Technology Assessment is the first book to make all the central concepts of DES relevant for health technology assessment (HTA). Accessible to beginners, the book requires no prerequisites and describes the concepts with as little jargon as possible.The book first covers the essential concepts and their implementation. It next provides a fully worked out example using both a widely available spreadsheet program (Microsoft Excel) and a popular specialized simulation package (Arena). It then presents approaches to analyze the simulations, including the treatment of uncertainty; tackles the development of the required equations; explains the techniques to verify that the models are as efficient as possible; and explores the indispensable topic of validation. The book also covers a variety of non-essential yet handy topics, such as the animation of a simulation and extensions of DES, and incorporates a real case study involving screening strategies for breast cancer surveillance.This book guides you in leveraging DES in your assessments of health technologies. After reading the chapters in sequence, you will be able to construct a realistic model designed to help in the assessment of a new health technology.

About the AuthorJ. Jaime Caro, MDCM, FRCPC, FACP, is an adjunct professor of medicine as well as epidemiology and biostatistics at McGill University. He also teaches discrete event simulation (DES) at Thomas Jefferson University School of Population Health and is chief scientist at Evidera. He founded the Caro Research Institute, chaired the Modeling Task Force jointly sponsored by the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) and the Society for Medical Decision Making (SMDM), chaired the Expert Panel guiding the German government on methods for health technology assessment (HTA), and helped the World Bank Institute address the growing problem of supreme courts overriding health care system decisions. Jouml;rgen Mouml;ller, MSc Mech Eng, is an associate researcher in the Division of Health Economics, Faculty of Medicine at Lund University and vice president of modeling technology at Evidera. He is an expert in health care and logistics management decision modeling using advanced techniques. His work focuses on translating methods from operations research to pharmacoeconomics, developing guidelines for this type of modeling, and conducting advanced courses in DES and Arena software. Jonathan Karnon, PhD, is a professor in health economics at the University of Adelaide. He wrote one of the few papers that directly compared cohort state transition models and DES techniques for HTA, built a range of DES HTA models for the evaluation of alternative screening strategies, and co-chaired the ISPOR/SMDM modeling good research practices taskforce working group on the use of DES for HTA. James E. Stahl, MDCM, MPH, is an associate professor of medicine in the Geisel School of Medicine at Dartmouth College, Section Chief of General Internal Medicine at Dartmouth-Hitchcock Medical Center, the director of systems engineering for the Point of Care Testing Research Network at the Center for Integration of Medicine and Innovative Technology, senior scientist at the MGH Institute for Technology Assessment, and adjunct professor in mechanical and industrial engineering at Northeastern University. His work focuses on health care delivery, process redesign, the development and evaluation of innovation in health care, and improvement in patient experience. K. Jack Ishak, PhD, is executive director of biostatistics and senior research scientist at Evidera. Dr. Ishak specializes in statistical methods for health economics, pharmaco-epidemiology, and observational research. His current methodological work focuses on study designs for comparative effectiveness research (such as pragmatic and Bayesian adaptive trial designs), methods for adjusting for bias due to crossover in oncology trials, and simulation-based techniques for treatment comparisons (including trial simulation).