HEALTH RESOURCE ALLOCATION: LESSONS FOR TODAY FROM PAST OUTBREAKS

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ABSTRACT

Recent events have brought mathematical modelling of infectious disease transmission and control to the forefront. An appropriate choice of mathematical model depends of course on the decision problem to be informed, yet there can be uncertainties about technical, social, and operational parameters of a model. And each model necessarily makes assumptions, for better or for worse. In this talk, we discuss different types of models for supporting decisions for cost-effective disease management decisions, touching on stochastic models, Bayesian methods, and simulation optimization. We then illustrate some obvious and some not-so-obvious ways that the choice of model is important, by drawing upon examples from the presenter's experience with projects to address influenza, vaccination, waterborne infections, Creutzfeldt-Jakob Disease and clinical trial design. We highlight the importance of problem selection and collaboration.

AUTHOR BIOGRAPHY

STEVE CHICK is a Professor of Technology and Operations Management at INSEAD – Europe Campus. He holds the Novartis Chair of Healthcare Management and is academic director of INSEAD's Healthcare Management Initiative. His academic research has focused on stochastic processes, Bayesian modelling for learning and uncertainty assessment, and healthcare modelling, particularly as it relates to epidemic modelling or to highly adaptive clinical trials. His research collaborations in healthcare modelling have been funded by the CDC, EPA, NIH, EU and the UK NIHR, and four of his papers have been finalist or winner of the Pierskalla Best Paper Award for INFORMS Healthcare. In executive teaching he has worked with numerous pharmaceutical companies and health care delivery organizations to support innovative and effective models for delivery health care.