

Biological Agents Index

Risk Management Strategies for Infectious Disease Surge



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Risk Management Strategies for Infectious Disease Surge

Achieving cost-effective outcomes using macroeconomics and microbiology, in addition to new public management concepts for implementation and evaluation of best practices in community based sanitation, health promotion, large scale antibiotics and vaccines manufacturing, and laboratory analytical platforms

FOURTH EDITION

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To all that have lost loved ones

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PREFACE

Until now, this millennia has seen major and meteoric advances in socioeconomic and biological sciences like, but not limited to, concepts in Game Theory; Organizational Theories like Transformation, and Computational Biology. Achievements of the Human Genome Project have radically improved the way research in medicine is approached. For one thing software and algorithms have significantly improved research processes, and reduced time needed for large drug development. For this reason, there is no longer an excuse for the limited availability of affordable therapeutics for major most diseases. Advances in Bioinformatics have also resulted in reduction of costs needed to produce life saving miracle therapeutics or 'biologics' needed for the treatment or management of cancer and other chronic diseases.

In addition, there have been numerous discoveries that have brought increases in the understanding and links between the emergence of new and old cases of infectious disease (incidence and prevalence), economic development, and the democracy. Interestingly, links have been drawn between conflict, famine, and infectious disease. What is known is that democracy systems reduce risks of conflict, increase economic development, and reduce prevalence to infectious disease. Collectively, Information Technology (IT) has emerged to become a powerful intervention tool in medicine. Consequently, infectious disease intervention programs should contain both socioeconomic and biomedical inputs and outputs in order to achieve effective outcomes.

Accordingly, to effectively manage infectious disease intervention programs, managers should be familiar with concepts in macroeconomics, microbiology, and new public management. For the most part, origins of modern socioeconomic and biology concepts date as far back as the 1950s, '60s, and '70s. The global economic recession; and increasing globalization have ably assisted in shaping the way global interventions against highly infectious disease are cost effectively planned and managed. There have been numerous lessons learned. For one thing, it is more cost effective and cost beneficial to replace labor with technology (new public management). Secondly, and consequently, highly effective governments tend to outsource social and public programs and play a greater role in regulation and oversight.

Subsequently, the private sector (corporations and non-profit organizations) are increasingly participating in program implementation. *Biological Agents Index* (Fourth Edition) has been adapted from previous editions to focus more on providing risk management strategies to performers managing or implementing infectious disease surge interventions. This edition has been written for performers in government agencies, public, non-profit, and private sectors and for students of management. *Biological Agents Index* stresses the need for increased reliance on information technologies for cost-effective management and discusses best practices of using bioinformatics in implementing, assessing, evaluating socioeconomic and biomedical technology programs, specifically pharmaceutical, public health, and clinical laboratory diagnostics platforms. Like *Lean Six Sigma*, the Index can be used to identify constraint within infectious disease intervention processes. This information can be used to reduce threats to validity and variation when implementing specific programs. If correctly used, the index can ably assist the user in the implementation of leaner processes, and in conducting more accurate program evaluations.

During the preparation of this edition, previous and current authors and works have been cited at the end of each part. In addition, other contributors have been documented in the acknowledgement section. This edition has been written to provide the user basic skills needed to be effective in the evaluation of socioeconomic and or biomedical technology intervention programs against infectious disease in urban and rural communities. In addition, this edition can supplement the user's education and experience in infectious disease healthcare management or serve as a handbook for future reference. To achieve these goals, this edition has been arranged into three parts with five chapters. The first part discusses basic concepts in macroeconomics, new public management, and microbiology. In addition, the chapters in Part One outline basic management concepts in strategic planning and attempts to demystify microbiology and its components: bacteriology, virology, biotechnology, immunology, and bioinformatics. Furthermore, suggestions are made on how concepts in Part One can be used as tools in the implementation, analysis, and evaluation associated with strategic planning concepts like inputs, outputs, and outcomes, and program assessments and analysis. Part Two of this book offers suggestions on the best way to approach managing best practices in the area of infectious diseases infection control and health promotion programs using administrative processes like outreach, rural economic development, sanitation, and laboratory quality management.

Finally, Part Three delivers series of realistic synopses and case studies that places the reader in realistic management crisis situations. This book is currently being reviewed for a fifth edition. Readers with suggestions for improvement and interested scholarly contributors can submit book chapter inputs or paper publications to: info@biologicalagents.com.

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