

# Preface

In *The War on Cancer: An Anatomy of Failure, A Blueprint for the Future* [1], I documented the stagnation of advanced cancer treatment after several decades of clinical trials shaped by changing theories on the origin and progression of cancer but always using drugs that, in addition to being cancer nonspecific, exhibit a plateau for efficacy but not for side effects. This indicting conclusion was based on detailed analyses of treatment outcome benchmarks that included cure rates, 5-year survival rates, and quality of life as recorded through 2004. An analysis of the root causes of the stagnation, which is implied in *An Anatomy of Failure*, the book's first subtitle, was followed by a *Blueprint for the Future* proposal that called for a fundamental paradigm shift in cancer management based on a trifold approach: "prevention, early diagnosis, and, when these fail, on controlling the aberrant molecular genetic pathways underlying the development, growth, and dissemination of cancer" [2].

The current book revisits the status and outcome of cancer management 10 years later. The chapter on theories on the origin and treatment of cancer through the ages has been greatly expanded. Likewise, coverage of molecular biology, genetics, and epigenetics of cancer was brought up to date, and sections on the role of carcinogens in cancer development and incidence and of alternate methods to combat cancer were included. I now show that, despite momentous progress in our understanding of the origin, progression, and dissemination of cancer, translational applications of this knowledge to the clinical setting have been slow, with little impact on any of the outcome benchmarks of cancer treatment. The impact of the increasing commercialization of medicine on the quality and cost of cancer care is highlighted by the growing trend of placing profit ahead of patients' needs, where providers and suppliers drive demand often unrelated to patient needs and where the extremely high cost of new agents is rarely matched by commensurate outcomes fostering a supply-driven industry, the largest in the country and a major contributor to budget deficits [3].

Cancer incidence rates rose by 16 % overall between 1975 and 2009, while death rates declined by 15 % and 5-year survival improved by 19 % between 1975 and 2008. However, because the modest gains in the latter two outcomes are attributable mostly to smoking cessation, early-stage diagnosis, and improvements in medical

support measures rather than efficacious treatment, I propose a radical paradigm shift in cancer control. It calls for a break with the past at all levels of the cancer “enterprise.” The new paradigm would entail a three-pronged approach: national cancer prevention campaigns initially aimed at cancer-promoting lifestyles responsible for two-third of new cancers and one-third of cancer deaths in the USA pursued concomitantly with coordinated national efforts, akin to the Manhattan project and the Apollo program, involving thousands of scientists in cancer-related fields focused on designing efficient tools for detecting surgically curable early-stage disease and on developing cancer-specific therapies capable of controlling advanced cancer. In the meantime, patients with advanced cancer would be offered the best available management while abiding by the four cardinal principles of ethical medical care: ensuring beneficence, reducing maleficence, and respecting patients’ autonomy to remain in control of their own destiny while observing the principle of justice that seeks an equitable distribution of limited health-care resources.

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The Conquest of Cancer

A distant goal

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