

PATIENT-CENTRIC CARE

A Second Edition Adds New Value to Personalized Medicine

by
**RONALD
PIANA**

→ Since the publication of the first draft of the human genome, genotyping and genomics have been integrated into standard clinical care for select cancers. But as precision medicine in oncology develops to comprise big data, proteomics, transcriptomics, molecular imaging, and more, there are numerous challenges ahead to translate that archetype into meaningful and equitable health care for patients. To do so, we need to aggregate what we know, or a good deal at least, about the current and unfolding state of personalized medicine. In the *Second Edition of Advancing Healthcare Through Personalized Medicine*, **Priya Hays, PhD**, attempts to do just that.

Dr. Priya is an accomplished science writer with two other noted books under her belt and more than 15 publications in leading medical journals. In recognition of her accomplishments, Dr. Priya is an elected member of ASCO, the American College of Medical Genetics and Genomics, and the Society for Immunotherapy of Cancer.

Data Packaged in Big Ideas

THIS IS A BIG BOOK, at more than 700 pages, organized into 13 chapters with an excellent conclusion. The author makes her target audience clear: physicians and physician/scientists; scientists invested in personalized medicine research also constitute a primary audience.

“Medicine has come a long way from the days of Hippocrates, and the journey to better patient care is always imminent.”

—PRIYA HAYS, PhD

The author leads off with an introduction that sets the table with the historical backdrop of five targeted therapies, most notable among them, the chronic myeloid leukemia therapy imatinib, which, as noted, had one of the shortest U.S. Food and Drug Administration (FDA) approval cycles in history. Dr. Hays writes: “Each [drug] highlights certain aspects of personalized medicine and positive lessons learned: the discovery of driver mutations that drugs could target, rapidly facilitated clinical trials that lessen FDA approval time for breakthrough drugs, and co-development of drugs and companion diagnostics that lead to effective predictive treatment for patients, and the secondary benefit of additional scientific and clinical research toward the

discovery of molecularly targeted treatments.”

Despite the unavoidable dryness of the subject matter, the well-crafted “stories” of five practice-changing therapies gives readers a clue as to why doggedly pursuing the personalized course laid out in this book has the potential to markedly increase overall survival outcomes for patients with cancer, lower health-care costs, help to repair our overburdened delivery system, and develop cutting-edge options for disease prevention by early detection and risk prediction models. Theories in health care are often attractive but fleeting. However, Dr. Priya grinds fanciful objectives such as liquid biopsy into a reality that her audience will embrace. She backs up each postulate with data and science that are both pleasingly dense and accessible at the same time. But the author never lets readers lose sight of the main objective of personalized medicine—the patient with cancer. To that end, she also addresses concerns such as “informed consent, confidentiality breaches in data storage, the appropriate use and interpretation of genetic data, and genetic discrimination on [clinical trial] subject selection based on race or ethnicity.”

Patients Take Center Stage

CHAPTER 2 elucidates the marvel of genomics and personalized medicine, outlining how the grand scheme that The Human Genome Project unveiled, in all its dizzying admixture of science and politics, paved the way for personalized medicine. The following chapter uses interesting patient narratives and is perfectly positioned to set up a deep dive into the science behind it all: “a knowledge network of disease that would include molecular data encompassing individuals’ genomes, transcriptomes, epigenomes, proteomes, microbiomes, metabolomes, and exposomes, incorporated with traditional taxonomies based on signs and symptoms.”

For readers of *The ASCO Post*, chapters 5 and 6 will be worth the wait. Dr. Hays focuses on the clinical power of harnessing already-vetted data for determin-

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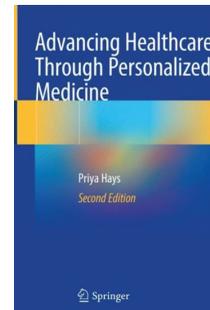
Title: *Advancing Healthcare Through Personalized Medicine*

Author: Priya Hays, PhD

Publisher: Springer

Publication Date: September 2021 (Second Edition)

Price: \$165.99, hardcover, 745 pages



ing health outcomes with the newer targeted therapies and immunotherapies. Big data, artificial intelligence, and digital pathology—tools that may seem out of reach to busy community clinicians—are tamed and demystified. On a more plebian level, the power of a fully integrated electronic health record system is explicated and should be excised into a pamphlet for sluggish health-care wonks and policymakers.

Sobering Facts and a Way Forward

THE DEPTH of technical information and the well-spring of novel advances carefully woven into a personalized medicine matrix are admirable. There are a few times when complexity might obscure the end point of certain therapeutic strategies, but those rare instances make for a small gripe given the scope and value of the book.

Chapters 12 and 13 are standouts, setting this book apart from others in the field. Here, Dr. Hays gives a frank dissection of health economics and the attended moral and ethical issues faced with the emerging trends in medicine. Chapter 12 begins with some sobering facts about our untenable spending and waste, bringing her insight into how personalized medicine can become a value-based set of tools and concepts to shave costs and improve outcomes. Big Pharma can become a partner in this effort, willingly. The author deftly uses a case study of trastuzumab as a reason for a positive outlook for our system’s future.

Throughout *Advancing Healthcare Through Personalized Medicine*, figures, charts, and tables are skillfully executed and placed, giving readers visual accents to the text. This is a top-notch operation, from cover to cover. “Medicine has come a long way from the days of Hippocrates, and the journey to better patient care is always imminent,” Dr. Hays concludes. She should be proud to have helped pave the road on that journey to better patient care with her outstanding book, which is highly recommended for readers of *The ASCO Post*. ■