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Autore	Ogwu Matthew Chidozie
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Sommario/riassunto

Tropical diseases continue to impose a significant burden on global health, particularly in low- and middle-income regions. These diseases challenge healthcare systems, exacerbate economic disparities, and threaten global public health. In this rapidly evolving landscape, integrating advanced technologies offers unprecedented opportunities to transform the prevention, diagnosis, monitoring, and treatment of tropical diseases. This groundbreaking volume explores biosensor advancements, wearable technologies, artificial intelligence, predictive modeling, mobile health, and biotechnological innovations. Each chapter delves into how these cutting-edge solutions address the unique challenges of tropical diseases, from improving diagnostics and disease surveillance to enabling equitable access to care in resource-limited settings. The book also examines the ethical, technical, and economic barriers to implementation, providing actionable strategies to overcome these challenges. Key features include: In-depth analysis of innovative diagnostic tools, including biosensors and IoT-enabled wearables. Insights into AI and machine learning applications for outbreak prediction and resource allocation. Case studies of mobile health, telemedicine, and robotics in tropical disease management. Exploration of biotechnological and therapeutic advances tailored to tropical diseases. Critical analysis of ethical considerations, data security, and equitable technology access. A forward-looking perspective on emerging trends and their alignment with global health goals. Aligned with the United Nations Sustainable Development Goals (SDGs), this book emphasizes the role of technology in achieving SDG 3 (Good Health and Well-being) and SDG 9 (Industry, Innovation, and Infrastructure). It is an indispensable resource for public health professionals, researchers, policymakers, bioengineers, healthcare technologists, and academics seeking to address the complexities of tropical diseases with innovative, sustainable solutions. This is a transformative guide to leveraging technology for a healthier, more resilient world.