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Nota di contenuto	Current Massively Parallel Sequencing Technologies: Platforms and Reporting Considerations -- Emerging Next Generation Sequencing Technologies -- Transcriptome Sequencing (RNA-Seq) -- miRNA Expression Assays -- Circulating Tumor Cells: Enrichment and Genomic Applications -- Circulating Cell-free DNA for Molecular Diagnostics and Therapeutic Monitoring -- Genomic Pathology: Training for New Technology -- Implementation of Genomic Sequencing Assays -- Regulatory and Reimbursement Issues in Genomic Testing -- Patents and Proprietary Assays -- Ethical Issues in Clinical Genetics and Genomics -- Transitioning Discoveries from Cancer Genomics Research Laboratories into Pathology Practice -- Bioinformatics Tools in Clinical Genomics -- Next Generation Sequencing for Single Gene Analysis -- Next Generation Sequencing for Gene Panels -- Implementation of

Exome Sequencing Assays -- Implementation of Genome Sequencing Assays -- Clinical Information Systems in the Era of Personalized Medicine -- Reporting Clinical Genomic Assay Results and the Role of the Pathologist -- Genomic Applications in Hematologic Oncology -- Genomic Applications in Brain Tumors -- Genomic Applications in Head and Neck Cancers -- Genomic Applications in Breast Carcinoma -- Genomic Applications in Pulmonary Malignancies -- Genomic Applications in Colorectal and Pancreatic Tumors -- Molecular Pathology of Genitourinary Cancers: Translating the Cancer Genome to the Clinic -- Genomic Applications in Gynecologic Malignancies -- Genomic Applications in Epithelial Ovarian Malignancies -- Genomic Applications in Soft Tissue Sarcomas -- Genomic Applications in Inherited Genetic Disorders -- Genomic Applications in Pharmacogenomics -- Sequencing Cell Free DNA in the Maternal Circulation to Screen for Down Syndrome and Other Common Aneuploidies -- Genomic Applications in the Clinical Management of Infectious Diseases. .

Sommario/riassunto

Genomic Applications in Pathology provides a state-of-the art review of the scientific principles underlying next generation genomic technologies and the required bioinformatics approaches to analyses of the daunting amount of data generated by current and emerging genomic technologies. Implementation roadmaps for various clinical assays such as single gene, gene panels, whole exome and whole genome assays are discussed together with issues related to reporting, including the pathologist’s role in interpretation and clinical integration of genomic tests results. Genomic applications for site-specific solid tumors and hematologic neoplasms are detailed, as well as genomic applications in pharmacogenomics, inherited genetic diseases, and infectious diseases. The latest iteration of practice recommendations and guidelines in genomic testing, put forth by stakeholder professional organizations such as the Association for Molecular Pathology and the College of American Pathologists, are also discussed in the volume, as well as regulatory issues and laboratory accreditation related to genomic testing. Written by experts in the field, Genomic Applications in Pathology provides a comprehensive resource that is of great value to practicing molecular pathologists, hematopathologists, other subspecialized pathologists, general pathologists, pathology trainees, oncologists, and geneticists.