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New generation health care delivery using clinical genomics

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In the past decade, we have overcome the grand challenge of being able to sequence a human genome for \$1000 within a week. This has tremendous implications how health care is delivered to patients. It still takes about 7 years on an average to diagnose a rare disease in USA and the European Union. This is because of the large number of rare diseases (>7000), lack of genetic education among physicians and the lack of awareness among the general public. About 80% of these rare diseases are estimated to be caused by inherited mutations and many of them are treatable. There is a huge opportunity to improve our speed and accuracy of diagnosing rare diseases world-wide. For cancer care, it is critical to accurately classify the tumor at the molecular level and enable the oncologists to make the right clinical decisions through data integration, curation, mining and reporting by applying next-generation sequencing (NGS) technologies. The opportunity is real and applies to almost all human diseases – rare and common. Using real-world examples and use cases, it will be presented, how recent advances in clinical genomics are enabling a new generation of diagnostic tests for clinical decision support. A comprehensive clinical genomics workflow and models for implementation at community hospitals will be discussed. Together, clinical genomics is revolutionizing, how health care is practiced and delivered across the world.

Biography

Harsha K Rajasimha is Senior Director of Clinical Genomics Services at Strand Genomics Inc., a new generation healthcare company and a global leader in clinical genomics. He is affiliate faculty in systems biology at the George Mason University and serves as founder member of the Organization for Rare Diseases India. His career has spanned across sectors such as academia, non-profits, Government, Information Technology, and Biotechnology in highly interdisciplinary multinational environments. He is passionate about applying genomics to personalizing healthcare and increasing global food production. He holds a Master's degree in computer science and doctoral degree in Genetics, Bioinformatics and Computational Biology.

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