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New generation health care delivery through smart labs capable of offering next-generation sequencing based multi-gene panels

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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 is already having tremendous implications on how health care is delivered to patients. 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. 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. Using real-world examples and use cases, I will present how recent advances in clinical genomics are enabling a new generation of diagnostic tests for clinical decision support. A comprehensive clinical genomics workflow and the Strand Smart Lab model for delivering personalized medicine tests at community hospitals will be discussed.

Biography

Harsha K Rajasimha is Vice President of Global Business Development at Strand Genomics Inc., a new generation healthcare company and a global leader in personalized medicine. He is affiliate faculty in systems biology at the George Mason University and is a co-founder of the Organization for Rare Diseases India. His career has spanned 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 masters degree in computer science and doctoral degree in Genetics, Bioinformatics and Computational Biology from Virginia Tech, USA.

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