

Genomics is disrupting the healthcare sector

May 4 2018

Affordable, rapid DNA sequencing is causing a revolution in medicine and healthcare globally—and it's happening now, says Thomas Barlow (Barlow Advisory), the author of the landmark Garvan Global Genomics Report, which launches today.

The independent [report](#) shows that genomics is already driving a remarkable paradigm shift in health practices and outcomes. In the last 15 years, the cost of reading an individual's DNA sequence—their [genome](#)—has plummeted from hundreds of millions of dollars to around the cost of a shoulder MRI. This is ushering in a new era of precision healthcare, in which treatments, prevention strategies and health advice will reach the right person at the right time.

Applications of genomics in cancer, rare disease and reproductive services are booming, the report finds, with other clinical areas set to follow suit. The report shows that over 250 FDA-approved drugs are now labelled for prescribing based on the patient's genetics—a number that has tripled since 2014. In addition, joint ventures, mergers and R&D agreements relating to genomic technologies have grown exponentially in the past decade.

The report is designed to help businesses and organisations to grapple with the clinical and commercial changes that genomic technologies are bringing about. A comprehensive resource, the report draws on patents, scientific publications, and clinical trials data to map out the emerging medical and consumer health applications of genomics. Organisations that purchase the report will gain unique insights, perspectives and data

that will help place them at the forefront of this rapidly unfolding revolution in healthcare.

"Genomics is changing healthcare—now and for future generations. We're no longer merely forecasting change: instead, we're watching it happen," says Dr. Barlow.

"What's remarkable are the diverse ways in which genomics is making change—many of which are not obvious without close analysis. Genomics is bringing research and the clinic into much closer connection; it's shifting the emphasis onto prevention rather than late treatment; it's blurring the distinction between health and consumer services," he adds.

"And at the coalface, in medical practices of all kinds, we will see an expanded role for data analytics—which are key to making sense of the vast information sets that genomics brings."

Dr. Barlow says that attention has focused on firms developing sequencing technologies—but the report shows how an increasingly diverse ensemble of firms is now applying these technologies in medical and health contexts.

The report shows that practical biomedical applications for genomics have stimulated the formation of hundreds of new companies globally—particularly in the US. It surveys the diverse business models being used to transform fundamental discoveries into commercial products. It also ranks leading research organizations involved in genomic discovery and quantifies their R&D relationships with industry.

Authored by Dr. Barlow, a leading thinker on technology trends and research strategy, the report is an independent and objective assessment of global trends in the uptake of genomics within health and medical

contexts. It was developed in conjunction with the Garvan Institute of Medical Research, a global leader in using [genomic analysis](#) to accelerate biomedical discovery and to develop precision and personalised medicine.

Professor John Mattick, Executive Director of Garvan and soon-to-be Chief Executive Officer of Genomics England, who conceived the report with Dr. Barlow, says that it has been valuable to have an independent expert assemble hard data to confirm the strategic significance of genomics.

"Medicine is on the cusp of a major transition—from crisis response to health management—although not everybody understands its scale or potential yet," Professor Mattick says.

"This report will accelerate appreciation of the rapid development and applications of genomic analysis that are underway. The data are breathtaking. The immense potential of genomics to transform medical research and healthcare is now being realised, and it's exciting to see the impacts flowing through into the clinic."

Provided by Garvan Institute of Medical Research

Citation: Genomics is disrupting the healthcare sector (2018, May 4) retrieved 10 April 2024 from <https://medicalxpress.com/news/2018-05-genomics-disrupting-healthcare-sector.html>

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