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Top Target Treatments

Precision health and population health: can they intersect effectively?

How and where can precision medicine and public health join forces to improve patient care and outcomes and, ultimately, lead to more efficient healthcare. HealthManagement.org spoke to four precision medicine experts for their views.

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We are facing a revolution in cardiovascular medicine. Big data, from wearables, social media, omics, gene analyses etc. cannot be analysed, using standard techniques, which makes the data more or less useless. Using artificial intelligence has the potential to make a significant impact in cardiovascular medicine. Initiatives specifically designed to improve diagnosis and treatment of rhythm disorders, coronary artery disease, hypertension, and heart failure could go a long way in helping reduce the global burden of cardiovascular disease. We are in acute need of targeted therapies in cardiovascular care, and we also need precision medicine approaches that would provide us with more advanced drugs that not only treat patients better, but could potentially prevent cardiovascular disease altogether. The premise of personalised medicine, and its focus on understanding the human genome can enable healthcare providers to look deeper into the causes of heart disease. Spotting biomarkers that could help clinicians identify patients at high risk for future issues such as heart failure, arrhythmia and atherosclerosis could go a long way in helping curtail the increasing prevalence of cardiovascular disease. This is especially true since a large majority of cases of coronary artery disease are linked to the patient's genetics. I strongly believe that genetic insights and the increasing use of personalised medicine can change the way we prevent, diagnose and treat cardiovascular disease.

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What the critics really focus on is the use of PM at a population level. They need to see the clinical advantages to the full population of patients with a given disease – for example, breast cancer. Will we see benefits by using this technology and using this therapeutic target at a population level? Will it bring down costs? Will it incur higher costs and does the cost equal the benefit we're getting? These are the questions that critics are asking. To those critics I would say, like any system, we need to develop the regular use of PM so it can be implemented most effectively and efficiently in order to fully realise its value to both the patient and the population.

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Make no mistake, broad precision medicine implementation will happen. We're already seeing substantial, real-world evidence of progress and outcomes. Pioneering healthcare organisations have deployed various models, many of which focus on engaging underrepresented, minority, and disadvantaged patient groups. For now, reliable applications are limited to use cases for which significant clinical findings have been demonstrated. In such cases, payers, pharma, major vendors, and well-funded health systems are beginning to work creatively together. Over the past 18 months, KLAS has worked with dozens of leaders to validate the activities of leading precision medicine programs. The majority of healthcare leaders believe a business case exists today, and that the most impactful priorities for success in building a programme include provider education and engagement, multi-specialty collaboration, and stakeholder buy-in. Most do not feel the market lacks science or applicability. Success is primarily measured today by lives saved, enhanced quality of life, and disease prevention. Despite a growing consensus on how best to approach and scale a structured precision medicine programme, providers largely feel that widespread adoption remains several years out. Progress remains stifled by lack of agreement on reimbursement policy, education, and knowledge. Despite these challenges, provider organisations are highly optimistic about partnership opportunities in the industry. Precision medicine will supplement and complement current efforts to develop population health programmes by specifying and adapting care management to fit unique needs. In many ways precision medicine practice is informed somewhat by the robust analytics and stratification of information demanded by population health, However, the practice of precision medicine turns population health on its head primarily by systematically putting individual patients at the centre of analysis rather than a condition or risk state, and then scaling learnings across a population or sub-group.

We are beginning to see the intersection between precision health and population health through new strategies for predictive prevention – for example, efforts are underway to use genomics to predict individuals' risk of common diseases such as cardiovascular disease or type 2 diabetes. Ensuring the effective use of genomics and other types of patient data for predictive prevention at scale will require the health system to collect, manage and store data from healthy individuals, which could inform population-wide strategies to delay or prevent ill-health.

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