Towards Personalized Medicine
The challenge of securing medical information
Globally Unique Development and Testing Ground

As a decade ago, Clalit Health Services (Clalit), Israel's largest healthcare provider, used advanced analytics to create predictive models that could help doctors identify patients who would soon develop osteoporosis. This early identification, in turn, allowed doctors to prescribe the correct treatment in time to prevent falls and fractures. It was a real revolution: care that is biologically precise and individually tailored.

But while the Clalit model led to a significant reduction in hospitalizations, it was also a demonstration of the power of predictive models. These models, and the technologies they are built upon, are at the heart of personalized medicine.

Personalized medicine is a new approach to healthcare that seeks to tailor treatment to an individual patient's needs. This is made possible by the availability of large amounts of data on patients and their health care experiences. By using advanced analytics and artificial intelligence, healthcare providers can identify patterns and trends in this data that can help predict which patients are at risk for certain conditions and what treatments may work best for them.

The key to personalized medicine is data. And in Israel, there is no shortage of data.

Clalit, for example, is one of the world's largest health maintenance organizations (HMOs). It serves more than three million members, covering over 15% of the Israeli population. With such a large patient base, Clalit has access to a wealth of data on its members, including data on their medical history, treatments, and outcomes. This data is used to create predictive models that can help identify patients who are at risk for certain conditions and what treatments may work best for them.

Another example of personalized medicine in Israel is the work of Professor Ran Balicer, a leading expert in data analytics and predictive modeling.

In a key article published in the prestigious New England Journal of Medicine (2014), Balicer and his team used advanced analytics to create a predictive model...