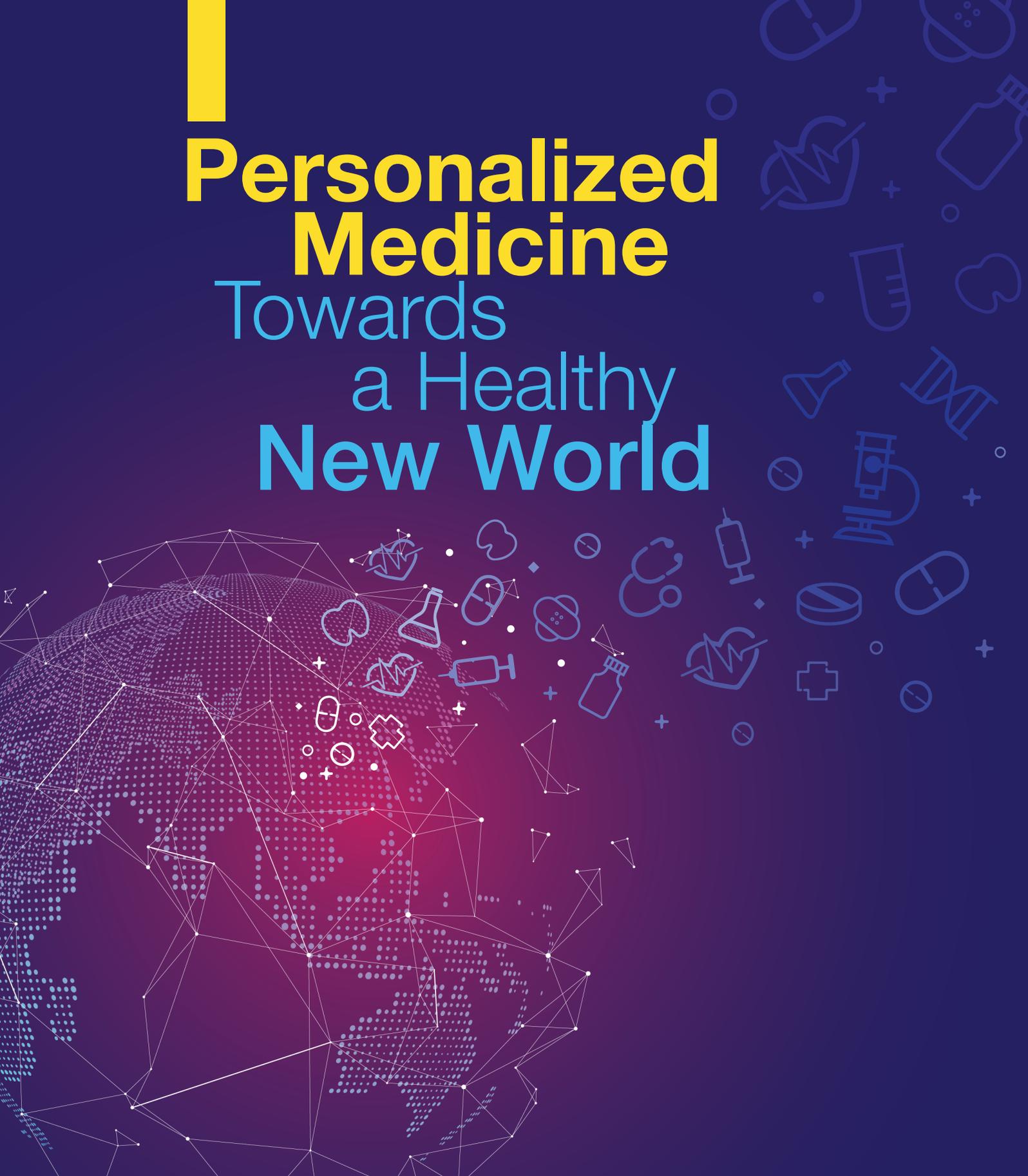




Personalized Medicine

Towards
a Healthy
New World



----- A Report by -----

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ARTIFICIAL INTELLIGENCE (AI)

The greatest wonder in our everyday lives is technology. Our phones keep getting smarter along with our televisions, washing machines and other household devices, while transportation is being revolutionized by smarter cars and, one day, even completely automated ones. We have recently seen a new wave of technology with remote work and even remote socializing. Technology has never looked more promising and more pervasive in our lives than now.



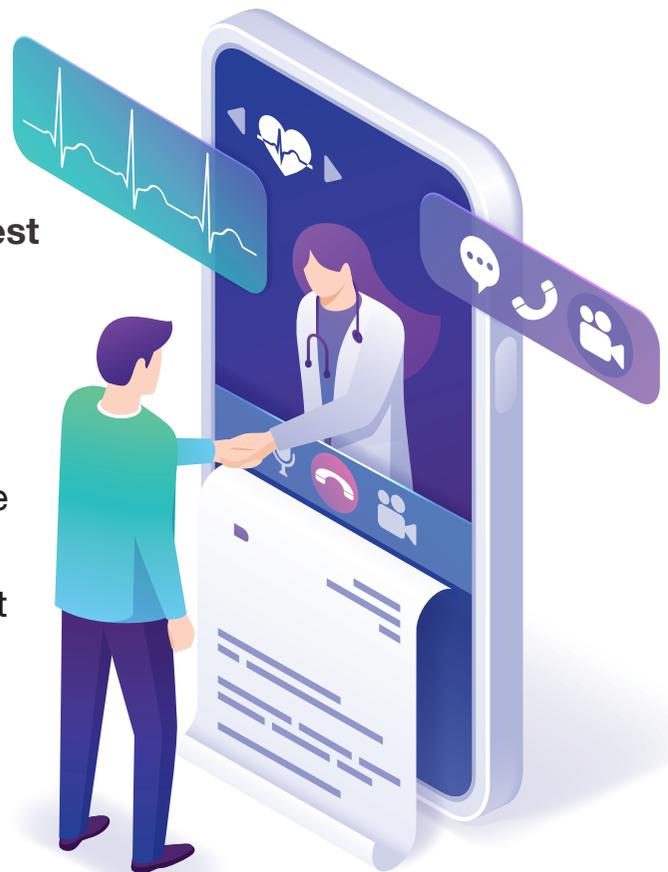
Part of the reason behind this new wave of technology is **Artificial Intelligence (AI)**. With AI tackling huge amounts of data, new horizons started opening up. Since much of this data is about individuals, we started seeing a trend of personalization happening online. Advertisements were targeted at us depending on what our internet surfing patterns were. Social media sites recommended products, friends and activities to us on the basis of profiles they constructed of us. Streaming and OTT sites would show us content that they thought we liked, again on the basis of our analyzed data. We had entered an era of personalization, and as more and more data started piling up about us, and as AI systems became better and better, more than advertisements or videos were on offer. Now, AI systems could offer us solutions to problems we never imagined.



IS **PERSONALIZED HEALTHCARE** A WAY FORWARD?

One of these unimaginable solutions is pre-emptive healthcare. We have all been shocked by news of athletes or seemingly fit, active, young and healthy individuals suddenly being hit by heart disease or cancer. We have all been shocked by this and wondered how arbitrary disease actually is. Now imagine being able to not only predict these diseases, but actually prevent them from occurring in the first place. Welcome to the world of Personalized Medicine.

Personalized Medicine is the outcome of technology combining with medicine. It allows us to potentially pre-empt disease and cure it before it even happens to us! It anticipates future health emergencies and takes action before they become critical. **The greatest limitation healthcare presently has is that it is essentially reactive and not proactive.** Once a symptom presents itself, healthcare tries to address that symptom through medicine and lifestyle changes. The problem with this is not only that it is defensive in approach, but also that it might be too late for the patient to become completely symptom-free. This is especially true in case of the lifestyle diseases like diabetes, heart disease, kidney disease or cancer that are growing at an exponential pace worldwide, but especially so in India.



COMBINING **TECHNOLOGY & MEDICINE** TO DIAGNOSIS



In Personalized Medicine these diseases are avoided by continuous monitoring. Data on individual patients is analyzed quickly and efficiently by AI, allowing healthcare providers to put together unique and individualized lifestyle and healthcare packages for each person.

Monitoring and analysis also means that Personalized Medicine can come up with perfect doses of medication for individuals. We have all experienced side effects from medication or have had to put up with over medication because most medications are only available in set dosages. People suffering from diabetes or hypertension often develop kidney disease because of their medication. Imagine being able to have access to a completely personalized dosage. A customized medication regimen could now be possible for every single patient, based on their individual requirements.

PERSONALIZED MEDICINE

AIMS FOR THE BEST
TREATMENT
FOR PATIENTS



All of us have different metabolisms which make universal diet plans or exercise goals impractical or even ineffective.

Personalized Medicine could develop individual diet and fitness regimes:

Personalized Medicine would allow healthcare professionals including dieticians and fitness specialists determine individual metabolic rates and prescribe personalized diet and exercise plans.

Personalized Medicine would be a great advantage in critical care patients:

Those with existing conditions like heart disease, diabetes or cancer could be closely monitored remotely to ensure optimum care.

Personalized usage of Vitamins & Supplements:

Though we should rely on a balanced diet as the source for all of the minerals and vitamins our body requires, but still, we consider supplementation as we face deficiency of vitamin D because of staying indoors due to work commitments or lousy weather. Physician & Nutritionist may suggest “Personalized Approach”.



PERSONALIZED MEDICINE

WOULD HELP IMPROVE QUALITY OF LIFE

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Personalized Medicine would allow healthcare professionals, including dietitians and fitness specialists, determine individual metabolic rates and prescribe personalized diet and exercise plans.

Another great advantage Personalized Medicine would be in critical care patients. Those with existing conditions like heart disease, diabetes or cancer could be closely monitored remotely to ensure optimum care. Personalized Medicine would also open up greater safety and efficiency in the healthcare field. Individuals could now be remotely monitored and attended to, minimizing the risk of infections among healthcare providers as well as other patients. Hospitals and healthcare institutions would have a much lesser inpatient load, allowing for better attention to those actually admitted. The use of AI would take a greater load off of doctors as patient data could be analyzed almost instantaneously.

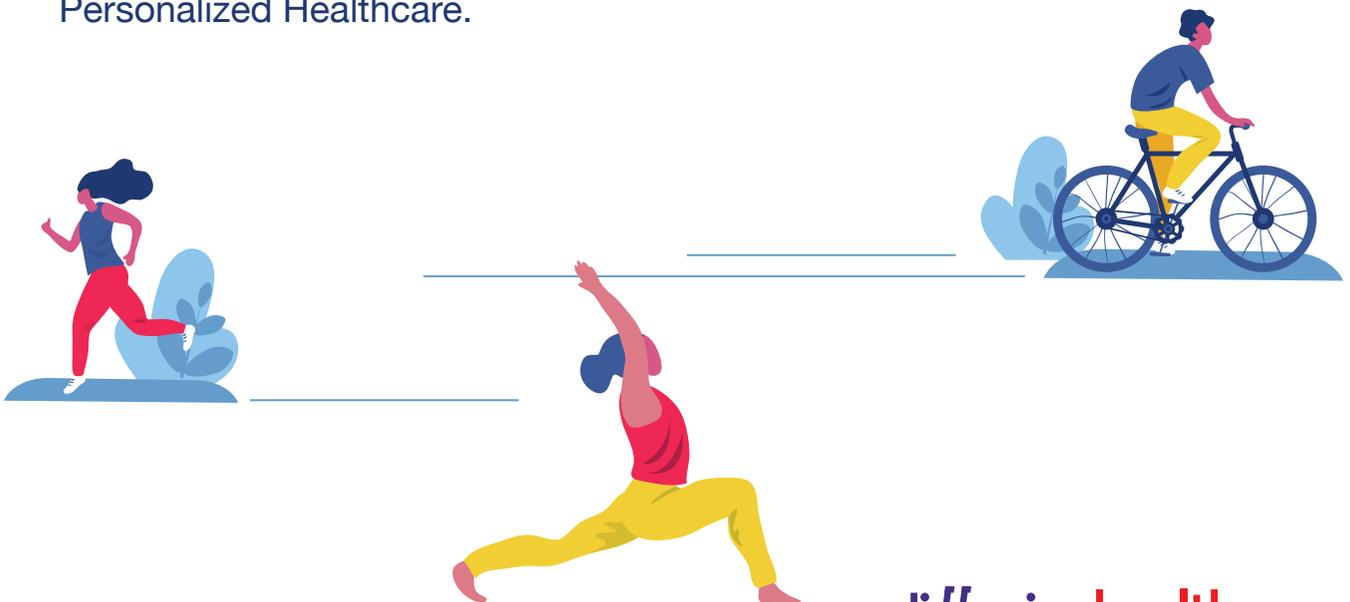
Round the clock monitoring with alerts in case of danger signs could be done in the comfort of a home instead of inside a hospital, freeing up crucial resources and keeping the comfort and well-being of the patient in mind.

However, the greatest beneficiary of Personalized Medicine would be the ordinary individual whose quality of life would improve almost exponentially. Regular monitoring of health signs would warn them of possible dangers ahead and allow them, in conjunction with healthcare providers, to make lifestyle changes to ward off disease. Regular and comprehensive monitoring would ensure compliance and allow healthcare providers to oversee the progress of a particular regimen. Most importantly, in case of existing disease, Personalized Medicine would provide for the most intelligent, comprehensive and dedicated treatment possible.



THE POSSIBILITIES ARE ENDLESS!

As AI continues to improve, it is not difficult to imagine a world where individuals with specific genetic markers for certain diseases would be monitored, mentored and medicated starting from an early stage in their lives. Medical conditions that we now consider chronic or untreatable could be avoided. Lives would be saved or at the very least extended much beyond what is possible today. We could be entering into a healthy new world made possible through Personalized Healthcare.





Thank you

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