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The future of hospitals

Hospitals will make way for home-care, with artificial intelligence, etc, as the norm



MALVINDER
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Healthcare in India is expected to witness a sea change by the middle of the century. A sharp focus on individual health and the preservation, longevity and quality of human life, will shift the paradigm irreversibly towards convenience, personalisation, pervasiveness and the economics of health.

The incentive for individuals to remain healthy and disease-free in a pre-emptive way will be substantial. Not only will they enjoy a better quality of life, but they will also benefit financially, as treatments that access scarce higher order medical skills will carry a premium.

A huge industry enabling people to stay healthy will emerge. Wearable devices, fitness-centres, health trackers, early diagnostics, tele-medicine, remote delivery and pre-emptive treatment options being the obvious.

There will be a tectonic shift in healthcare delivery. Hospitals will change, become smaller and highly specialised. Technology will become cheap and mass production will make it ubiquitous. Most of the OPD load will go away; so will diagnostic activity, releasing capacity for the most complex of cases.

The shift will be from hospital care to home care; illness to wellness; patient-centric to consumer-centric; doctor intervention to robotics; healthcare to health. By 2050, home healthcare will have become common. With portability of sophisticated medical equipment even chronic care could be conveniently delivered at home by the patient's bedside, and in familiar surroundings. Hospitals will have a lot more 'artificial intelligence' (AI), which will play a huge role in providing most healthcare solutions. Predictive data captured will be used by AI tools to diagnose, inform and recommend remedies. And these solutions will be prevalidated by healthcare professionals and commoditised to manage standard health problems with basic medical intervention.

Robotic health givers will become quite the norm for chronically ill people. This trend has already picked up in developed nations and will also pick up rapidly in India. Surgeons won't necessarily need to be present at hospitals. In future, the use of electronics and robotics will enable complex surgeries even from remote locations. Nursing capacity will be supplemented by a robot substitute. These experiments are already underway in countries such as the US and Japan and are only 5-7 years

away from being perfected. India will possibly see this a little later, but certainly by 2050, this mechanism will be much in evidence in our country.

Advances in Genomics will permit the free sequencing of the human gene, bypassing predictable disease patterns while ushering in precision medication. There will be a change from conventional therapy and mass treatment to individual solutions based on genomic structure and personal characteristics. High-risk individuals likely to encounter life threatening genetic disorders would pre-emptively undergo early detection and seek proactive cures through genetic modification or gene therapy or gene transfer.

Stem cell technology is also expected to play a significant role in disease treatment. Today, organ donation is a huge challenge. In the coming decades entire organs will be bio-engineered and grown in laboratories using stem cells.

Laboratory automation in routine testing is already replacing manual intervention and will continue to expand into complex areas because of its inherent benefits of reduced turnaround time, zero contamination and no manual errors. Multitude of lab tests including genetic tests can now be done from a single drop of blood – sheer painless non-invasive diagnostics, taken to an altogether new level of proficiency both in terms of time and money.

At Fortis, we are keeping a close watch on every new trend to expand access to high quality healthcare. With 'Critinext', our E-ICU, we have successfully deployed an advanced 24x7 internet-based application to centrally manage over 400 acute care patients at remote locations, in multiple hospitals around the country. This solution is scalable and can be expanded exponentially to cater to an ever growing demand for critical care. We are also looking at start-ups that are innovating newer ways of delivering healthcare and aspects related to artificial intelligence.

To sum up, by 2050, hospitals may handle only the most complex of cases, making way for more home-care. Artificial intelligence, robotics, genome therapy, organ implants, etc, will be the norm. It may not be an exaggeration that the average healthy life span of 100 years may soon be a reality!

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