Smart homes mean imminent upgrade in security and interoperability

Digital and wireless technologies are helping health systems to evolve beyond care delivery of the diseased to encompass numerous health and wellness touchpoints, transforming it from disease management to health management.

With this paradigm shift, industry experts say the home will become an increasingly valuable site for enhancing the healthcare experience as part of the progression of digital, remote, connected and virtual care.

"With the transition from volume- to outcomes-based care, there will be significant impact on patient engagement strategies in terms of adoption of wearables, apps and digital therapeutics with value and innovation remaining relevant," said Reenita Das, Partner and Senior Vice-President, Transformational Health at Frost & Sullivan.

One of the most notable disruptions in healthcare services over the next five years will be the concept of "smart homes", which involves a connected ecosystem of sensors and devices on and around the individual at home.

According to Frost & Sullivan, smart homes will amplify the benefits of precision health through personalisation, decentralisation, collaboration and prevention. Driven by the Internet of Things (IoT) and other technologies, smart home can deliver improved consumer experiences by communicating data between wearables, home monitoring devices, home-based sensors, consumer electronics and mobile apps.

The focus of a smart home will evolve from meeting critical care needs such as Aging-in-place, Chronic Disease Management and Post-acute Care Monitoring to focusing on overall health and wellness in areas of Maternal, Infant & Child Health, and Care for Physically and Intellectually Disabled and Health and Wellness for All.

At present, current tech interventions for medical specialities work in silos, providing disease-specific insights. For instance, blood glucose levels are solely monitored by individual machines such as Glucometers and CGMs.

However, the intelligent homes of the future will bring together technology to offer a holistic picture of person's health, providing quantifiable changes over time. An example would be the smart toilets and sensors in the home of the future which will analyse factors such as the number of bathroom visits, urine output and chemical composition.

In-depth connected ecosystems focusing on wellness and management will offer the greatest opportunities to industry and non-industry players. There will also be an increased need for cross-industry partnerships, according to Frost & Sullivan.

Amidst this digital transformation in healthcare, a massive data and workload exodus to the cloud is expected which will impact providers, payers, pharmaceuticals, medical equipment companies and government agencies.

With data the new currency in healthcare, Frost & Sullivan cites some important challenges that the industry faces:

- Organisations need to enhance cybersecurity risk management to prevent loss of confidential patient data and workflow disruption across critical care infrastructure.
- Greater interoperability of various data systems and devices that are critical to capturing holistic patient outcomes.

Other challenges include changes in the regulatory framework and payment models; significant dollar investment in new technologies and workflows, and cultural and consumer behaviour shift across all industry stakeholders.

Source: Frost & Sullivan
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