



TCS's AI-based IOT-enabled Healthsense Platform, analyzes physiological sensors and extract biomarkers, leading to efficient management of Non Communicable Diseases (NCDs).

THE CONTEXT



Non Communicable Diseases (NCD) such as cardiovascular and neurological diseases are a huge burden on the global healthcare system. According to World Health Organization (WHO), out of 100 global deaths including suicides and accidental deaths, 71 originate from NCDs, and almost half of the NCD related deaths are in the cardiovascular domain. Several factors such as poor rates of early detection, non-compliance and lack of continuum of care affect the management of these chronic diseases. Also, since Health Care Professionals (HCP) choose one of several treatment options, this can result in human error, delays in treatment and higher costs. Clinically reliable pre-screening and post-care solutions are the need of the hour. TCS also believes that low-cost wearables that can log physiological sensors unobtrusively can aid the stakeholders of the health care by determining the efficacy of the prescribed treatment, ensuring better disease management.

THE INNOVATION



TCS's connected health platform, HealthSense, comprises AI-driven Health Sense Foundry capable of generating a suite of clinically validated algorithms capable of monitoring various health parameters such as gait and balance for prevention of falls, cardiac anomalies, sleep monitoring, stress levels and other physiological markers. By discovering anomalies, the algorithms can establish a correlation between physiological readings and diseases, enabling users to identify a condition and quickly zero in on a treatment plan. Moreover, insurance, pharmaceutical and medical devices companies can choose any combinations of bio-markers and related sensors for early detection, diagnosis and assessing adequacy of treatment - the whole care continuum.

KEY CHALLENGES

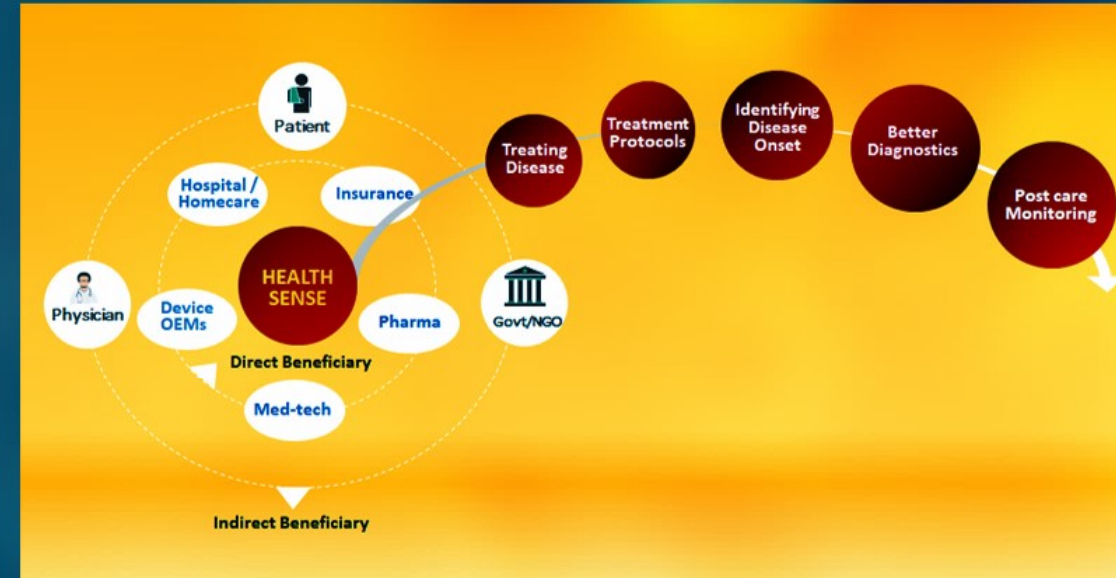


ESTABLISHING ECOSYSTEM

Developed innovation partners (academic institutes, hardware device partners and medical devices, pharmaceutical and insurance customers in collaboration with following TCS business units - Engineering & Industrial Services (EIS) and Life Science (LS)).

TECHNICAL CHALLENGE

Getting medical grade accuracy to capture bio-markers from multi-modal sensors in ambulatory settings. TCS has expertise in sensor signal cleanup, devising signal and statistical based features for AI driven disease trending.



POTENTIAL IMPACT



SOCIETAL IMPACT: HealthSense offers digital continuum of care in joint disease; thereby it can potentially enable self-health-tracking for millions of arthritis patients. This would immediately save or reduce the number of trips to clinics, which are not only physically painful but also adds on the mental trauma.

BUSINESS IMPACT: In a couple of years, TCS HealthSense envisages to reach tens of million USD business by partnering with clients in successful patient study and helping them prepare for production trial. Demonstration of longitudinal trending of bio-markers can bring further business.